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REPORT

OF THE

COMMISSIONER OF EDUCATION

FOR

THE YEAR 1898-99.

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Created as a Department March 2, 1867.

Made an Office of the Interior Department July 1, 1869.

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September 12, 1889, to date.

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1898-'99
Vol.-I

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REPORT OF THE COMMISSIONER OF EDUCATION.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., October 1, 1899.

SIR: I have the honor to submit herewith the Annual Report of this Office for the year ending June 30, 1899.

Total enrollment in schools and colleges.—There were enrolled in the schools and colleges, public and private, during the year 1898–99, 16,738,362 pupils, the same being an increase of 50,719 pupils over the previous year.

Of this number the enrollment in public institutions was 15,234,435 and that in private and incorporated institutions was 1,503,927.

Besides the enrollment in public and private institutions of all grades included in the above summary, there were pupils enrolled in special institutions as follows:

Enrollment in special schools, 1898–99.

City evening schools	185,000
Business schools	70,686
Indian schools	23,500
Schools for defectives	23,691
Reform schools	24,925
Orphan asylums and other benevolent institutions	14,000
Schools in Alaska	1,369
Kindergartens	93,737
Miscellaneous	50,000
Total	486,908

The miscellaneous in the above table includes such institutions as schools of music, oratory, elocution, cookery, and of various special arts.

This gives 17,225,270 as the grand total.

THE COMMON SCHOOLS.

Under this designation we include public schools of elementary and secondary grades, the former containing all pupils in the first eight years of the course of study and the latter the pupils in the next four years of the course usually conducted in high schools or academies. The State universities and professional schools are not counted in the "common schools," although, by reason of their receiving support from public funds, they might be thus classified correctly.

The average length of the school term is 143.2 days. It had never reached 140 days until the year 1895–96. The increase in urban population is accompanied by increase in the length of the school year.

TABLE I.—*Total number of pupils and students of all grades in both public and private schools and colleges, 1898–99.*

NOTE.—The classification of States made use of in the following table is the same as that adopted by the United States census, and is as follows: *North Atlantic Division:* Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. *South Atlantic Division:* Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. *South Central Division:* Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Oklahoma. *North Central Division:* Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. *Western Division:* Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California.

Division.	Pupils receiving elementary instruction (primary and grammar grades).		Pupils receiving secondary instruction (high-school grade). *a*		Students receiving higher instruction.								
					In universities and colleges. *c*			In schools of medicine, law, and theology. *e*			In normal schools. *g*		
	Public.	Private (largely estimated.)	Public. *b*	Private (in preparatory schools, academies, seminaries, etc.).	Public. *d*	Private.	Total.	Public. *f*	Private.	Total.	Public.	Private.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
The United States	14,662,488	1,193,882	488,549	166,678	30,050	73,201	103,251	8,540	46,594	55,134	44,808	23,572	*h* 68,380
North Atlantic Division	3,470,543	503,050	153,612	51,675	5,155	27,458	32,613	251	16,935	17,186	17,714	2,235	19,949
South Atlantic Division	2,115,448	88,947	27,404	24,004	3,762	10,200	13,962	831	6,017	6,848	3,794	1,581	5,375
South Central Division	2,903,112	147,172	37,151	31,522	2,848	11,401	14,249	1,118	4,740	5,858	3,272	4,155	7,427
North Central Division	5,446,805	423,170	242,655	49,863	14,180	21,093	35,273	5,566	17,572	23,138	16,325	14,826	31,151
Western Division	726,580	31,543	27,727	9,614	4,105	3,049	7,154	774	1,330	2,104	3,703	775	4,478

a Including pupils in preparatory or academic departments of higher institutions, public and private, and excluding elementary pupils, who are classed in columns 2 and 3. A classification of public and of private secondary students, according to the character of the institutions in which they are found, is given in Chap. XLI, vol. 2.

b This is made up from the returns of individual high schools to the Bureau, and is somewhat too small, as there are many secondary pupils outside the completely organized high schools whom there are no means of enumerating.

c Including colleges for women, agricultural and mechanical (land-grant) colleges, and scientific schools. Students in law, theological, and medical departments are excluded, being tabulated in columns 9–11. Students in academic and preparatory departments are also excluded, being tabulated in columns 4 and 5.

d Mainly State universities and agricultural and mechanical colleges.

e Including schools of dentistry, pharmacy, and veterinary medicine.

f Mainly in schools or departments of medicine and law attached to State universities.

g Nonprofessional pupils in normal schools are included in columns 4 and 5.

h There are, in addition to this number, 25,307 students taking normal courses in universities, colleges, and public and private high schools. (See Chap. XL, vol. 2.)

TABLE I.—*Total number of pupils and students of all grades in both public and private schools, 1898–99*—Continued.

Division.	Summary of higher (including normal) instruction.		Summary of pupils by grade.			Summary according to control.		Grand total.	Per cent in each grade of the whole number of pupils.			Per cent of public pupils.			
	Public.	Private.	Elementary.	Secondary.	Higher.	Public.	Private.		Elementary.	Secondary.	Higher.	Elementary.	Secondary.	Higher.	All grades.
1	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
The United States	83,398	143,367	15,856,370	655,227	226,765	15,234,435	1,503,927	16,738,362	94.73	3.91	1.35	92.47	74.56	36.78	91.02
North Atlantic Division	23,120	46,628	3,973,593	205,287	69,748	3,647,275	601,353	4,248,628	93.53	4.83	1.64	87.34	74.83	33.15	85.85
South Atlantic Division	8,387	17,798	2,204,395	51,408	26,185	2,151,239	130,749	2,281,988	96.60	2.25	1.15	95.97	53.31	32.03	94.27
South Central Division	7,238	20,296	3,050,284	68,673	27,534	2,947,501	198,990	3,146,491	96.94	2.18	.88	95.18	54.10	26.29	93.68
North Central Division	36,071	53,491	5,869,975	292,518	89,562	5,725,531	526,524	6,252,055	93.89	4.68	1.43	92.79	82.95	40.27	91.58
Western Division	8,582	5,154	758,123	37,341	13,736	762,889	46,311	809,200	93.69	4.61	1.70	95.84	74.25	62.48	94.28

TABLE II.—*Common-school statistics of the United States.*

	1870–71.	1879–80.	1889–90.	1893–94.	1894–95.	1895–96.	1896–97.	1897–98. *a*	1898–99. *a*
I.—*General statistics.*									
Total population	*b* 39,500,500	50,155,783	62,622,250	*b* 68,064,250	*b* 69,103,730	*b* 70,584,680	*b* 71,480,242	*b* 72,737,100	*b* 73,960,220
Number of persons 5 to 18 years of age	*b* 12,305,600	15,065,767	18,543,201	*b* 20,137,521	*b* 20,440,479	*b* 20,863,807	*b* 21,114,812	*b* 21,458,294	*b* 21,830,774
Number of different pupils enrolled	7,561,582	9,867,595	12,722,581	13,995,357	14,243,765	14,498,956	14,823,059	15,038,636	15,138,715
Per cent of total population enrolled	19.14	19.67	20.32	20.56	20.61	20.54	20.74	20.68	20.47
Per cent of persons 5 to 18 years of age enrolled	61.45	65.50	68.61	69.50	69.68	69.48	70.20	70.08	69.34
Average daily attendance	4,545,317	6,144,143	8,153,635	9,263,350	9,548,722	9,781,475	10,052,554	10,286,092	10,389,407
Ratio of same to enrollment (per cent)	60.1	62.3	64.1	66.2	67.0	67.5	67.8	68.4	68.6
Average length of school term (days)	132.1	130.3	134.7	139.5	139.5	140.5	142.0	143.1	143.2
Total number of days attended by all pupils	600,432,802	800,719,970	1,098,232,725	1,292,751,289	1,331,775,201	1,374,732,974	1,427,402,478	1,471,435,367	1,488,076,102
Average number for each person 5 to 18 years of age	48.7	53.1	59.2	64.2	65.1	65.9	67.6	68.6	68.2
Average number for each pupil enrolled	79.4	81.1	86.3	92.4	93.5	94.8	96.3	97.8	98.3
Male teachers	90,293	122,795	125,525	125,402	129,706	130,373	131,221	131,750	131,793
Female teachers	129,932	163,798	238,397	263,547	268,336	269,923	273,737	277,443	283,867
Whole number of teachers	220,225	286,593	363,922	388,949	398,042	400,296	404,958	409,193	415,660
Per cent of male teachers	41.0	42.8	34.5	32.2	32.6	32.6	32.4	32.2	31.7

Average monthly wages of teachers: *c*									
Males				$44.76	$46.82	$47.37	$44.62	$45.16	$45.25
Females				$37.48	$39.41	$40.24	$38.38	$38.74	$38.14
Number of schoolhouses	132,119	178,222	224,526	238,423	239,630	242,528	243,753	242,390	244,527
Value of school property	$143,818,703	$209,571,718	$342,531,791	$428,238,256	$440,666,022	$459,581,687	$477,321,190	$492,703,781	$524,089,255
II.—*Financial statistics.*									
Receipts:									
Income from permanent funds			$7,744,765	$8,440,959	$7,800,740	$7,960,939	$9,047,097	$9,213,323	$9,019,375
From State taxes			26,345,323	32,749,646	34,638,098	35,032,253	33,941,657	35,600,643	36,197,338
From local taxes			97,222,426	112,785,117	118,915,304	124,879,906	130,317,708	134,104,053	143,371,150
From all other sources			11,882,292	16,428,458	15,210,769	14,606,873	18,652,908	20,399,578	15,429,749
Total raised			143,194,806	170,404,180	176,564,911	182,479,971	191,959,370	199,317,597	204,017,612
Per cent of total derived from—									
Permanent funds			5.4	4.9	4.4	4.4	4.7	4.6	4.4
State taxes			18.4	19.2	19.6	19.2	17.7	17.9	17.7
Local taxes			67.9	66.2	67.3	68.4	67.9	67.3	70.3
All other sources			8.3	9.7	8.7	8.0	9.7	10.2	7.6
Expenditures:									
For sites, buildings, furniture, libraries, and apparatus			$26,207,041	$30,607,688	$29,436,940	$32,590,112	$32,376,476	$32,814,532	$33,249,949
For salaries of teachers and superintendents	$42,580,853	$55,942,972	91,836,484	109,202,405	113,872,388	117,139,841	119,310,503	123,809,412	128,662,880
For all other purposes			22,463,190	33,292,750	32,499,951	33,769,012	35,995,290	37,396,526	35,368,774
Total expended	69,107,612	78,094,687	140,506,715	172,502,843	175,809,279	183,498,965	187,682,269	194,020,470	197,281,603
Expenditure per capita of population	1.75	1.56	2.24	2.53	2.54	2.60	2.63	2.67	2.67
Expenditure per pupil (of average attendance):									
For sites, buildings, etc			3.21	3.24	3.08	3.33	3.22	3.19	3.20
For salaries	9.37	9.10	11.26	11.79	11.93	11.98	11.87	12.04	12.39
For all other purposes			2.76	3.59	3.40	3.45	3.58	3.63	3.40
Total expenditure per pupil	15.20	12.71	17.23	18.62	18.41	18.76	18.67	18.86	18.99
Per cent of expenditure devoted to—									
Sites, buildings, etc			18.6	17.4	16.7	17.8	17.3	16.9	16.9
Salaries	61.6	71.6	65.4	63.3	64.8	63.8	63.6	63.8	65.2
All other purposes			16.0	19.3	18.5	18.4	19.1	19.3	17.9
Average expenditure per day for each pupil (cents):									
For tuition	7.1	7.0	8.4	8.4	8.5	8.5	8.4	8.4	8.6
For all purposes	11.5	9.7	12.8	13.3	13.2	13.3	13.1	13.2	13.3

a The figures for 1897–98 and 1898–99 are subject to correction. *b* Estimated. *c* Several States are not included in this average.

AVERAGE AMOUNT OF SCHOOLING PER INHABITANT.

The following tables answer the question: How much schooling does the inhabitant of the United States receive on an average? The first table includes both public and private, the second only the "common schools."

TABLE III.—*Average number of years of schooling (of 200 days each) that each individual of the population received at the different dates specified in the table, and taking into account all public and private schooling of whatever grade.*

	1870.	1880.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	a1898.	a1899.
The United States.	3.36	3.96	4.46	4.51	4.49	4.52	4.72	4.75	4.83	4.93	5.00	4.96
North Atlantic Division.	5.06	5.69	6.05	6.15	6.18	6.10	6.35	6.47	6.52	6.64	6.75	6.70
South Atlantic Division.	1.23	2.22	2.73	2.78	2.74	2.79	2.95	2.95	2.93	2.98	3.14	3.05
South Central Division..	1.12	1.86	2.42	2.62	2.69	2.64	2.89	2.65	2.70	2.89	2.95	3.15
North Central Division..	4.01	4.65	5.36	5.35	5.21	5.38	5.57	5.69	5.84	5.87	5.87	5.71
Western Division.....	3.56	4.17	4.57	4.71	5.07	4.93	5.01	5.43	5.46	5.78	5.77	5.76

TABLE IV.—*The same, taking into account only the schooling furnished by public elementary and secondary schools.*

	1870.	1880.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	a1898.	a1899.
The United States.	2.91	3.45	3.85	3.93	3.97	3.99	4.17	4.23	4.28	4.39	4.46	4.43
North Atlantic Division.	4.43	4.84	4.99	5.06	5.10	5.10	5.28	5.47	5.52	5.61	5.71	5.67
South Atlantic Division.	.80	1.90	2.42	2.46	2.46	2.51	2.70	2.68	2.66	2.72	2.87	2.78
South Central Division..	.80	1.57	2.20	2.31	2.41	2.38	2.59	2.39	2.44	2.63	2.68	2.88
North Central Division..	3.71	4.19	4.67	4.74	4.75	4.84	5.00	5.15	5.21	5.28	5.25	5.14
Western Division.....	2.77	3.57	3.98	4.16	4.47	4.39	4.45	4.87	4.95	5.25	5.25	5.28

a Subject to correction.

State school systems.—Appended to this introduction, Mr. F. E. Upton, specialist in State school systems, has presented in a series of tables, numbered 1 to 19, the results of his compilation of the returns made from year to year by State superintendents of public instruction.

Dental schools.—I also print as an appendix a conspectus of the courses of study of dental schools in the United States, so far as these can be determined from published catalogues. Recently there has been an increased sale of bogus diplomas, certifying to the competency of their purchasers to practice dentistry. The sales have been made not only in this country, but in various countries of Europe. The courses of study will aid officers of the law, wherever this report comes to hand, to decide upon the merits of institutions in good standing, while the list of schools which are members of the National Association of Dental Faculties (prefixed to the conspectus of the courses of study) will furnish an additional test. The issue of bogus diplomas in medicine and dentistry calls for a concerted movement on the part of honest practitioners, as well as the faculties of institutions that offer a thorough course of instruction, to second proper legislation against the

fraudulent issue of diplomas. The numerous scandals connected with the two or three chartered schools which are engaged in this nefarious business go far to discredit abroad the standing of American physicians and dentists.

Great Britain and Ireland.—Chapter I gives a historical review of the movement of elementary education in England. It appears that the annual Government grant for elementary schools in England, which began in 1833 with $100,000, had increased to $22,405,930 in 1897, in which year the total cost of such schools was $52,537,325, while in Scotland the current expenditure was $7,403,068 and in Ireland $5,822,999. In England the attendance was 81.5 per cent of the enrollment; in Scotland, 84.45 per cent; and in Ireland, 63.9 per cent.

After the Berlin conference of 1890 some concern was felt that England was not keeping pace with the leading nations in the matter of elementary education, and it was urged that this inertness might result in a diminution of commercial supremacy as compared with Germany. This apprehension, supported by other considerations, such as the relation between illiteracy and crime, exemption of working children, etc., led to much vigorous discussion of the condition and defects of elementary education by the school authorities and the press, and this agitation of so important a matter resulted finally in the recent legislation upon the subject, which, beginning with such matters as attendance and children's work in factories, culminated in the board of education bill in 1899, affecting secondary education. It will be observed that there was nothing theoretical or experimental in this step. The characteristic conservatism of the national character appeared in waiting until the proposed action was felt to be a commercial need before adopting it.

The science and art department, which has been a prime mover in the encouragement of the branches of education indicated by its title, had 197,796 students in science and 146,720 art students in 1897, a total of 344,516 in this class of secondary schools. It is significant that 142,293 of the art students were pursuing some branch of industrial art. The department has the disbursement of an annual grant which amounted to $3,960,229 in 1897–98.

The interest in technical education which has been developed in England in the last twenty years has also been somewhat increased by the commercial competition of Germany and a consciousness of inferior technical training in certain branches. An idea of the esteem in which technical education is now held may be gathered from the fact that $5,000,000 from all sources were expended for scientific and technical schools in 1897, while 32,899 students attended the different courses of instruction.

The board of education bill introduced by the Duke of Devonshire in 1898 became a law in 1899. It provides for the establishment of a

board connected with the superintendence of secondary education in England and Wales. This board will supplant the education department, including the science and art department, and will be the preliminary step, as Professor Jebb remarked in his speech in Parliament, toward organizing secondary education in England. It provides for inspection of secondary schools, if desired by them, and from its general character and functions will tend to promote the continuity and unity of the system. It is a significant feature of recent education in England that many pupils of the elementary schools take secondary studies.

The multiplication of local colleges in England and the increase of university affiliations and influence are noticeable features of the recent history of higher education. The modern spirit is shown by the disposition to make scientific pursuits prominent and give them official recognition at the universities. At Oxford this tendency was manifested some years since by the provision for special study and scientific research and the creation of degrees of bachelor of letters and bachelor of science. Cambridge also admits advanced students for the purpose of research. The determination to make not only science and technology university subjects, but even commerce and industry, is also shown by the papers quoted in the appendix to Chapter I upon the scope of the studies in the new universities of Birmingham and Wales.

Australasia.—Chapter II (pp. 67–87) presents the condition of education in Australasia, New Zealand, and Tasmania.

In Australia the educational standards established by law are only attainable in the larger towns or cities, and there is consequently a marked difference between the condition of schools in them and in the isolated communities and pioneer settlements. The law recognizes this difference and authorizes special adjustments making provision for teaching in places where the population is scanty by such means as alternate schools in adjoining districts or half-time schools; children are also carried to school at the public expense in sparsely populated districts. Each colony has hitherto had its own minister of public instruction, but the year 1898–99 marks the final adoption of articles of political federation of the colonies and the establishment of a common capital in New South Wales, which will doubtless tend to unify the educational system.

The average attendance of the elementary schools in 1897 was 399,128, the enrollment being 596,242, and the percentage of attendance ranging from 65.6 to 73 in the different colonies. The total expenditure for elementary (public day) schools was $8,253,746 in 1897.

The development of elementary schools in Australia has followed the same course as in England, but has had less resistance to overcome. The schools are now mostly state and secular, and attendance is com-

pulsory by law. As is to be expected from the history and character of the population, technical and scientific education receives a large share of attention. In New South Wales, for example, technical training is begun in the public schools in the shape of drawing lessons, manual training, cookery, and needlework. There were 5,848 students attending the Sydney Technical College, the suburban and county classes, and special classes devoted to technical education in the public schools. Thirty-five students of the technical colleges were examined at the technological examinations of the "City and Guild of London Institute" held in April, 1898, of whom 28 passed. This tendency toward technical education is shown in the other colonies by the establishment of schools of agriculture, and by providing technical instruction in the higher classes of the elementary schools for pupils who intend to enter mining schools or agricultural colleges.

In New Zealand the public schools are free and secular and had on an average a daily attendance of 83.9 per cent of the enrollment in 1897. A striking feature of education in New Zealand is the provision made for teaching Maori children. There were 74 village schools for these natives in 1897 attended by 2,864 pupils with an average daily attendance of 77.5 per cent, and 4 boarding schools with 263 pupils, of whom 73 were maintained at the expense of the Government. This is exclusive of 2,260 Maori children in the ordinary schools.

New Zealand expended $2,400,182 for public education in 1897, or $3.36 per white inhabitant. The administration is centralized in one of the Crown ministers. Technical education in elementary schools is recognized by law and is continued in the secondary schools, of which there are 24, and at the university.

The University of New Zealand is an examining body empowered to confer degrees. Undergraduates pursue their studies at affiliated colleges. The university has conferred 627 degrees on examination; only 43 of these were B. Sc. and D. Sc. degrees. There were 730 candidates for admission in 1897 and 66 graduates, of whom 48 were B. A. and 4 B. Sc.

Eighty per cent of the population of New Zealand can read and write.

It is to be noted that the inspector of education in Tasmania appeals for secondary education on modern lines to supplement the elementary schools. The expenditure for education in 1897 was $172,869.90 for an enrollment of 16,634 and an average attendance of 12,024, which makes the cost $10.38 for each pupil enrolled.

Belgium.—Chapter III (pp. 89–123) gives a summary of the history of Belgian education from 1842 to the present time. The general form of the system has changed but little, and comprises primary, secondary, and superior departments, under the minister of public instruction and his directors. Institutions of all grades receive State

appropriations which are in larger and larger proportion the higher the grade, until they defray nearly the whole cost of the State universities. The total enrollment in primary schools, public and private, has increased from 426,385 in 1845 to 752,062 in 1896.

Until 1879, religious instruction was obligatory and in charge of the priest or of the minister of the commune. In 1879, when the Liberal party came into power, a new law inaugurated a total change in this respect and religious instruction was excluded from the school and left to the family and church. The law was in operation five years, during which period there was a falling off in the communal schools of 36 per cent of their pupils.

In 1884, when the Catholic party regained power, a new law restored religious instruction as an optional branch, while the law of 1894 made it obligatory, and the law of 1895 placed it in the charge of the clergy.

In Belgium the commune (or township) takes the initiative in providing elementary schools, every commune being required to have at least one. It contributes to the support of the school by special tax, the province and the State supplying the balance. In 1896 the expenditure for elementary instruction was $6,663,705, equivalent to $1.02 for each inhabitant, of which sum the communes contributed 46.2 per cent, the State 41.6, and the provinces 5 per cent, the rest being made up from fees, legacies, subscriptions, etc.

The secondary schools show the influence of the prevailing "modern" ideas by the modifications in their programmes, which show a notable decrease in the time given to Latin and Greek, more extended instruction in "modern humanities," the enlarging of the courses in mathematics and physics, and the introduction of commercial courses. These changes, however, have been rather favorable than otherwise to the Greek-Latin humanities in some respects.

In Belgium, which is noted for technological attainments, technical education is also divided into three grades. The primary degree contains the "écoles professionnelles," to the secondary belong the industrial schools, while the superior is represented by the engineering and architectural departments of the university. The use of the term "professional" as applied to primary technical schools is noteworthy. With us a professional school is a medical, law, or theological school, while in Belgium (and France) it means a school in which training for special occupations—tailoring, shoemaking, carpentering, etc.—is given, the French word "profession" meaning "business" or "calling," while the English word is restricted to the educated occupations. These schools are called trade schools in England. In Belgium they are equipped with workshops. The industrial schools are mostly evening schools, and are open on Sundays as well as week days. Their students are workmen or employees occupied in work-shops dur-

ing the day. The programmes of the schools vary, but all have drawing, mathematics, and physics. The initiative for professional schools is taken by the State in Belgium, while in Germany corporations generally take the initiative, as individuals do in England.

Superior technical instruction is given in schools of art, manufactures, mines, and engineering, attached to the universities, and a number of technical schools which have been grouped around the universities as adjuncts to the faculties of science. The university degrees to technical students are those of civil engineer of mines, of architecture, etc., and of mechanical or electrical engineering. Out of a total of 4,835 students at the four universities, 937 were science students and 1,010 technical students in 1896.

Education in central Europe.—In Chapter IV, entitled "Education in central Europe" (pp. 125–235), a comparative review of the educational statistics of the Kingdom of Prussia is first given, in which the results of the last three official quinquennial reports, those of 1886, 1891, and 1896, are subjected to a critical analysis. A number of facts, characteristic of Prussian conditions, come to light in this analysis, notably that the average number of pupils to a teacher in the elementary public schools is larger than it is in France and the United States, though it has decreased from 64 to a teacher in 1886 to 57 in 1896, while the total number of pupils enrolled has increased in ten years from five and a fourth millions to five and three-fifths millions. Compared with the school enrollment of the United States this seems small, but it does not represent the total number of children receiving elementary education. The secondary schools not only reach down to the tenth year of age, but have in most cases elementary classes for pupils from 6 to 10 years. While in this country all children from 6 to 18 attending school are counted, the Germans count only those who come under the law of compulsory attendance; that is, those 6 to 14 years of age.

Another very striking fact is, that in 1896 the number of children who spoke German only amounted to 86¼ per cent, while that of the children who spoke Polish only was 10½ per cent. About 3 per cent spoke the two languages.

Especially large is the increase in the number of women teachers, from 6,848 in 1886 to 10,271 in 1896. This is attributable to the advantageous openings for young men in more lucrative pursuits during the recent phenomenal expansion of German industry and commerce. There is an urgent demand for teachers in Prussia, which is seen from the fact that there are only 86 regularly appointed teachers to every 100 classes or grades. The local authorities have resorted to the expedient often made use of in this country, namely, the establishment of half-day schools.

The salaries of teachers have been much improved in consequence of

the new laws passed by the Prussian Diet; the sum spent for salaries, which was $19,500,000 in 1886, rose to nearly $30,000,000 in 1896. The State's quota of the expenditures for elementary schools is now 16 per cent in cities and 39 per cent in rural districts. The per capita expense for elementary education, which was only 50 cents in 1861, 83 cents in 1871, 98 cents in 1886, has increased to $1.53 in cities and $1.29 in rural districts. This increase is very marked. If to this were added the per capita spent for maintaining evening and holiday schools and for elementary instruction connected with secondary schools, the per capita would be $2 in cities, but would not be materially increased in rural districts.

While the number of classes far outnumbers the teachers appointed, it also outnumbers the class rooms available; hence the want of teachers combines with that of the want of room to make half-day schools necessary. This is plainly brought out by comparing the number of classes, 92,001, with the number of rooms, 78,431, and the number of teachers, 79,431. Such undesirable conditions are chiefly found in the eastern provinces.

A second article in this chapter deals with "School attendance and compulsory education in Europe." It is found that the earliest feeble endeavors to establish compulsory education date back to the sixteenth century. Slowly, but never retrograding, the movement spread among the German states, until finally, at the beginning of this century, laws making school attendance compulsory for children between 6 and 14 years were on the statute books of every German state. How strictly they were carried out may be seen from the fact that at the last conscription of army and navy recruits there was found only one one-hundredth of 1 per cent of illiteracy. The article contains quotations from the various laws in force in Germany and cites the provisions made for compulsory school attendance in other countries of Europe. It also shows how the laws are executed and with what results.

The third article deals with "Teachers' pensions and annuities." The present regulations in force in central Europe and other European countries are stated for elementary and secondary school teachers. The practice of paying pensions to teachers as civil officers of the State is quite old in Germany, but all other countries in Europe have followed the German example, except Switzerland, where teachers are elected by the communities for a period of six years. In most cases they are reelected, but the principle is maintained that in a democratic Republic the establishment of an official class is to be prevented by rotation in office. This also precludes legislation for pensioning teachers. In some cantons of Switzerland the teachers make the payment of a pension a condition in their contract with the communal authorities.

A symposium on manual training in Germany given in this chapter reveals the fact that the teachers and school authorities are not very enthusiastic in introducing shopwork in the elementary schools. They acknowledge the desirability of training youth to become practical and active men, with a view to saving them from falling into vicious and immoral habits, but they are emphatic in advocating this kind of training more especially for continuation schools; that is, schools for boys who have gone through the course of the elementary schools, but who are not old enough to enter upon the pursuit of a livelihood. It is claimed that the elementary school is primarily an institution for the intellectual development of children. There are, indeed, many advocates of manual training who would add the workshop to every school, but as yet they are in the minority.

The next section of this chapter states what is done in the various German States in maintaining supplementary or continuation schools. As far as possible, the expenditures are itemized. Corroborative evidence from consular reports and English visitors prove the wide and beneficial influence of these schools.

A table in which the professional preparation of the Prussian normal-school teachers is given shows that 16 per cent of them have studied theology, 21 per cent have graduated from the philosophical faculty of universities, 61 per cent are normal graduates, and 2 per cent have both normal and university training.

The educational institutions of the Kingdom of Saxony are sketched in detail, beginning with the University of Leipsic, and showing that this little Kingdom is admirably provided with institutions of learning for general as well as for special, chiefly industrial, education.

The Swiss Central Government, like our own Federal Government, has no jurisdiction over the local schools of the States or Cantons, and the constitution expressly forbids Federal interference in the management of schools. Nevertheless, efforts are being made to induce the Federal legislature to subsidize the schools, as it does other institutions. In this chapter a translation of a petition prepared by representatives of all the Cantons, in convention assembled, shows upon what grounds it is proposed to grant subsidies, and the mode of computing and distributing them. The document is especially interesting in view of the unsuccessful efforts in this country in behalf of Federal aid for common school education.

A brief history of Hungarian secondary schools, inserted in this chapter, will be welcome to those who are still discussing the question whether or not the state should go beyond providing for elementary education.

The chapter closes with a series of tables showing the attendance at German universities during a period of nearly seventy years. These tables, prepared by the eminent statistician, Prof. J. Conrad,

of Halle, demonstrate a steady growth of the faculties of law, medicine, and philosophy, but a very decided falling off in the number of students of theology, both Protestant and Catholic. The philosophical faculty, which really consists of two departments, (1) the philological, philosophical, and historical, and (2) the scientific and mathematical sections, has outstripped all the faculties in its phenomenal increase in the number of students in attendance. From 83 in every million of inhabitants in 1831 this faculty has increased to 213 in every million in 1899, despite the simultaneous development of the technological schools, which alone enroll thousands of students who in the other countries are obliged to attend universities in the absence of technological institutions.

Education in Sweden.—In Chapter V (pp. 237–257) is given an interesting statement of the educational conditions prevailing in Sweden, condensed from a pamphlet by Dr. C. G. Bergman, inspector of elementary schools in Stockholm.

The schools are of the same grades and general character as those of the United States, but in Sweden more stress is laid upon technical and industrial training and slöjd. For the younger children there are ambulatory (i. e., schools that move from house to house through the district) and stationary schools of elementary grade, the former being necessitated by the topography of the country. In the year 1882 there were about two-thirds of the pupils between 7 and 14 years of age in stationary schools, and one-third in ambulatory schools. In 1895 there were 22.6 per cent in ambulatory schools, and 77.4 per cent in stationary schools.

With a population of 5,062,918 in 1898 there were 733,836 pupils in elementary schools, 16,520 in secondary schools, 1,410 in people's high schools, and 1,221 students in normal schools. The amount spent on elementary education was $4,180,568, one-fourth of which was furnished by the State. The ratio of elementary pupils to the total population was 14.49 per cent; the expenditure per capita of enrollment, $5.69; per capita of population, 82 cents.

Among the recruits of 1896 only 0.13 per cent were unable to read, and only 0.63 unable to write.

There is a rigid school inspection throughout urban and rural districts, the number of the inspectors depending upon the needs of the schools, as determined by the school authorities.

A class of schools found in Scandinavia is that of the people's high schools, which "aim to inculcate knowledge of the history of the Fatherland, and to so train the children of the peasant class that they may feel especial interest in the problems of citizenship." These schools are a grade above the elementary; no entrance examination is required, but those desiring admission must have passed through the elementary schools and be 18 years of age in the case of boys, or 16

years in that of girls. Boys attend these schools from November to May; girls from May to August.

The secondary schools are classical and nonclassical in character, the former leading to the university, the latter training for practical life. Of the 705 graduates in 1896, 51 were women. In 1896 there were 3,977 students taking the classical course, and 4,246 the nonclassical.

Coeducational institutions are usually private, but several receive state aid. The Palmgrenska Samskolan, the oldest high-grade school of this class, receives $2,144 from the state. The main effort of the coeducational schools is to have an eclectic course, to adopt the best methods of instruction in foreign languages and other studies, to train in slöjd, etc.

The pay of teachers varies in different schools, and for each class of schools the minimum amount is prescribed by law. These amounts will be found tabulated in detail. By law of Parliament in 1898 the salaries of teachers after ten years' service must not be less than $214.40, with lodging, board, and fuel.

The pensioning of teachers in elementary and higher elementary schools is managed by a special board. Every school district pays from $8 to $13.40 annually toward this object, and the state gives a certain quota. The maximum pension is $201, the minimum $141, but an act of Parliament (in 1898) established a basis for a more substantial pension.

The universities in Sweden (Upsala, 1,426 students, and Lund, 582 students, in 1899) have the four faculties. To all except theology women are admitted. There is also a state faculty of medicine in Stockholm (296 students) and private philosophical faculties in Stockholm and Göteborg.

The Royal Central Gymnastic Institute trains both sexes in gymnastics. It was established in 1813 by Per Henrik Ling. In 1896 there were 59 men and 28 women receiving gymnastic training and 665 patients were being treated for various diseases. High-grade military and naval schools train for these two branches of the service, and there are lower-grade schools to train recruits.

The lower grade technical schools give industrial training. There are 32 of these, and they are generally evening and Sunday schools for the benefit of working people who have no other hours apart from their labor. Schools of agriculture and forestry give practical instruction along these lines.

Slöjd has been taught since the early seventies. In 1878 it was taught in 403 schools. In 1895 it was taught in 2,483 school divisions at a cost of $49,643. While slöjd instruction is not a requirement of the State, there are subsidies for it, and there is the requisite State inspection.

Since 1896 regular arrangements for teaching cooking have been

established in some of the newest school buildings. Since 1890 bath houses, arranged for exercises in swimming, have been connected with many of the schools.

Special attention is paid to ventilation; in the Stockholm schools there is change of air in the rooms four times an hour.

Education in Japan.—Through the courtesy of the honorable Secretary of State I am enabled to give in Chapter VI (pp. 259–302) a statement of the development and present status of state education in Japan, prepared by Mr. Robert E. Lewis, of Shanghai. Mr. Lewis is well qualified to treat of this topic, through personal examination of Japanese educational institutions, interviews with prominent educators, and a study of the literature of the subject.

It is a source of satisfaction to note the formative influences that have been exercised by the United States in the upbuilding of the Japanese school system, whether through the medium of native Japanese educated in this country or that of Americans domiciled in Japan. In 1887 there were 699 Japanese students in America.

Classification and promotion of pupils.—In the grading of schools as ordinarily carried out, pupils of widely different capacities and rates of mental development will inevitably be found associated together in the same grade. To adapt the instruction and the rate of progress to the needs of each individual pupil in such a case is manifestly impossible. If the lesson is adjusted to the capacity of the average pupil, there are certain pupils for whom it will be found too short or easy, and certain others for whom it will be found too long or difficult. The bright pupils are held back and the dull ones dragged forward at too rapid a pace, so that the former are insufficiently occupied and waste a considerable portion of their time, while the latter are not able to keep up with the rest of the class and are not adequately prepared when the time comes for the annual examination and promotion. In order to avoid this peculiar evil that characterizes the system of grading and promotion with the one-year interval, it must be so modified as to permit each pupil to advance as fast or as slow as his abilities admit of, without reference to the rate of progress of any other pupil. A plan to effect this result was devised and put into operation in St. Louis and Chicago in the early seventies, a plan of which the distinguishing features were short class intervals and frequent promotions. This plan, or some modification of it retaining the essential features by which it is characterized, has since been adopted or rediscovered in a number of places, where it has stood with excellent results the test of trial continued through a series of years.

Chapter VII (pp. 303–356) contains a compendium of information upon the introduction of this plan in a number of places, beginning

with extracts from the St. Louis school reports from 1869 to 1875,[1] showing the difficulties encountered in the ordinary methods of grading and promotion, and giving an exposition of the short-interval system as introduced into the St. Louis schools. Then follow an account of the Elizabeth (New Jersey) plan of grading, by Supt. William J. Shearer; the Seattle plan of promotion and classification, by Supt. Frank J. Barnard; plan of the north-side schools of Denver, by Supt. J. H. Van Sickle; promotion in the grammar schools of Cambridge, Mass., by Supt. Francis Cogswell; and a report on the grading and promotion of pupils, by John T. Prince, agent of the Massachusetts State board of education.

Common schools in the Western States.—In Chapter VIII (pp. 357–450) Dr. A. D. Mayo has investigated the development of the common school in the Western States from 1830 to the close of the civil war. Circumstances of time of settlement, geographical location, and character of immigrant population have given rise to varied experiences in different States in the effort to found a system of free schools. The whole is instructive to pass in retrospect, and forms a valuable contribution to American educational history.

The Royal Normal College for the Blind in London.—It is coming to be generally recognized that the education of physically or mentally defective children should be made a charge upon the public no less than that of normally constituted children. Whatever currency this view has gained in Great Britain, in the case of blind children, is due in a great measure to the Normal College for the Blind in London, and to its founder and president, Dr. F. J. Campbell, a native of Tennessee, U. S. A. A sketch of this institution, with characteristic incidents in the life of its founder, has been prepared by Hon. John Eaton, formerly United States Commissioner of Education, and forms the subject of Chapter IX (pp. 451–470). Dr. Campbell has practically demonstrated that under proper training the blind can be made a capable and self-supporting class, who may cherish most of the aspirations common to seeing persons. His abilities, and the good results which have been obtained through his methods, have won for him the countenance and cooperation of influential leaders of public opinion in England, so that now the college is apparently established upon a sound basis.

Mental abnormalities in children.—Chapter X (pp. 471–478) is entitled "Minor mental abnormalities in children as occasioned by certain erroneous school methods." The writer divides his paper into four parts, basing each part upon a distinct premise.

His first premise is that acquired characteristics are not transmitted

[1] Also reprinted in the Report of this Office for 1891–92, pp. 601–636. The renewed attention that has been given to this subject has rendered the reprinting of it again advisable.

from the parent to the child. The principal conclusion therefrom is that when a child enters school it should be taken for granted that he knows practically next to nothing of real educational value.

The second premise is that mental development occurs by stages. This leads him to the conclusion that the course of study must be in harmony with the processes of development; more depends on the order of studies than upon their contents; by merely changing the order of studies work that formerly required seven years has been done in three and one-half years.

The third premise is that mental disintegration attacks the higher faculties first, the simplest last. Fatigue is the most common cause of minor mental abnormalities and close watch should be kept for evidences of fatigue.

The fourth premise is the principle of localization of brain function. A brain cell grows only through exercise; without growth it is dead. Brain disorderliness is due more to one-sidedness of methods of education than any other cause. Nature study after the kind described in Whittier's Barefoot Boy is of more value as a corrective and educative force than books alone. Home study, especially for young children, is attended with dangers. Physical training is beneficial in cases of brain disorderliness.

Miscellaneous educational topics.—In Chapter XI (pp. 479–685) are collected a number of discussions of educational topics, essays, addresses, etc., among which are the following:

Military drill.—An inquiry (pp. 479–488) by Chancellor MacCracken, of New York University, into the physical and moral benefits of military drill. Dr. MacCracken questioned upon this subject a large number of principals of high schools, academies, and grammar schools, whose replies furnish a useful body of information and opinions.

Uniform school reports.—At its Chattanooga meeting in 1898, the department of superintendence of the National Educational Association appointed a committee to report upon a uniform style of financial school reports. The report made by this committee the ensuing year, containing among other things the form of financial report recommended by them, is given on pages 489–494.

Professional schools.—On pages 494–502 is reprinted from a pamphlet by Mr. Robert H. Thurston, director of Sibley College, Cornell University, a discussion on the proper organization and conduct of professional schools and on the entrance requirements which should be prescribed for them. The views of the writer tend in the direction of more completely differentiating technical and professional from academic instruction, beginning at an early point in the pupil's career, and of devising special adaptations of common-school instruction for children who must early be put to work.

Thaddeus Stevens's defense of public schools.—I reprint in this

Report (pp. 516–524) Thaddeus Stevens's speech in defense of the public school system of Pennsylvania, which forms one of the most noteworthy contributions to educational discussion. This speech has peculiar claims to preservation on account of its historical value as well as its sterling merits and the decisive influence it exerted, in that it saved the public schools of Pennsylvania from the overthrow which was on the point of being consummated.

Consolidation of schools.—The progress made in the centralization of rural schools and the conveyance of pupils at the public expense has been from time to time noted in the publications of this Office. On pages 526–529 is given a statement by Mr. Edward Erf of the plan of consolidation adopted in Kingsville, Ohio, under which the expenses of the schools are said to have been reduced nearly one-half, the attendance largely increased, and the quality of the work done greatly improved.

College admission requirements.—The new requirements for admission to the University of Illinois form the subject of a paper by Dr. S. A. Forbes, dean of the college of science of that institution (pp. 529–537). This university has made a new and noteworthy departure in introducing an elective system of entrance conditions carefully worked out in all its details. The institution has practically said: "Send us capable pupils, well trained, with minds well stored with something, and we will not inquire too closely what that something is."

State universities.—The position and functions of State universities in our educational system has been made by President James B. Angell, of the University of Michigan, the subject of an address which is reprinted on pages 647–655. The principal embarrassments which State universities have to encounter are considered in detail, as well as some of the advantages which have accrued to them and to the public from their peculiar organization, particularly in the greater variety of instruction they have been enabled to furnish as compared with most private colleges. These institutions have accomplished much, and hold out the promise of still larger usefulness in the future. Dr. Angell is of the opinion that the one great university in each of the Western States will be the State university.

Material progress in Mexico.—On pages 659 and 660 are given some extracts from a message of President Diaz, of the date of September 16, 1899, showing the progress made in Mexico in recent years in mining, agriculture, railroads, manufactures, the settlement of the public lands, etc. Especially noteworthy is the statement concerning the increased utilization of water powers for the development of electric energy, which is transmitted to convenient sites for use where power is required.

The study of art and literature in schools.—In Chapter XII I bring together some essays on the subject of literature and art and their func-

tion in the education of the race. Some suggestions are made as to their introduction into the curriculum of the school.

The Western Literary Institute.—Chapter XIII (pp. 707–745) traces the history of the Western Literary Institute from 1831, at which time it originated, with the title of College of Professional Teachers, under the auspices of the Academic Institute, which met for the first time that year at Cincinnati. The object of the discussions was to improve the quality of the teaching given in the public schools by introducing a higher standard and requiring a more complete preparation among the teachers. The meetings were useful in bringing the teachers together for discussion of methods and for mutual acquaintance.

Local societies, or teachers' institutes, were soon formed, which sent delegates to the college. The addresses on educational subjects at the meetings at Cincinnati were published, the college became an active factor in improving the schools of the Western States and the Mississippi Valley, and soon had branches or corresponding societies in neighboring States—Kentucky, Indiana, and Illinois.

The chapter gives extracts from some of the addresses and discussions, which show the state of education and pedagogy in the middle West nearly seventy years ago, and the steps of its progress. The college came to an end in 1845, after accomplishing an important work.

The United States Naval Academy.—The successful conduct of the naval operations during the late war with Spain furnished abundant evidence of the efficiency of the training given to naval officers at the United States Naval Academy. With a view to determine what that training is, and whether it affords any lessons that may be useful to common-school officials and teachers, Prof. Edward S. Holden made an examination of the organization, administration, and methods of instruction of the Naval Academy, the results of which are embodied in Chapter XIV (pp. 747–780).

Text-books on arithmetic.—The annotated chronological list of American text-books on arithmetic, by James M. Greenwood and Artemas Martin, which was begun in my Report for 1897–98, is brought to a conclusion in Chapter XV of the present Report (pp. 781–837). This bibliography is a unique one, tracing in its fashion the evolution of the arithmetic book from its crude beginnings, and contains many allusions of value to the future student of the history of education.

Education in Italy.—Chapter XVI (pp. 839–870) opens with a brief history of elementary education in Italy from the time of the political unification of the country in 1861 to the present. At that period the illiteracy was very high, over 60 per cent, reaching 93 per cent in some southern districts. Under Count Cavour's leadership the Italian Parliament made instruction compulsory. The law of 1877 enforced this compulsory instruction by requiring the appointment of teachers for a given number of persons in each commune. As a result of these

laws there were, in 1895–96, 2,589,423 pupils in primary schools, and, adding the pupils in kindergartens and in private and normal schools, the total was 3,089,380. The total expenditure of the communes for primary education was $12,150,000, and the illiteracy had fallen to 55.24 per cent.

The report of Prof. F. Torraca, director of primary instruction, for 1896, shows the hygienic condition of the primary school buildings in many communes. The municipal authorities in some instances were opposed to making any improvements. The report criticises the furniture, apparatus, and material. On the other hand, the moral and intellectual education of the teachers was satisfactory, only 7,280 out of the 50,048 teachers having an education and training below the requirements.

It appears from the extracts taken from the report of Professor Costelli, of the Italian department of public instruction, for 1898, that the efforts of Minister Bacelli since 1881 toward reform in education have resulted in awakening emulation in all classes and have created a general change in public opinion.

This chapter mentions the establishment of agricultural and manual training schools, which shows that technical education is prospering in Italy. There are also engineering schools connected with the universities, the "schools" being faculties on a par with those of law and medicine. The secondary classical schools are, moreover, becoming "modernized" by changes in the programme.

The statistics show that in 1896 there were 77,267 students registered in the secondary classical schools and 47,504 in the technical schools and technical institutes, besides 44,778 pupils in the various industrial and commercial schools. These figures are significant.

The chapter closes with a discussion of the question, which is agitating the university world in Europe, of limiting classical education, from which discussion and the bill following it appears that in Italy the limitation will be attempted by checking admission to the universities while making the latter independent. The bill, which was very progressive and introduced many reforms in the direction of enlarged scientific study, freedom of teaching, and independence of the church, aroused great opposition and failed to pass in 1898.

Training for railway service.—Chapter XVII (pp. 871–955), prepared by Mr. J. Shirley Eaton, the statistician of the Lehigh Valley Railroad, contains a report on educational training for railroad service. The compiler, after stating the general relation of higher education to railroad operations, shows to what extent (1) higher mechanical instruction, (2) instruction in civil engineering, (3) higher commercial education, and (4) university and college education have been specialized for railroad service. He then advocates a more complete specialization through the establishment of schools of different grades whose

main object will be to provide railroads with men prepared for their service. He shows what the existing institutions of learning are doing for railroad men and for those who intend to become such. Minute information on this point is offered and numerous authoritative utterances are quoted. In discussing the different functions and qualifications of railroad employees, he arrives at the conclusion that "railroading" is a profession for which special preparation is necessary.

But while it would seem impossible for Government authority, be it Federal or State, to provide for the special education of railroad men, the writer thinks it most judicious and wise for railroads themselves to provide the means for such an education, as it is in their own interest, but might not be in the general interest of the Government. The answers by railroad officials to a series of inquiries are instructive, since they reflect the views of these men with reference to a specialized railroad education.

University extension in Great Britain.—In Chapter XVIII (pp. 957–1055) Prof. Herbert B. Adams, of Johns Hopkins University, contributes a review of the many efforts that have been made in England to bring higher education within reach of the masses. His compilation on "University extension in Great Britain" commends itself by its great number of instructive details. He calls attention to the fact that the educational facilities offered to the poor in England have been, as an inevitable law of affairs, taken possession of by the higher classes. Various waves of extension are passed in review. Then follows a statement of the defects of English universities, which are set forth in quotations from English scholars. The third section deals with academic pioneers in the form of brief but comprehensive biographies. This is followed by a description of some famous institutions, such as the Workingmen's College. Charles Kingsley and Christian socialism, the London colleges, and the liberal movement of 1848 are duly considered. Section 6 deals with university reforms since 1850, and properly emphasizes the efforts made in behalf of the poor. The university extension instituted by Cambridge University gives opportunities to show what the English have done in behalf of higher education for women. The London Society for the Extension of University Teaching, the Oxford efforts in the same direction, local college extension, and, finally, the work of extension emanating from the universities in Scotland are considered.

It is surprising, when looking over the sum total of this work of university extension, to see what energy and means are expended in raising the masses to a higher intellectual and moral level. Great Britain has set Europe an example which the Germans, first of all continental nations, imitated. Berlin, Leipsic, Munich, and Vienna, as well as a number of smaller universities, have begun the work of

extension, but as yet their efforts are feeble compared with the work in Great Britain and the United States.

Bird's-eye view of the St. Louis school system.—In Chapter XIX, I reprint from a report of the board of public schools in St. Louis a summary statement of the organization and management of the city school system (prepared by myself in 1876 and revised from year to year). It may be instructive to those who seek sources of information regarding city school systems.

School gardens.—Chapter XX contains an English translation of an article on school gardens by Mr. E. Gang, the director of a school garden in Triptis, Thuringia, Germany. After a brief historic review, of much interest and detailed information as to number and size of such gardens in different countries, the author discusses their arrangement; he specifies the sections that should be formed in every school garden, their management, and the work to be done in them; he suggests how the teacher may instruct in the gardens, what plants are to be cultivated, and how to best employ the children's desire for self-activity. The article closes with an argument concerning the educational and economic significance of school gardens. This chapter will be especially serviceable to those who are actually engaged in establishing school gardens, inasmuch as they will find in it not only the general principles involved, but also minute information as to how to lay out a school garden, what to plant in it, and how to utilize the garden for purposes of instruction.

Education in France.—Chapter XXI (pp. 1085–1138) gives a concise but clear summary of the French organization of education.

The term "university" is used in France in a peculiar way, and would be apt to create confusion in the mind of an American reader, who is accustomed to it only as applied to particular institutions, as is the case generally in the United States and Germany. The French speak of the whole State educational system as the University of France, which is subdivided into seventeen academies, each including what the Germans or English would call a "university," with associated lycées and colleges and the primary schools within its limits.

Formerly in each academy there were "faculties" of law, philosophy, etc., which were groups of university professors, and these "faculties" were transformed into organic universities by the law of 1896. These universities have a large measure of independence, manage their own affairs, and grant degrees independently of the state.

The tendency, which is now almost universal, toward technical and scientific studies is noticeable in the new universities. Large laboratories are being constructed, and some of the smaller universities may even become technical institutions of high grade.

There were 28,782 students at the French universities in 1897–98, and the expenditure on their account was $2,772,001. The greater number of students were in the law faculties, viz, 9,371; in the "sciences" proper there were 3,544, the rest attending the faculties of letters (3,643), medicine (7,462), and pharmacy (3,326).

Provision has been made whereby foreign students can take degrees at the universities without passing certain lower grades required of French students.

The total expenditure for primary instruction at the date of the last statistics published (1895) was $37,890,173, which was at the rate of 98 cents to each individual of the population. The total enrollment was 5,533,511.

An antialcoholic movement was inaugurated in the primary schools in 1897, of which the chapter gives a full account. Particularly noticeable is the temperance in statement enjoined upon the teachers. They are warned not to excite the imagination of the children by exaggerated pictures of the evils of intemperance.

The continuation of education after leaving school by means of schools for adults—lectures on art, history, and scientific subjects—has been taken up in France with characteristic taste, and a brief notice of the movement is given in this chapter.

The influence of the Republic in making primary public education compulsory and secular is shown in secondary education in the greater freedom and initiative allowed the professors. There has been a pronounced tendency toward "modernizing" instruction like that shown everywhere else in Europe. The discussion of this question and others connected with it was promoted by a series of questions put by the commission appointed for the purpose, which questions, with the depositions received by the commission, are given in the text. Depositions on the defects of the secondary system were made by some of the most distinguished French savants and writers, such as Messrs. Berthelot, Lavisse, and Bréal. That of Brother Justinus, secretary-general of the Christian Brothers, is in effect an account of the history and working of the schools of the order, which will be interesting in this country on account of the recent order forbidding these schools to teach Latin in the United States.

The total enrollment in the secondary schools (lycées and colleges) and church and private schools of the same grade was 182,221 in 1897.

This office is much indebted to Prof. E. Levasseur for his continued courtesy in sending valuable statistical information as to the school system of France. His own labors are among the most valuable in the world that go to elucidating educational problems by statistics.

"*Bibliography of Confederate text-books.*"—Dr. Stephen B. Weeks presents in his "Bibliography of Confederate text-books" (Chapter XXII) an interesting phase of the civil war. Prior to secession manu-

facturing received but little attention in the South. The making of books, particularly, was a thing almost unknown; the cultivated men of that section were for various reasons not much given to authorship, and when one of them did produce a work for publication it usually saw the light through the medium of a Northern publisher. But the closing of the Southern ports and the extension of the lines of the Union armies along the whole of the northern border of the Confederacy almost completely shut out the ordinary sources of supply of manufactured articles of all sorts. Even if there had been no prejudice in the minds of the Southern people against Northern books and wares, it was well-nigh impossible to get them into the country. Home industry had to supply the deficiencies. Richmond, Atlanta, Columbus, Montgomery, and other Southern cities speedily lost their characteristics as markets for agricultural products and became busy manufacturing centers instead. The writing and printing of books was stimulated along with other lines of industry, though naturally to a less extent than the rest. The result, so far as text-books were concerned, is shown in Dr. Weeks's bibliography. In view of the lack of experience and of facilities for such work, the demoralized condition of the country, and the necessary neglect of all things not directly pertaining to the prosecution of the war, the list is surprisingly long.

Educational journals and educational directory.—In Chapters XXIII and XXIV I have printed the educational directory containing the addresses of school officers together with the titles and addresses of the educational journals printed within the United States.

Economic geography.—Applied (or economic) geography forms the subject of Chapter XXV. It contains in addition to quotations which attempt to represent authoritative American opinion a reprint of an essay by Dr. A. J. Herbertson, lecturer in Edinburgh, Scotland, on industrial and commercial geography, in which the author points out the great importance of applied geography and gives a review of the status of this branch of study in the various countries of the Old and the New World.

A review of Swedish gymnastics.—The "warfare of the systems" which marked the discussions of physical training a few years ago appears to have practically died out. It is recognized that the essential aims of all the recognized systems are identical, and that the differences are in details, which are for the most part of little importance. Heated disputes by the partisans of this system and that have given place, therefore, to more profitable discussions on a higher plane.

"Physical training" has come to mean more than mere gymnastics; it now includes much that lies within the domain of the science of medicine. The size and fit of school desks, cleanliness of floors, the color of walls, and sanitation of buildings generally, as well as neat-

ness of person, defects in eyesight and hearing, contagious diseases, and bodily deformities have all received and continue to receive effective attention from officials whose titles imply the direction of bodily exercises alone. Much of this has been obviously due to the plain necessity and general demand for medical inspection of schools. In some instances it has, in fact, amounted to that. Gymnastics has not been neglected, however, in this expansion of ideas, and arguments in favor of the several systems have not ceased, for the time has not yet come for an obliteration of their peculiar characteristics. But these arguments are without acrimony, are constantly becoming more liberal in tone and broader in scope, and even now what is justly said for one system is in its essential particulars true of all. This is certainly the case with the paper of Mr. Theodore Hough on Swedish gymnastics (Chapter XXVI). Though not purporting to be such, it is an excellent exposition of the purpose of school gymnastics in general, and only when the writer touches upon characteristic features of the Swedish system are his statements of limited application. I copy it from the Yearbook of the Normal Training School for Teachers of Physical Training, established and endowed by the late Mrs. Mary Hemenway, whose life was devoted to unceasing efforts to elevate the tone of popular education and to ennoble it by patriotism, historic studies, wiser attention to health, and to an education in economic arts.

Duty of the colored educated class.—In Chapter XXVII is reprinted an address by Dr. A. D. Mayo on "The opportunity and obligation of the educated class of the colored race in the Southern States."

Education and crime.—In Chapter XXVIII I have brought together a variety of treatises relating to education and its effects on crime, most of them noteworthy, either as attacks on or defenses of the schools as preventives of crime.

Education in Canada.—The noticeable historical and statistical features in the chapter on education in Canada (Chapter XXIX) are as follows: The right to legislate on education was granted to the separate governments of the Dominion by the British North American act of 1867. The mode of dealing with the question of religious instruction was thus left to each colony to decide for itself. The control of the schools is now divided between the central and the local authorities, but not equally, since in some provinces (in Ontario, for instance) the central predominates, while in others the local authority has independent action. The elementary schools are secular in all provinces except Ontario and Quebec. In Ontario there is provision for separate schools for Protestants and for Roman Catholics when desired, but little advantage has been taken of the provision, the vast majority, over 91 per cent, of the children attending nonsectarian public schools. In Quebec, on the other hand, the schools are sectarian, and provision is made for the separate control of the Roman

Catholic and Protestant schools, the Catholics in 1896–97 enrolling more than 86.6 per cent of all elementary school children. In the Northwest Territories, also, provision is made for separate schools. The division of the townships into school districts with school trustees elected by the proper taxpayers, and the requirement that the teachers should have government diplomas, facilitate the administration of the elementary schools.

The legislative grant for elementary schools in Ontario for 1897 was $366,538, and the income from local sources $4,621,617; in Quebec in 1898 the corresponding amounts were $170,000 and $1,425,986; in New Brunswick, $163,022 and $320,807; Nova Scotia, $182,500, besides a special fund of $7,670 for poor schools. In the remaining provinces the schools are also supported by provincial grants and local taxes. The total expenditure for the Dominion was $8,625,149. The expenditure per capita of the enrollment ranged from $20.21 in Manitoba to $7.46 in Prince Edward Island.

Higher education, which is represented by universities, colleges, and academies, is in a flourishing condition. Besides the old-established universities, dating from 1790, 1800, and 1821, which are famous for the scientific reputation of some of their teachers and the attainments and talents of their graduates, there are seven universities dating from the middle of this century.

There are, besides, 15 colleges, 16 so-called classical colleges in Quebec, which are a combination of school and college, 7 ladies' colleges, 1 academy, and 4 agricultural colleges. The foregoing are public institutions and are exclusive of 24 denominational private schools not empowered to grant degrees.

Education is receiving increased attention in the Dominion, as is shown by the discussions of such subjects as "Uniformity in teaching," "Extension of technical education," "Lack of male teachers," and others of a practical nature which are incorporated in the chapter. It concludes with a history of education in upper Canada.

William Preston Johnston.—The eminent services rendered by the late president, William Preston Johnston, of Tulane University, to Southern education make it peculiarly appropriate to place on record a general survey of his work and of the results he achieved, such as is given in Chapter XXX, from the pen of Dr. A. D. Mayo.

President Johnston's tact, sound judgment, and clear appreciation of the agencies to be made use of, emphasized by his commanding personality, enabled him to effect reforms, both in higher education and in the public-school system, which in the ordinary course of events would have been the result only of a slow process of development.

Alaska report.—In Chapters XXXI and XXXII Rev. Sheldon Jackson gives a history of the operations of this office in Alaska for the year and a detailed account of the experiment of introducing rein-

deer and teaching the natives the arts of herding and teaming. The recent gold discoveries in northwest Alaska have increased the need for teamsters and created a demand for food which a thousand herds could not more than supply.

Consular reports.—The chapter of Consular Reports (Chapter XXXIII) is more varied in contents, though the separate contributions are briefer than in former years.

Foreign universities.—In Chapter XXXIV the customary list of foreign universities and other institutions for higher education is inserted. It shows important accessions to the number of such institutions and a greatly increased attendance.

City school systems.—In regard to city school systems (Chapter XXXVI), the year just passed has been marked by a reaction against some of the tendencies and methods that have been conspicuous for several years past. What has been termed the "new education" has been subjected to more criticism and attacks than in any previous year. From the first the "new methods" have been consistently and earnestly opposed by a large proportion of the members of the teaching profession, but for the most part the public at large have remained in an attitude of indifference. During the last year, however, it is a noteworthy fact that the protests and the criticisms have come not from school men principally, but from the press and from the patrons of the schools.

There has been, too, a great deal of opposition—more marked this year than usual—to the further extension of a certain kind of supervision, namely, that of "special teachers." One city, Milwaukee, has entirely discontinued such supervision, others have materially reduced the number of specialists employed, and in still others recommendations of superintendents to the same effect will undoubtedly result in still further reduction in the near future. Questions of economy have naturally had their part in this movement, but such a consideration would scarcely have had much weight in this time of improved financial conditions and prospects were it not for the belief that, with the better preparation of teachers now demanded, special supervisors are of distinctly less value than formerly.

The lack of the usual yearly increase in school enrollment and attendance in cities is a noteworthy phenomenon developed by the statistics of 1898–99. Some of the cities show an actual decrease, and in nearly all the rest the increase is considerably below the usual rate. Private schools have grown at a relatively greater rate than public schools, but not enough to bring the total increase up to its accustomed proportions.

The reason for this relative falling off is not easily found. A few of the superintendents have suggested causes that seemed to them adequate in their respective cities, but none are sufficient to cover the whole ground. They refer generally to contagious diseases, vaccina-

tion, and the like—incidents of child life which may be considered as uniform in the country at large from year to year.

If only the total enrollment were considered, it would be reasonable to suppose that the return of prosperous times has increased the opportunities for employment and caused the withdrawal of many school children on that account. That was undoubtedly to be expected, and has probably happened in many cases. But if that were the cause of the general absence of the accustomed increase in school attendance, then the high schools would show the effect most, since the oldest children are the first to be withdrawn under such circumstances. But in nearly every case the high schools have grown at a greater ratio than the elementary schools. That fact would seem to set aside the explanation under consideration.

The only remaining supposition that would be justified by the evidence and broad enough to cover the case is that there has been a temporary check in the growth of the cities themselves. In view of the history of the movement of population for the last hundred years that would seem a violent presumption, but there is reason to believe that it is well founded. The school censuses available show but little increase as a rule, and in several cases the evidence of the city directories tends to the same conclusion.

Higher education.—The usual statistics concerning higher education are given in Chapter XXXVII. These show that 103,251 students were enrolled in the undergraduate and graduate departments of universities and colleges, an increase of 2,193 over the number of the preceding year. The degree of doctor of philosophy was conferred during the year on 336 persons, 11 of whom received it as an honorary degree. In view of the great interest now being manifested in graduate work, the requirements for the Ph. D. degree in 72 institutions have been compiled and given in this chapter.

The benefactions to institutions for higher education were unusually large—$21,925,436. Of this amount $11,000,000 were received by the Leland Stanford Junior University and $1,544,330 by Harvard University.

The income for the year amounted to $27,739,154, of which $10,924,415 were derived from tuition and other fees from students, and the remainder from investments, State and municipal appropriations, and miscellaneous sources.

The University of Chicago has established a new degree, that of associate, to be granted to students who have completed the work of the junior colleges, embracing the work usually included in the freshman and sophomore years. The reasons for the establishment of the degree, as stated by President Harper, are given in full in this chapter.

In the last twenty-five years the number of inhabitants in the United States in each million who have taken up higher education has risen

from 590 to 1,215. The number of women has increased from 112 to 323 in a million in the past twelve years. In the same time the standard of higher education has been raised by the addition of nearly a year's work required for admission to the university. The American college or university course takes up about a year or a year and a quarter of the work that is required in the French college or lycée or the German gymnasium. In reducing the numbers registered in American colleges and universities to the European standard it is necessary to deduct about 30 per cent from the number reported as enrolled in higher education. It would seem, therefore, that after deducting the women students the increase of students is very large—over 50 per cent.

Women college students to each 1,000,000 persons.

1887–88	112	1893–94	256
1888–89	129	1894–95	263
1889–90	163	1895–96	295
1890–91	185	1896–97	291
1891–92	202	1897–98	308
1892–93	223	1898–99	323

Professional education (Chapter XXXVIII).—In the 163 schools of theology there are enrolled 8,261 students; in the 96 law schools, 11,874 students; in the 151 schools of medicine, 23,778 students. There are 50 schools of dentistry with 7,354 students, and 51 schools of pharmacy with 3,551 students.

In the ten years from 1889 to 1899 theological students increased only 18 per cent, while law students increased 204 per cent.

The pupils in nurse training now number 10,018 in 393 schools, nearly all of which have courses of two years.

Land-grant colleges.—In Chapter XXXIX are given the usual statistics furnished by the presidents of the several colleges, universities, and other institutions endowed by the acts of Congress of July 2, 1862, and August 30, 1890, accompanied by extracts from the presidents' reports showing any changes or improvements during the year. In view of the increased attention devoted to practical work in dairying, an outline of the course of study in that branch in a number of colleges, as well as a description of the equipment for such instruction, is given in this chapter.

Normal schools.—The number of persons in the United States engaged in teaching, from kindergarten to university, exceeds 485,000. Preparing to enter the ranks of this vast army there were in institutions of various grades 93,687 students pursuing training courses for teachers during the scholastic year ending June, 1899. Of this number, 44,808 were in the 166 public normal schools reporting to this Office, as shown in Chapter XL. The number of normal students in 165

private normal schools was 23,572. There were students in teachers' courses to the number of 9,491 in 235 colleges and universities. In 544 public high schools there were 8,930, and in 378 private high schools and academies 6,886 students pursuing such courses. Divided according to control, 56,279 normal students were in 739 public institutions and 37,408 in 749 private schools.

The number of students graduating from the teachers' training courses of the public and private normal schools in 1899 was 11,175. The normal graduates of other institutions were not reported to this Office, but it may be estimated that the number of students graduating from normal courses in all the institutions named, including the normal schools, was not less than 15,300. But this number does not represent the entire number required to fill the vacancies in the teaching force of the country each year. Thousands leave the normal schools after one year's study and begin the work of teaching, while thousands more join the ranks from other institutions.

The most significant fact pointed out in the chapter on the statistics of normal schools is the steady increase of State appropriations from year to year for the support of public normal schools. In 1889–90 these schools received for running expenses $1,312,419; for 1894–95 the aggregate appropriation for the same purpose was $1,917,375, and in 1898–99 the aggregate was $2,510,934.

Secondary schools.—The secondary school, or high school, is understood to begin where the elementary school ends. Having successfully completed the course of study in the common branches prescribed for the eight years, or grades, of the elementary schools, the pupil is ready to begin the four years' course of secondary studies prescribed for the high school. Among the secondary studies may be mentioned algebra, geometry, trigonometry, physics, chemistry, general history, Latin, Greek, and modern languages. It is true that in some city elementary schools a beginning is made in the eighth grade in algebra and Latin, but these are typical high-school studies.

During the year ending June, 1899, there were enrolled in the various classes of institutions reporting to this Office 655,227 secondary students, a gain of 29,112 over the preceding year. As shown in Chapter XLI, these students were distributed as follows: 476,227 in public high schools, 103,838 in private high schools and academies, 54,405 in the preparatory departments of colleges and universities, 12,995 in secondary courses in public and private normal schools, and 7,762 in manual training schools. In localities in most of the States where high schools are not accessible there are many students pursuing secondary studies under the direction of teachers of the elementary schools. These students and others not reported may exceed in number 20,000, so that it is safe to estimate the number of secondary students in the United States at 675,000 for the year 1898–99.

For the year mentioned there were 5,495 public high schools and 1,957 private high schools and academies reporting to this Office. The statistics of these 7,452 secondary schools are given in detail in Chapter XLI and analyzed in the summaries of that chapter. There was an increase of 180 in the number of public high schools and an increase of 26,627 in the number of secondary students attending the public high schools, or nearly 6 per cent, over the preceding year. This rate of increase was less than the year before, when it was nearly 10 per cent. The number of private high schools and academies reporting was less by 33 than in 1897–98, and there was a falling off of 1,387 in the number of students.

The 7,452 public and private secondary schools had 28,128 teachers and 580,065 secondary students, 249,027 males and 331,038 females. This was an increase of 7,668, or about 3 per cent, in the number of males and of 17,572, or more than 5½ per cent, in the number of female students. The increase in the ratio of female students in the secondary schools has been continuous, with few exceptions, since 1889–90. That year the percentage of female students was 54.97. In 1894–95 it had reached 57, but the next year decreased to 56.60 and the next to 56.16. In 1897–98 the percentage of female students was 56.50, and in 1898–99 it was 57.07, the highest yet recorded by this Bureau.

The graduates of 1899 number 68,330, or nearly 12 per cent of the total number of secondary students enrolled in the public and private high schools. The percentage of graduates has increased from 10 per cent in 1890 to 11.78 in 1899.

One of the most significant facts disclosed by the percentages in the last ten years is the steady increase of the per cent of students in Latin. In 1889–90 the per cent in this study was given as 33.62, in 1894–95 it was 43.76, and in 1898–99 it had reached 50.29. There has been, also, a steady increase in the percentage of students in algebra. In 1889–90 it was 42.77 per cent, and in 1898–99 the per cent was 56.21. The per cent of students in geometry increased from 20.07 in 1889–90 to 27.36 in 1898–99.

Portable schoolrooms.—The provision of temporary schoolrooms has always been a troublesome question in city school administration. In spite of the most careful management and the most intelligent foresight it constantly happens that the number of children in a certain locality is too great for existing permanent accommodations. The completion of a new building is delayed, perhaps, or the circumstances do not yet justify the erection of one; there is a rapid shifting of population to an unexpected quarter, or a private school suddenly closes. Such things are common. They are to be taken as matters of course, for they occur in every city. How to meet the demands for school room thus presented is a source of difficulty nevertheless. It

has ordinarily been the custom under such circumstances to rent the best private quarters available—usually society halls, basements of churches, or even private dwellings. Such makeshifts are unsatisfactory to say the least. Defective heating and ventilation, poor light, absence of proper playgrounds and sanitary arrangements, and difficulties in janitor service make rented quarters a source of trouble and annoyance always. The problem of obviating such troubles seems to have been solved in Milwaukee and St. Louis. Portable schoolrooms, comfortable and well lighted, have been designed, which can be set up wherever needed, but preferably in the yards of larger buildings. The officials of those cities write in enthusiastic terms of the success of the idea, and in a chapter near the close of Volume II will be found a description of the St. Louis buildings, by Dr. F. Louis Soldan, the superintendent of instruction, and Mr. William B. Ittner, the commissioner of school buildings of that city.

The Philippines.—Under the disturbed conditions which have existed in the Philippine Islands for the last four years it is not to be expected that much information concerning such a peaceful occupation as education could be obtained. In Manila, however, the Americans reopened the schools soon after their occupation of the place. What educational advantages the Filipinos possessed before the American occupation are described in the following account by Señor Felipe Agoncillo, the representative of Aguinaldo in this country, in a letter to the New York Journal, February 3, 1899. The statement is especially interesting on account of its source. The author says:

The lowest grade of school in the Philippines is the primary. There are of schools of this description two to be found in every large town, one for boys and one for girls. If the population exceeds 5,000 in number, then the number of schools is correspondingly increased. These schools are in the scope of the studies taught much like similar American schools. Reading, writing, arithmetic, grammar, geography, and history, with special reference to Spain and the Philippines, occupy the attention of the teacher and student. Instruction is given in Spanish, although all the children also speak Tagal as their native tongue. The teachers are to a considerable extent priests, though many have graduated from the normal school, to be referred to, and all have received certificates of proficiency before being allowed to instruct, and all are native-born Filipinos. In fact all the work of government, except in the higher offices, was performed by Filipinos.

Next in grade are the academies to be found in all the capital cities of the provinces. These academies fit the scholars to be admitted to the University of St. Thomas.

In regular succession we next consider the University of St. Thomas. This was established in the year 1602, and has ever since been the center of learning in the Philippines. This university is under the control of the Dominican Fathers so far as the instruction is concerned, but, like the primary schools and the academies, is supported by the Government. Here the youth of my country receive instruction in higher branches of science and literature, the regular course of instruction leading to the degree of bachelor of arts. In connection with the university is the school of medicine, of which my associate in this country, Dr. Losada, is a professor of great

distinction. There is also a school of law, informing the youth attending it in all branches of the civil law, while theology receives also attention in all of its highest forms. It will be appreciated that this university exercises an important influence upon the life of the country when I say that it is attended by over 2,000 students, forming as it does the apex of a school system of more than 2,000 schools. All the instructors at this school at the present time are native-born Filipinos, although before the war some of them were Spaniards.

In addition to those named we must not lose sight of the fact that there are seminaries in Manila, Cebu, Jaro, and several other cities of importance, instructing the youth in the more important branches.

Manila possesses a nautical school for the education of naval officers and the officers of merchant vessels, while a military academy supplies special instruction for those designing to lead a military life. Capt. Marto Burgos, who is with me in this country, is a graduate of this school.

We must not lose sight of the very important normal school at Manila, with its course of seven years, and instruction and examination at which confers the right to be employed in the lesser schools. The instructors are native born.

Nor are the Philippine Islands at all behind in instruction in other respects, the importance of which is just beginning to be appreciated, as I understand, even in this country. The Manual Training School at Manila instructs in carpentering, cabinetmaking, lithographing, engraving, working in gold and silver, and other mechanical arts.

A school of painting, sculpture, and engraving served the purpose indicated by these words, and with such good effect that one of its students, Señor Luna, my associate, subsequently to his graduation from it, received prizes from the Salon in Paris.

Several schools organized for this particular purpose supply my countrymen with a business education, in bookkeeping, mercantile correspondence, French, and English.

We are also fortunate in having ten agricultural experimental schools, and through their work are improving the agricultural products of our islands. There are many private schools in the islands at the present time, their instructors being native-born Filipinos.

I have not now the opportunity to refer at length to the school for telegraphers, nor our botanical gardens or museums or libraries, each deserving more than mention. Nor may I speak at length concerning our many excellent and advanced schools for girls now educating our ladies in both polite and useful knowledge.

May we not be excused for refusing to regard ourselves as barbarians or beyond the necessity for consideration?

But for the pressure of time I should take pleasure in amplifying the foregoing and adding further proofs of the high civilization of my country.

The first American superintendent of schools was Father McKinnon, chaplain of the First California Volunteers, who proceeded to hunt up the former school children in Manila and induce them to attend school. He succeeded in restoring confidence, and by his energy many schools were opened. On his departure to another island to join his regiment, Mr. George P. Anderson was appointed in his place in June, 1899. Mr. Anderson was a graduate of Yale, and had had experience to fit him for his duties. A circular of the provost-marshal-general, dated June 28, 1899, providing for the reopening of the schools in Manila, made attendance compulsory, and called upon the police of the various districts to enforce the regula-

tion. One hour a day was to be given to the study of English, which study was made compulsory. In September, 1899, there were 35 public schools in Manila with an attendance of over 5,000 pupils. Several school buildings had been burned, but they were replaced by others furnished throughout for the reception of the pupils. The teachers were nearly all American men and women who had learned Spanish enough to make themselves understood. A report for October, 1899, showed an attendance of 5,706.

In connection with this reopening of Manila schools by the American authorities a paragraph appeared in the American newspapers which is characteristic and significant, and illustrates the views of a certain class of Americans. The correspondent was unpleasantly impressed with the manifestation of civility of the Tagal children in school, who all rose when the superintendent entered their room on making his visit. This act the correspondent appeared to regard as a relic of tyranny, and he looked forward to the speedy banishment of "urbanidad" (politeness) from the school under the Americans, who, he was proud to think, were too free and independent to show such manifestations of "servility."

From a manuscript report of Mr. George P. Anderson to the Acting Adjutant-General, dated March 15, 1900, it appears that there were then 41 public schools in 36 buildings (mostly small) in Manila, the attendance not being given. The nautical school was reopened with an American naval officer at its head in the latter part of 1899. The object of the school is to prepare young men to become mates and masters of vessels. By the new programme, English was to be taught half of each day's session by an American, Spanish being the language used at all other times.

Mr. F. W. Atkinson was appointed superintendent of schools in Manila in May, 1900, and will probably take charge by July. He was selected on account of his known qualifications and reputation, having been remarkably successful as principal of the Springfield, Mass., High School, where he had put in practice the ideas gained by the study of his profession both in this country and in Germany. He has the degree of doctor of philosophy from the University of Leipzig.

Professor Blumentritt, the German ethnologist, whose studies of the Filipinos have been known to students for some years, thus sums up their status as to education in a recent number (Heft 337–338) of Professor Virchow's collection of popular scientific lectures. "The Filipinos," he says, "have a greater proportion of educated people among them than the Kingdom of Servia and the principalities of Bulgaria and Montenegro. There are fewer illiterates among them than in the States of the Balkan peninsula, in Russia, in many provinces of Spain and Portugal, and in the Latin Republics of America. There are provinces where there are few people who can not at least read. The

Filipinos pay more attention to schools than Spain and the Balkan States."

Some further items relating to education in the Philippines I have placed in the second appendix of this introduction.

Cuba.—Under the American régime in Cuba the military governor takes the place of the Spanish captain-general, who represented the King of Spain. Even the details of the system of education are directed by orders from the American military governor as they were formerly by royal decrees. Under American rule, however, changes have been made in the organization, much more attention being given to public schools than formerly, but the military governor, upon the recommendation of the secretary of public instruction, still arranges, by printed order, the courses of study in the university, the secondary schools (the institutes in the different provinces), and the special and art schools, and appoints the professors, leaving the elementary or public schools to the care of the superintendent of schools. An order, February 7, 1900, however, directed that assistant professors of the university and institutes should be appointed by the secretary of public instruction upon the recommendation of the faculties of the respective schools. Heads of laboratories and clinics are appointed in the same way. Assistants to professors in the medical school are now appointed by the faculty of the school upon recommendation of the professors.

The new programme of the school of commerce in the Institute of Havana shows that increased attention is being given to commercial studies, and a school of stenography and typewriting has also been established in that institute. The new programme of the faculty of pharmacy at the university also shows an increased tendency to practical studies. It includes a more extended course in physics and other experimental or laboratory studies.

On December 6, 1899, the military governor published an order reorganizing the elementary and secondary school system of the island. It provided that there should be a board of education in each municipality to take charge of the schools, with the mayor as president, who shall appoint the other members. It provided that there should be one public school for boys and one for girls in every town of 500 inhabitants and more as the population is larger. In smaller towns "incomplete" schools are provided. It made attendance compulsory under penalty of a fine of from $5 to $25, provided for the payment of the teachers, for superintendence and inspection of the schools, free text-books, and other details. The course of study is prescribed by the superintendent of schools.

The superintendent of schools in Cuba, Mr. Alexis E. Frye, has stated that there were not over 200 schools or more than 4,000 attendants in the island in 1899, while there were in February 1900, 2,058

schools (or schoolrooms), with an attendance of over 100,000. This statement was based upon returns from 97 municipalities, with 34 to hear from. He expected that there would be an attendance of 150,000 by June. By April 1 there were 3,079 schools in operation, with an attendance of 130,000 and 3,500 teachers. No later statistics are available. This enormous increase, Mr. Frye explained, was due to his impressing upon the mayors of the municipalities the necessity of elementary schools and assuring them that the United States Government would pay the salaries of the teachers.

On May 16, 1900, a circular was issued by the superintendent of schools notifying the teachers of the island of the invitation extended to them by Harvard University to attend the summer courses of the university free of expense and that the Government would provide free transportation. The circular gives the programmes of study and useful information for those teachers who might accept the invitation. It was expected that some 1,400 Cuban teachers would accept the invitation. This is an unique event in the history of education.

Porto Rico.—The report of Mr. Victor S. Clark, acting superintendent of education in Porto Rico, to General George W. Davis, military governor of the island, states that certain features of the Spanish system of primary education required a change when the Americans took possession. These were the absence of suitable schoolhouses and furniture, the practice of keeping school in the dwellings of the teachers, the divided attention of some of the latter who carried on other occupations besides teaching, and the want of adequate school material. To remedy these deficiencies and introduce changes in the programmes and method of teaching a school law (regulation, or order, would be a better term, since we limit the term "law" to the act of a legislative body), which was recommended by Gen. John Eaton, American director of public instruction of the island, was enacted by order of Gen. Guy V. Henry, the military governor, on May 1, 1899, which reorganized the system of education. An insular board of education consisting of five members was created July 8, 1899, which was to act in an advisory or superintending capacity. This board replaced the former bureau of education, and the president of the insular board is insular superintendent of education. The "law" divided the island into school districts something like those in the United States, provided English supervisorships, prescribed the manner of electing local school boards in the districts, and provided for district school taxes and the issuance of district bonds. The municipalities were required to provide buildings or quarters for the schools, the schools were graded, the courses of study and the qualifications of the teachers were prescribed and their salaries fixed, free text-books were provided for, and high schools, a normal school, and professional schools were organized. The "law," in short, and the orders promulgated under it, regulate nearly every

detail connected with primary education and are very much like the royal decrees under the Spanish rule.

From a table in Mr. Clark's report it appears that at the close of the school year, June, 1899, there were 212 town schools, 313 country districts with schools, and 426 without. In a population of 857,660, there were 152,951 boys and 144,851 girls of school age, of whom only 19,804 boys and 9,368 girls were enrolled in the schools, a total of 29,172, while the attendance was 21,873, leaving 268,630 children without school facilities. The municipal expenditure for primary schools in 1898–99 was $203,372.99, and the total expenditure $279,216. The appropriation for 1899–1900 was $330,050. The institute of secondary instruction at San Juan, which gave the degree of bachelor of arts, was suspended, and secondary instruction is to be continued by a preparatory school designed to fit boys for colleges and universities in the United States, with a course of four or six years, and a model training school for teachers, with instruction given entirely in English, which is equipped with laboratories and apparatus. The board of education has also offered an annual appropriation of $20,000 for any town in the island which would provide a like amount for site and buildings for an industrial and normal school. This offer was complied with by the town of Fajardo, and a secondary school, like the Atlanta University, the Hampton University, and the Carlisle Indian School, with a normal department and a department of scientific horticulture and agriculture, was therefore projected for that municipality. In 1899 over 80 per cent of the population could not read or write.

All of which is respectfully submitted.

W. T. Harris,
Commissioner of Education.

The Secretary of the Interior.

I.—CURRICULA OF DENTAL SCHOOLS.

II.—EDUCATION IN THE PHILIPPINES.

III.—STATISTICS OF STATE COMMON SCHOOL SYSTEMS.

IV.—EXPENDITURE FOR WHITE AND COLORED COMMON SCHOOLS SINCE 1870.

I.—CURRICULA OF DENTAL SCHOOLS.

The sixteenth annual session of the National Association of Dental Faculties was held at Niagara Falls, commencing Friday, July 28, 1899.

The following colleges were represented:

Birmingham Dental College, Birmingham, Ala.
University of California, Dental Department, San Francisco, Cal.
Colorado College of Dental Surgery, Denver, Colo.
University of Denver, Dental Department, Denver, Colo.
Columbian University, Dental Department, Washington, D. C.
Howard University, Dental Department, Washington, D. C.
National University, Dental Department, Washington, D. C.
Atlanta Dental College, Atlanta, Ga.
Dental Department of Atlanta College of Physicians and Surgeons, Atlanta, Ga.
Chicago College of Dental Surgery, Chicago, Ill.
Northwestern University Dental School, Chicago, Ill.
Indiana Dental College, Indianapolis, Ind.
State University of Iowa, Dental Department, Iowa City, Iowa.
Louisville College of Dentistry, Louisville, Ky.
Baltimore College of Dental Surgery, Baltimore, Md.
University of Maryland, Dental Department, Baltimore, Md.
Tufts College Dental School, Boston, Mass.
Harvard University, Dental Department, Boston, Mass.
College of Dental Surgery of the University of Michigan, Ann Arbor, Mich.
Detroit College of Medicine, Dental Department, Detroit, Mich.
University of Minnesota, Dental Department, Minneapolis, Minn.
Kansas City Dental College, Kansas City, Mo.
Western Dental College, Kansas City, Mo.
Marion-Sims College of Medicine, Dental Department, St. Louis, Mo.
Missouri Dental College, St. Louis, Mo.
University of Omaha, Dental Department, Omaha, Nebr.
University of Buffalo, Dental Department, Buffalo, N. Y.
New York College of Dentistry, New York, N. Y.
New York Dental School, New York, N. Y.
Cincinnati College of Dental Surgery, Cincinnati, Ohio.
Ohio College of Dental Surgery, Cincinnati, Ohio.
Western Reserve University, Dental Department, Cleveland, Ohio.
Ohio Medical University, Dental Department, Columbus, Ohio.
Pennsylvania College of Dental Surgery, Philadelphia, Pa.
Philadelphia Dental College, Philadelphia, Pa.
University of Pennsylvania, Dental Department, Philadelphia, Pa.
Pittsburg Dental College, Pittsburg, Pa.
School of Dentistry, Central Tennessee College, Nashville, Tenn.
University of Tennessee, Dental Department, Nashville, Tenn.
Vanderbilt University, Dental Department, Nashville, Tenn.
North Pacific Dental College, Portland, Oreg.
Milwaukee Medical College, Dental Department, Milwaukee, Wis.

Royal College of Dental Surgeons of Ontario, Toronto, Canada.

The applications for membership of the following schools, having been reported as regular by the executive committee, lie over for one year for final action:

Medico-Chirurgical College of Philadelphia, Dental Department, Philadelphia, Pa.
Central College of Dentistry, Indianapolis, Ind.
College of Dentistry, University of Southern California, Los Angeles, Cal.
Illinois School of Dentistry, Chicago, Ill.
Washington Dental College and Hospital of Oral Surgery, Washington, D. C.
Keokuk Medical College, Dental Department, Keokuk, Iowa.

At the Omaha meeting of the National Association of Dental Faculties in 1898 the following committee was appointed to report at the next meeting on a curriculum for dental schools: J. Taft, chairman, Cincinnati, Ohio; James Truman, Philadelphia, Pa.; A. H. Fuller, St. Louis, Mo.; Truman W. Brophy, Chicago, Ill.; C. L. Goddard, San Francisco, Cal.

The report of the committee was submitted at the meeting in 1899 at Niagara Falls and gave the following arrangement of studies for the different years and the number of hours per week in each study.[1]

Schedule of studies.

First year.	Hours per week.	Second year.	Hours per week.	Third year.	Hours per week.
Anatomy and dissection	2	Anatomy, regional	1	Therapeutics	1
Physiology	2	Anatomy, comparative	1	Pathology	1
Chemistry, inorganic	2	Physiology	2	Surgery, general	1
Chemistry, laboratory	4	Chemistry, organic	2	Surgery, oral	1
Dental anatomy	2	Chemistry, laboratory	4	Jurisprudence	½
Prosthetic technic	10	Metallurgy, didactic	1	Orthodontia, didactic	1
Histology, didactic } Histology, laboratory	4	Metallurgy, laboratory	2	Orthodontia, practical	1
		Materia medica	1	Operative dentistry	2
Materia medica		Operative technic	4	Prosthetic dentistry	2
Comparative anatomy		Bacteriology, didactic	4	Electricity	
		Operative dentistry, didactic	2	Ethics	
		Orthodontia, technic	1	History	
		Pathology	2		
		Orthodontia, didactic			
INFIRMARY.					
		Prosthetic dentistry	5	Prosthetic dentistry	6
		Crown and bridge work	3	Operative dentistry	15
				Crown and bridge work	4

RULES OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES, REGULATING THE ADMISSION OF STUDENTS TO DENTAL SCHOOLS.

PRELIMINARY EXAMINATION.

1. The following preliminary examination shall be required of students seeking admission to colleges of this association:

(*a*) The minimum preliminary educational requirement of colleges of this association, for the session of 1899–1900, shall be a certificate of entrance into the second year of a high school, or its equivalent, the preliminary examination to be placed in the hands of any State or county superintendent of public instruction.

(*b*) Nothing in this rule shall be construed to interfere with colleges of this association that are able to maintain a higher standard of preliminary education.

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[1] See Dental Review, September, 1899.

LIMITING THE TIME FOR THE RECEPTION OF STUDENTS.

2. No member of this association shall give credit for a full course to students admitted later than ten days after the opening day of the session, as published in the announcement.

3. In case one is prevented by sickness, properly certified to by a reputable practicing physician, from complying with the foregoing rule, the time of admission shall not be later than twenty days from the opening day.

4. In cases where a regularly matriculated student, on account of illness, financial conditions, or other sufficient cause, abandons his studies for a time, he may reenter his college at the same or a subsequent session, or where, under similar circumstances, he may desire to enter another college, then with the consent of both deans he may be transferred, but in neither case shall he receive credit for a full year, unless he has attended not less than 75 per cent of a six months' course of lectures.

ADMISSION TO ADVANCED GRADES ON CERTIFICATES.

5. The colleges of this association may receive into the advanced grades of juniors and seniors only such students as hold certificates of having passed examinations in the studies of the freshman or junior grades, respectively. All students who have successfully passed their examinations for advanced standing shall have their certificates given or mailed to them within thirty days after such examinations shall have been completed. Such certificates to be pledged to any college of the association to whom the holders may apply, that the requisite number of terms have been spent in the institutions by which the certificates were issued.

6. This certificate shall, by correspondence, be verified by the dean of the college by which it was issued. Without such certificate no students shall be received by any college of this association for admission to the advanced grade except on such conditions as would have been imposed in the original school, and these to be ascertained by conference with the school whence he came.

STANDING OF STUDENTS HOLDING CERTIFICATES FROM DENTAL COLLEGES IN FOREIGN COUNTRIES.

7. In cases of persons holding certificates from colleges of dentistry in foreign countries they shall be required to furnish properly attested evidence of study, attendance upon lectures, examinations passed satisfactorily, etc., the same as required of students coming from our own institutions.

ADMISSION OF GRADUATES OF MEDICINE.

8. A diploma from a reputable medical college may entitle the holder to enter the second or junior grade in colleges of this association, and he may be excused from attendance upon the lectures and examinations upon general anatomy, chemistry, physiology, materia medica, and therapeutics.

ADMISSION OF UNDERGRADUATES OF MEDICINE.

9. Undergraduates of reputable medical colleges who have regularly completed one full scholastic year, having attended at least 75 per cent of a five months' term, and passed a satisfactory examination in the studies of the freshman year, may be admitted to the junior grade in colleges of this association, subject to other rules governing admission to that grade.

ADMISSION OF GRADUATES OF PHARMACY AND VETERINARY MEDICINE.

10. The colleges of this association may matriculate, as juniors, graduates of registered schools of pharmacy and veterinary medicine, subject to the examination requirements of each school of the association.

ATTENDANCE, EXAMINATIONS.

11. Attendance upon three full courses of not less than seven months, or upon four terms of six months each, in separate academic years, shall be required before examination for graduation. The year shall be understood to commence August 1 and end the following July 31.

12. The examinations conducted by the colleges of this association shall be in the English language only.

13. A student who is suspended or expelled for cause from any college of this association shall not be received by any other college during that current session. In case the action of the first college is expulsion, the student shall not be given credit at any time for the course from which he was expelled. Any college suspending any student shall at once notify all other members of this association of its action.

PUBLICATION OF CLASSIFICATION OF MATRICULATES.

14. Colleges of this association shall each year issue announcements containing lists of students classified in the three grades of seniors, juniors, and freshmen, designating absentees, and giving a list of graduates of the preceding session.

15. No college connected with this association shall confer any degree as honorary which is usually granted in due course of study and examination. All former rules on this subject are hereby repealed.

COURSES OF STUDY IN DENTAL SCHOOLS.

[The figures after studies denote number of hours per week.]

Institution.	First year.	Second year.	Third year.
Birmingham Dental College, Birmingham, Ala. 1900–1901. (Subjects of examination for each year at this school are given.)	Anatomy, physiology, chemistry, materia medica, operative technic, operative dentistry, prosthetic technic, prosthetic dentistry, histology, bacteriology, dental hygiene, crown and bridge work, and anæsthesia.	Anatomy, physiology, chemistry, materia medica, therapeutics, operative dentistry, prosthetic dentistry, embryology, histology, pathology, bacteriology, orthodontia, metallurgy, dental surgery, dental hygiene, dental jurisprudence, crown and bridge work, and anæsthesia.	Dental anatomy, chemistry, metallurgy, therapeutics, operative dentistry, prosthetic dentistry, embryology, oral surgery, dental hygiene, dental jurisprudence, crown and bridge work, and anæsthesia.
College of Physicians and Surgeons of San Francisco, Cal., Dental Department, 1898–99.	Anatomy, physiology 2, chemistry, histology, operative and prosthetic technique.	Anatomy, physiology 2, chemistry, histology, operative dentistry, prosthetic dentistry, orthodontia, pathology and therapeutics, materia medica and anæsthetics, bacteriology, microscopy.	Operative dentistry, prosthetic dentistry, orthodontia, metallurgy, pathology, bacteriology and therapeutics, materia medica and anæsthetics, surgery and surgical clinics.
San Francisco College of Medicine and Surgery, Dental Department, San Francisco, Cal., 1899–1900.	Anatomy and surgery, physiology, materia medica, anæsthesia, chemistry, histology, bacteriology, and prosthetic dentistry.	Chemistry, operative and prosthetic dentistry, orthodontia, dental pathology, therapeutics, anatomy and surgery, physiology, materia medica and anæsthesia, histology and bacteriology.	Metallurgy, operative and prosthetic dentistry, orthodontia, dental pathology, and therapeutics.
University of California, College of Dentistry, San Francisco, Cal., 1898–99.	Anatomy 2 with dissections, physiology and histology 2, chemistry 1 with laboratory work, mechanical dentistry 1, operative technic 2, mechanical technic, microscopic technic 2.	Anatomy 2 with dissections, physiology 3 and histology, chemistry 3, mechanical dentistry, operative dentistry, pathology, therapeutics, materia medica, orthodontia 1 and orthodontia technic 1, bacteriology, clinics, and demonstrations.	Operative dentistry 2, mechanical dentistry 1, orthodontia 2 with practical cases, metallurgy 2, pathology, therapeutics, materia medica 1, surgery 2, clinics, and demonstrations.
Colorado College of Dental Surgery, Denver, Colo., 1900.	Anatomy, physiology, chemistry, histology, operative and prosthetic technics, with practice in laboratory.	Dental chemistry, bacteriology, general pathology, dental histology, prosthetic dentistry, metallurgy, materia medica, operative dentistry, anatomy, physiology, and chemistry, practice in prosthetic laboratory, bridge work, etc.	Dental pathology, oral surgery, regional anatomy, special materia medica, therapeutics, orthodontia, crown and bridge work, including porcelain work, general anæsthesia, operative and prosthetic dentistry, general surgery, metallurgy and electricity, practice in prosthetic laboratory.
University of Denver, Dental Department, Denver, Colo., 1899–1900.	Anatomy, physiology, chemistry (lectures and laboratory), materia medica and therapeutics, histology, operative and prosthetic technics.	Physiology, operative dentistry, materia medica and therapeutics, bacteriology, prosthetic dentistry and metallurgy, orthodontia, crowns and bridges, regional anatomy and histology, infirmary and laboratory work.	Operative dentistry, prosthetic dentistry and metallurgy, pathology and oral surgery, orthodontia, crowns and bridges, special lectures, clinics, specimen work, infirmary and laboratory work.
The Columbia University Dental School, Washington, D. C., 1900.	Anatomy, physiology, chemistry, materia medica, practical anatomy, operative and prosthetic technics, and such infirmary work as is suitable for first-year students.	Subjects of first year continued, and to these are added operative dentistry, prosthetic dentistry, and histology, with more advanced infirmary work.	Operative and prosthetic dentistry, oral surgery, and bacteriology.

COURSES OF STUDY IN DENTAL SCHOOLS—Continued.

Institution.	First year.	Second year.	Third year.
Washington Dental College, Washington, D. C., 1899-1900.	Anatomy 2, physiology 2, materia medica 2, chemistry 3, operative dentistry 2, prosthetic dentistry 2, histology 1, bacteriology 1. Laboratory work: Technics of prosthetic and operative dentistry 4 daily, practical anatomy, chemistry 4, histology 1 for 3 months.	Anatomy 2, physiology 2, chemistry and metallurgy 3, materia medica and therapeutics 2, prosthetic dentistry 2, operative dentistry 2, oral surgery 1. Laboratory work: Practical anatomy, histology 1 for 3 months, dental pathology 1, bacteriology 1, crown and bridge work 1, infirmary practice 4 daily.	Metallurgy 2, operative dentistry 2, prosthetic dentistry 2, dental pathology 1, oral surgery 2. Laboratory work: Infirmary practice 4 daily, physiological chemistry 2 until Jan. 1, crown and bridge work 1, pathology 1.
Atlanta Dental College, Atlanta, Ga., 1898-99.	Elementary chemistry and physics, materia medica, elementary anatomy, osteology and general histology, general physiology except the nervous and muscular systems, dental histology, dental technics.	Chemistry including laboratory, materia medica and therapeutics, oral surgery and dental hygiene, anatomy and general histology, physiology, operative dentistry, prosthetic dentistry, dental histology and pathology, metallurgy, general infirmary practice, dissecting.	Anatomy, physiology, chemistry, oral surgery, dental hygiene, prosthetic dentistry, operative dentistry, dental pathology, dental histology, orthodontia, metallurgy, dental medicine, bacteriology, general infirmary practice.
Chicago College of Dental Surgery, Dental Department of Lake Forest University, 1898-99.	Theoretical and practical chemistry, anatomy including dissection, physiology 3, materia medica 1, dental anatomy, histology, operative and prosthetic technics, operative and prosthetic dentistry.	Anatomy, physiology, chemistry, histology, pathology, bacteriology, materia medica 2, comparative dental anatomy, crown and bridge work, regulating appliances, splints, plate work, infirmary work.	Oral surgery, therapeutics 2, operative dentistry, dental anatomy and pathology, orthodontia, bacteriology, clinics, practical prosthetic dentistry, construction and use of regulating appliances, infirmary.
Northwestern University Dental School, Chicago, Ill., 1898-99.	Anatomy and dissecting, physiology, histology and histological laboratory, prosthetic dentistry, chemistry and physics, metallurgy, operative technics, prosthetic technics.	Anatomy and dissecting, comparative anatomy, physiology, dental histology, chemistry, pathology (general), special pathology and bacteriology, materia medica and therapeutics, prosthetic dentistry, operative dentistry.	Special pathology and bacteriology, materia medica and therapeutics, oral surgery, orthodontia, dental jurisprudence and ethics, operative dentistry.
The Central College of Dentistry, Indianapolis, Ind., 1899-1900	Anatomy, physiology, dental materia medica, histology, operative dentistry, operative technique, dental anatomy, chemistry, dissection, prosthetic technique, prosthetic dentistry, specimen work.	Anatomy, physiology, dental development, dental pathology, chemistry, operative dentistry, prosthetic dentistry, clinical dentistry, crown work, materia medica, dissection, orthodontia technique, infirmary and laboratory practice, specimen work.	Operative dentistry, dental microscopy, orthodontia, special clinic, oral surgery, prosthetic dentistry; crown, bridge, and porcelain work; aural, optic, and dental relations, nasopharyngeal and dental relations, general surgery, bacteriology, general pathology, metallurgy, dental jurisprudence and ethics, electricity, hygiene, infirmary and laboratory practice, specimen work.
State University of Iowa, Dental Department, Iowa City, Iowa, 1900.	Anatomy 4, physiology 3, histology 3, histological laboratory 2, dental anatomy 1, dental technic 2, operative technic 1, prosthetic technic 1, prosthetic laboratory 6, organic materia medica 1, recitation in materia medica 1. Spring programme: Chemistry 7, chemical laboratory 4, physiology 4, prosthesis 1, prosthetic laboratory 6.	Anatomy 4, physiology 4, special pathology 2, therapeutics 2, operative dentistry 2, prosthetic dentistry 2, orthodontia 1, special lecture 1, prosthetic laboratory 6, orthodontia laboratory 3, inorganic materia medica 1. Spring programme, Chemistry 2, chemical laboratory 6, pathology 3, operative dentistry 2, oral surgery 1, orthodontia 1, histological laboratory 6, infirmary.	Regional anatomy 1, pathology 1, special pathology 2, recitation pathology 1, special therapeutics 1, orthodontia 1, prosthetic dentistry 1, operative dentistry 2, special lecture 2, infirmary. Spring programme: Oral surgery 2, therapeutics 1, operative dentistry 2, prosthesis 2, special lecture 2, orthodontia 1, recitations 3, infirmary.

Keokuk Medical College, Dental Department, Keokuk, Iowa, 1897-98.	Anatomy and dissecting, chemistry and chemical laboratory, physiology, histology and histological laboratory, dental anatomy, prosthetic technics, operative technics.	Physiology, materia medica and therapeutics, prosthetic dentistry, operative dentistry, general pathology, chemistry, dental histology and pathology, dental anatomy, dental chemistry, metallurgy.	Operative dentistry, dental pathology, bacteriology, oral surgery, orthodontia, special materia medica, therapeutics and hygiene, anæsthesia, dental chemistry, metallurgy and dental jurisprudence.
Baltimore College of Dental Surgery, Baltimore, Md., 1900.	Anatomy, physiology, chemistry, dental materia medica, didactic and practical mechanical dentistry and operative dentistry, pathology and therapeutics.	Review of freshman studies, histology, pathology, materia medica, therapeutics, mechanical and operative dentistry, dissection, chemistry, physiology, general and surgical anatomy.	Continuation of the preceding studies with the addition of surgery.
Baltimore Medical College, Dental Department, Baltimore, Md, 1898-99.	Prosthetic dentistry, operative dentistry, dental technique, dental histology, anatomy, physiology, materia medica, chemistry, histology, infirmary and laboratory work.	Prosthetic dentistry, operative dentistry, pathology and therapeutics, anatomy, physiology, dental materia medica, chemistry, metallurgy, infirmary and laboratory work.	Prosthetic dentistry, metallurgy, operative dentistry, dental pathology and therapeutics, oral surgery, bacteriology, infirmary and laboratory work.
Dental department of the University of Maryland, Baltimore, Md., 1899-1900.	Dental anatomy, physiology, chemistry, dental materia medica and therapeutics, didactic and practical prosthetic dentistry, and operative dentistry.	Principles of dental science, dental histology, dental pathology, materia medica and therapeutics, operative and prosthetic dentistry, chemistry, physiology, general and surgical anatomy, and dissection.	Review of freshman and junior studies (and anatomy, physiology, chemistry, materia medica, and therapeutics if not completed during the junior year), oral surgery, operative and prosthetic dentistry, and the principles of dental science.
Harvard University Dental School, Boston, Mass., 1898-99.	First term, October-February: Anatomy 7, physiology 3, physiology laboratory 3, histology 1, histology laboratory 5, chemistry 2, chemistry laboratory 2, bacteriology 1. Second term, February-June: Anatomy 3, physiology 6, bacteriology 1, chemistry 2, chemistry laboratory 2, practical dentistry 1.	Crown and bridge work and metallurgy 1, operative dentistry 2, practical operative dentistry 6, dental pathology 1, mechanical dentistry and orthodontia 1, practical mechanical dentistry 6, orthodontia clinic 1, oral anatomy and physiology 1, materia medica and therapeutics 2.	Crown and bridge work and metallurgy 1, surgical pathology 10 lectures in term, operative dentistry 1, operative dentistry or dental jurisprudence 1 for 5 weeks, operative dentistry clinic 1, mechanical dentistry and orthodontia 4, neurology, practical mechanical dentistry laboratory, practical operative dentistry 15.
Tufts College Dental School (formerly the Boston Dental College), Boston, Mass., 1900-1901.	Anatomy, physiology, chemistry, histology; operative, clinical, and mechanical dentistry.	Materia medica and therapeutics, pathology and bacteriology, surgical pathology, orthodontia; operative, clinical, and mechanical dentistry.	Practice of dental medicine, anæsthesia, and oral surgery, orthodontia; operative, clinical, and mechanical dentistry.
University of Michigan College of Dental Surgery, Ann Arbor, Mich., 1898-99. (Whole number of hours is given.)	First semester. Osteology and anatomy 51, general chemistry 85, prosthetic dentistry 17, dental laboratory work 400. Second semester: Organic chemistry 51, descriptive anatomy 51, histology (lectures) 51, prosthetic dentistry 17, dental laboratory work 400.	First semester: Physiology 85, bacteriology 68, operative principles and materials 17, prosthetic dentistry 17. Second semester: Dental and comparative anatomy 34, physiology 85, operative principles and materials 17, prosthetic dentistry 17. The following subjects run through the year: Regulating and porcelain technique 80, dissection 120, histological laboratory 80, qualitative chemistry 120, operative technique 120.	Dental surgery and pathology 100, oral surgery 68, dental medicine 100, orthodontia and oral deformities 34, prosthetic clinic 300, operative dentistry 34, operative clinic 500.

COURSES OF STUDY IN DENTAL SCHOOLS—Continued.

Institution.	First year.	Second year.	Third year.
Detroit College of Medicine, Department of Dental Surgery, Detroit, Mich., 1899-1900. (Whole number of hours is given.)	First semester: Osteology and descriptive anatomy 51, physiology 45, inorganic chemistry 45, prosthetic dentistry (lectures) 17, dental laboratory practice 300, general materia medica 34. Second semester: Descriptive anatomy 51, physiology 45, inorganic chemistry 45, histology 51, prosthetic dentistry (lectures) 17, dental laboratory practice 300, general materia medica 34, histological laboratory 80.	First semester: Regional anatomy 60, physiology 45, general materia medica 34, bacteriology 68, prosthetic dentistry (lectures) 17, organic chemistry 51, prosthetic clinic 125, dental anatomy 34, embryology 17. Second semester: Dental regional anatomy 17, physiology 45, qualitative chemistry 120, operative clinic 66, dental materia medica 17, operative technique 120, prosthetic dentistry (lectures) 17, anatomy dissection 120, prosthetic clinic 125, bacteriology (laboratory) 120.	First semester: Dental pathology and surgery 34, operative dentistry 17, clinical operative dentistry 250, materia medica and therapeutics 17, clinical oral surgery 34, prosthetic dentistry clinic, crown and bridge work 125, orthodontia and oral deformities 17. Second semester: Operative dentistry 17, clinical operative dentistry 250, oral pathology and surgery 34, dental materia medica 17, clinical oral surgery 34, prosthetic dentistry clinic, crown and bridge work 125, orthodontia and oral deformities 17.
University of Minnesota College of Dentistry, Minneapolis, Minn., 1899.	Anatomy, physiology, histology and embryology, chemistry, dental anatomy, prosthetic technics.	Anatomy, pathology, materia medica, therapeutics, operative dentistry, prosthetic dentistry, orthodontia crown and bridge work.	Pathology, bacteriology, oral surgery, physical diagnosis, anæsthetics, orthodontia, operative dentistry, prosthetic dentistry, crown and bridge work, metallurgy, students' dental society.
Kansas City Dental College, Kansas City, Mo., 1899-1900.	Anatomy, physiology and histology, chemistry, materia medica, dental anatomy, prosthetic dentistry, operative dentistry, prosthetic and operative technics and physics.	Freshman studies continued except technics and physics, clinical and oral surgery, and dental pathology.	Clinical and oral surgery, dental pathology, operative dentistry, and prosthetic dentistry.
The Marion Sims College of Medicine, Dental Department, St. Louis, Mo., 1898-99.	Histology, including laboratory work; dental anatomy, inorganic chemistry, osteology, operative technic, anatomy, physiology, operative dentistry, mechanical dentistry, metallurgy.	Anatomy, including dissection; physiology, organic chemistry, mechanical technics, metallurgy, surgery, pathology, materia medica and therapeutics, orthodontia, dental pathology, operative and mechanical dentistry.	Oral surgery, pathology (general and oral), materia medica and therapeutics, orthodontia, practical bacteriology, operative and mechanical dentistry, lectures and clinics.
Missouri Dental College, Dental Department, Washington University, St. Louis, Mo. 1899-1900.	Anatomy, materia medica, comparative anatomy with dissection, pharmacy, mechanical dentistry, dental technology and laboratory work, metallurgy.	Anatomy, therapeutics, chemistry, metallurgy, dental technics, physiology, operative dentistry, mechanical dentistry, orthodontia technics.	Physiology, hygiene, surgery and clinical surgery, operative dentistry, institutes of dental science, mechanical dentistry, orthodontia.
Lincoln Dental College, Department of Lincoln Medical College of Cotner University, Lincoln, Nebr., 1900-1901.	Chemistry, including laboratory, 6, materia medica and therapeutics 3, histology, including laboratory, 2, osteology 1, dental anatomy 2, prosthetic technic 10. Subjects continued in junior year: General anatomy 3, operative technic 2, dissection, one part, physiology 2, bacteriology 2.	Subjects completed. General anatomy 3, dissection, physiology 2, operative technic 2, metallurgy and dental chemistry 3, special histology 2, special bacteriology 2, general pathology 1. Subjects continued in third year: Operative dentistry 2, prosthetic dentistry 2, orthodontia and fractured maxillæ 1, infirmary 8, dental materia medica and therapeutics 1, dental pathology 2.	Oral hygiene 1, oral surgery 1, operative dentistry 2, orthodontia and fractured maxillæ 1, dental materia medica and therapeutics 1, anæsthetics 1, dental pathology 2, general surgery 1, dental jurisprudence ½, prescriptions and pharmacy 1, porcelain art 1, infirmary practice 30.
University of Omaha, Dental Department, Omaha, Nebr., 1899-1900.	Anatomy and dissecting, physiology, prosthetic dentistry, chemistry and chemical laboratory, histology and histological lab-	Anatomy and dissecting, physiology, pathology, surgery, materia medica and therapeutics, prosthetic dentistry and technics,	Surgery, operative dentistry, prosthetic dentistry, dental pathology, bacteriology, embryology, oral surgery and facial art, re-

	oratory, dental anatomy, operative technics, prosthetic technics.	operative dentistry and technics, chemistry, dental histology, dental anatomy, dental chemistry, and metallurgy.	gional anatomy, orthodontia and technics, dental ethics and hygiene, materia medica and therapeutics, dental chemistry and metallurgy, dental jurisprudence.
University of Buffalo, Dental Department, Buffalo, N. Y., 1900–1901.	General anatomy 3, dental anatomy 2, practice, physiology 2, chemistry 2, prosthetic dentistry 1, prosthetic technics 1, materia medica 1, prosthetic laboratory, recitation 3, quiz 4, clinics 6, dissection.	Regional anatomy 1, crown and bridge work 1, physiology 2, materia medica 2, operative technics 11, operative dentistry 4, prosthetic dentistry 2, dental surgery 1, metallurgy 1, chemical laboratory 2, infirmary 1, prosthetic laboratory, embryology 1, dissection.	Recitation 5, physiology 1, histology 1, histological laboratory 1, regional anatomy 1, pathology 2, therapeutics 2, oral chemistry 1, chemical laboratory 2, oral surgery 1, surgical clinics 2, operative dentistry 2, bacteriology 1, crown and bridge work 1, infirmary and laboratory practice 10, infirmary 10 orthodontia 1, operative and prosthetic clinic 2, electro-therapeutics 1, bacteriological and pathological laboratories 5.
New York Dental School, New York, N. Y., 1899–1900.	Anatomy 2, physiology 1, chemistry 2, operative dentistry 2, prosthetic dentistry 2, oral surgery 2. Laboratory work: Materia medica 1 during Oct. and Nov. Chemistry 2 after Jan. 1; technics of prosthetic and operative dentistry, during morning hours, whole session.	Anatomy (special dissections, three parts required) 2, physiology 2, physics 1 for half session, chemistry and metallurgy 1, materia medica and therapeutics 2 for half session, prosthetic dentistry 2, oral surgery and pathology 2, operative dentistry 1 for 6 months and 2 for rest of session. Laboratory work: Histology 2 for 2 months, infirmary practice 9–12 a. m. daily.	Anatomy 2, physiology 1, chemistry 2, materia medica and therapeutics 2, prosthetic dentistry 2, pathology 1, oral surgery and pathology 2, operative dentistry 1 for 6 months and 2 for remainder of session. Laboratory work: Pathology 2 for 2 months, bacteriology 2 for 2 months, infirmary practice 9–12 a. m. daily, physiological chemistry 2 until Jan. 1.
Cincinnati College of Dental Surgery, Cincinnati, Ohio, 1899–1900.	Metallurgy, theoretical chemistry, physiology, anatomy, dissecting, operative technics, prosthetic technics.	Anatomy (final), surgery, practical chemistry, laboratory course 60, histology, physiology (final), materia medica, chemistry, crown and bridge work technics, operative dentistry, oral pathology, prosthetic dentistry, general pathology.	Operative dentistry, oral pathology, orthodontia technics, materia medica, prosthetic dentistry, crown and bridge work, orthodontia, oral surgery, general pathology, bacteriology.
Miami Dental College, Cincinnati, Ohio, 1898–99.	Anatomy, dissection, general chemistry, analytical laboratory, prosthetic dentistry with laboratory work, operative technique, physiology, dental prophylaxis and hygiene, infirmary practice.	Anatomy, dissection, physiology and prosthetic dentistry, dental chemistry, operative dentistry and infirmary work, oral surgery, materia medica and therapeutics, dental prophylaxis and hygiene, dental pathology, general pathology and histology, laboratory, crown, and bridge work.	Dental pathology, dental materia medica and therapeutics, operative and prosthetic dentistry, with infirmary work, crown and bridge work, oral surgery, dental jurisprudence.
Ohio College of Dental Surgery, Cincinnati, Ohio, 1897–98.	Anatomy, physiology, histology, chemistry, dental anatomy, prosthetic dentistry, course in extracting teeth, operative technics, prosthetic technics, histological laboratory, dissecting and prosthetic infirmary practice.	Anatomy, physiology, operative dentistry, prosthetic dentistry and metallurgy, chemistry, anæsthetics, dental pathology, dissecting, chemical laboratory, general infirmary practice, crown and bridge work.	Anatomy and oral surgery, general pathology, chemistry and materia medica, operative dentistry, dental hygiene, orthodontia, crown and bridge work, continuous gum and porcelain work, mechanical treatment of cleft palate, and general infirmary practice.
Dental College of Western Reserve University, Cleveland, Ohio, 1900–1901.	Osteology 2, chemistry lectures 5, laboratory 6, prosthesis, lecture 1, laboratory 15, histology 4 for 16 weeks, dental anatomy 1.	Descriptive anatomy 4, regional 1, physiology 2, dental histology and embryology 1 to Christmas, metallurgy 1 for 5 months, operative technics 6 to Christmas, crown and bridge 1 for 4 months, prosthesis, crown and bridge work and orthodontia technics 15 for 4 months, clinical dentistry 20 for 4 months, dissections, dental pathology 1.	Operative dentistry 2 and 3 for 4 months each, operative clinics 30, pathology 1, materia medica and therapeutics 1, bacteriology 9 for 8 weeks, oral surgery 1, orthodontia, anæsthetics, jurisprudence, dental hygiene, electro-therapeutics.

COURSES OF STUDY IN DENTAL SCHOOLS—Continued.

Institution.	First year.	Second year.	Third year.
Ohio Medical University, Dental Department, Columbus, Ohio, 1898-99.	Anatomy and dissection, physiology, chemistry, science and practice of dentistry, experimental, operative, and prosthetic dentistry, histology, bacteriology.	General anatomy, dental anatomy, physiology, organic chemistry, pathology, operative dentistry, prosthetic dentistry.	Operative dentistry, prosthetic dentistry, materia medica and therapeutics, oral surgery, orthodontia, anæsthetics, dental jurisprudence, histology, and microscopy.
Medico-chirurgical College of Philadelphia, Pa., Department of Dentistry, 1899-1900.	Anatomy 4, physiology 4, physiological laboratory 2, osteology 1, prosthetic dentistry 5, laboratory instruction in prosthetic dentistry 11, general pathology 3, general chemistry 2, laboratory chemistry 4, histological laboratory 6, bacteriology 1, operative dentistry 2, clinical dentistry 1, clinical surgery 2, materia medica 3, anæsthetics operative technic 2, dental pathology and therapeutics 1, dissection 3.	Anatomy 4, physiology 4, physiological laboratory 1, general pathology 3, pathological laboratory 5, dental pathology and therapeutics 2, operative dentistry 3, prosthetic dentistry 4, crown and bridge work 1, prosthetic or operative clinic, crown and bridge work 4, laboratory of prosthetic dentistry or operative clinic, crown and bridge work 13, prosthetic or operative clinic 3, chemistry 2, bacteriology 2, hygiene 1, materia medica 1, dental materia medica 1, anæsthetics 2, surgery clinic 1, oral surgery 1, clinical dentistry 1, dissection 3.	Dental pathology and therapeutics 2, operative surgery 5, oral surgery 1, crown and bridge work 1, prosthetic dentistry 3, prosthetic dentistry clinic 2, operative dentistry 3, operative or prosthetic clinic 1, clinical dentistry 1, operative clinic 2, operative or prosthetic clinic, crown and bridge work 34, dental materia medica 1, porcelain clinic 1, metallurgy 2.
Philadelphia Dental College, Philadelphia, Pa., 1899-1900.	Lecture requirements: General anatomy and surgery, physiology, chemistry, histology, bacteriology and comparative dental anatomy, clinics. Practical requirements: Dental technics, free-hand drawing, modeling, ivory carving, preparation and filling with tin model cavities in ivory, and root canals in extracted teeth; experimental plate work; swaging, grinding, soldering, repairing, etc.; dissecting; work in chemical, histological, and bacteriological laboratories.	Lecture requirements: Chemistry, operative and prosthetic dentistry, dental pathology and therapeutics, special anatomy and oral surgery, physiology, materia medica, anæsthesia, bacteriology, clinics. Practical requirements: Preparation and filling of cavities, crown and bridge work, chemical and bacteriological laboratories and practice in infirmary.	Lecture requirements: Operative and prosthetic dentistry, dental pathology and therapeutics, materia medica and anæsthesia, special clinics, crown and bridge work. Practical requirements: General infirmary practice, making practical metal case and requisite graduation fillings; requirements in metallurgical laboratory and general infirmary practice; infirmary daily from 9 a. m to 3 p. m.
University of Pennsylvania, Department of Dentistry, Philadelphia, Pa., 1898-99.	Chemistry 2, chemical laboratory 3, dental materia medica 1, elementary anatomy 2, physiology 2, demonstration 2, histological laboratory 2, osteology 1, demonstration 1, mechanical dentistry 2, laboratory work in same 3, operative clinics 2, metallurgy 1 (after January 1).	Clinical dentistry 1, oral surgery 1, anatomy 2, physiology 3, operative dentistry 2, mechanical dentistry 2; metallurgy 1 (after January 1), dental pathology and therapeutics 1, mechanical dentistry, or operative clinic, crown and bridge work, all laboratory work, operative clinic	Oral surgery 1, operative dentistry 2, mechanical dentistry 2, metallurgy 1 (after January 1), dental pathology and therapeutics 1, operative or mechanical clinic and clinical practice in crown and bridge work, operative clinic.
Pittsburg Dental College, Dental Department of the Western University of Pennsylvania, Pittsburg, Pa., 1900-1901.	Operative technics, prosthetic technics, materia medica and therapeutics, extracting and anæsthesia, anatomy, chemistry, physiology, histology, including laboratory, dissection.	Operative dentistry, prosthetic dentistry, dental histology, dental pathology and therapeutics, materia medica and therapeutics, pathology, metallurgy, crown and bridge work, physiology, principles and practice of oral and general surgery, anatomy; head dissection, pathological and bacteriological laboratory.	Infirmary practice, dental histology, dental pathology and therapeutics, pathology, orthodontia, crown and bridge work, organic chemistry and chemistry of anæsthetics, practice of oral surgery and clinical surgery.

Tennessee Medical College, Dental Department, Knoxville, Tenn., 1897–98.	Anatomy, physiology, histology, dissection, operative dentistry, dental anatomy, clinical dentistry, mechanical dentistry, and chemistry.	Anatomy, physiology, histology, pathology, materia medica, chemistry, principles of surgery, surgical pathology, operative, clinical, and mechanical dentistry.	Materia medica, practice of dental medicine, anæsthetics, oral surgery, operative, clinical, and mechanical dentistry.
Central Tennessee College, Meharry Dental Department, Nashville, Tenn., 1900–1901.	Anatomy, chemistry, and dental anatomy, with 2 hours' work a day for 10 weeks in the chemical laboratory, 2 per day in dental infirmary or laboratory; mechanical and operative dentistry, dental technics.	Anatomy and physiology, with 2 hours' work per day in dental infirmary or laboratory; mechanical and operative dentistry, dissecting, dental technics.	[1] Physiology, materia medica, mechanical and operative dentistry, metallurgy, histology and microscopy, crown and bridge work, hygiene, surgery, electro-therapeutics, pathology, orthodontia.
University of Tennessee, Dental Department, Nashville, Tenn., 1897–98.	Anatomy, physiology, materia medica, chemistry, laboratory chemistry, operative dentistry, prosthetic dentistry, dental materia medica, orthodontia and anæsthesia.	Anatomy, physiology, chemistry, materia medica, surgery, operative dentistry, prosthetic dentistry, oral surgery, orthodontia and anæsthesia, microscopical laboratory.	Operative dentistry and oral pathology, prosthetic dentistry, oral surgery, general surgery, orthodontia and anæsthesia, dental materia medica, dental jurisprudence.
Vanderbilt University, Department of Dentistry, Nashville, Tenn., 1898–99.	Anatomy and physiology 3, dental anatomy 1, histology 1, histological laboratory 3, clinical dentistry 1, chemistry 2, chemical laboratory 2, prosthetic dentistry 1, prosthetic technic 4, operative technic 4, materia medica and therapeutics 1, laboratory of mechanical dentistry, infirmary, clinic, crown and bridge work.	Clinical dentistry and special pathology 1, operative dentistry 2, prosthetic dentistry 2, metallurgy 1, anatomy and physiology 3, pathology and oral surgery 1, materia medica and therapeutics 1, crown and bridge work 1, laboratory prosthetic dentistry 12, operative clinic, clinical practice, crown and bridge work.	Operative dentistry 2, prosthetic dentistry 2, dental medicine 1, dental jurisprudence 1, metallurgy 1, clinical dentistry and special pathology 1, pathology and oral surgery 1, pathological and bacteriological laboratory 2, laboratory of mechanical dentistry, operative clinic, or crown and bridge work.
North Pacific Dental College, Portland, Oreg.; formerly Tacoma College of Dental Surgery, Tacoma, Wash., 1897–98.	Anatomy, physiology, chemistry, materia medica, dental anatomy, histology, operative and prosthetic technics, dissecting.	Anatomy, physiology, therapeutics, pathological anatomy, bacteriology, principles of surgery, operative and prosthetic dentistry, dental chemistry, laboratory requirements.	Operative and prosthetic dentistry, dental pathology and therapeutics, oral surgery, infirmary and laboratory requirements.
Milwaukee Medical College, Dental Department, Milwaukee, Wis., 1898–99.	Chemistry, operative technics, anatomy, prosthetic technics, histology, dental materia medica, physiology, prosthetic dentistry.	Anatomy, chemistry, orthodontia, operative dentistry, prosthetic dentistry, therapeutics, pathology, bacteriology, crown and bridge work, oral surgery.	Operative dentistry, prosthetic dentistry, therapeutics, crown and bridge work, dental ceramics.

[1] Third and fourth years.

II.—EDUCATION IN THE PHILIPPINES.

By F. F. Hilder.

Under Spanish rule education in the Philippine Islands was entirely under the control of the religious orders and centered in Manila, but instead of commencing with primary schools and elevating the masses of the people, they began by establishing colleges and schools for higher education. St. Joseph's College in Manila was founded by the Jesuits as long ago as 1595, and graduated its first class in 1601; the college of Santo Tomas was founded by the Dominicans in 1611, and the title of university was conferred on it by the Pope in 1645; and the college of San Juan Latran, also a Dominican institution, was established in 1630.

The Jesuits have made the most earnest and enlightened efforts in the cause of education, but when they were expelled from the islands in 1767 the Dominicans took possession of the institutions for higher education that they had founded and incorporated them with their own, and they have resisted all efforts to sever them from their authority and to place them under State supervision.

The result of this system of higher education has been to instruct and polish a few thousand of the wealthier natives and mestizos, who have demonstrated the intellectual capabilities of the race as statesmen, lawyers, artists, and writers, while the great mass of the people have been left in abject ignorance.

It is true that schools were established throughout the islands, but little progress was made in them, as the majority of the teachers did not understand Spanish, and what few rudiments of education the children acquired were forgotten when they left the schools.

Knowing no language but their own, in which little or no literature exists, a large proportion of the Filipinos are woefully uneducated. No Asiatic language serves any practical use outside of Asia, and the people of the Philippines must acquire a language that will open up to them a wider range of literature and place them in touch with current events and the world's store of knowledge before they can make substantial progress.

Side by side with the education of the children in English the work should go on of translating English literature into the native languages, so that those of the people who are past the school age and can not readily acquire a foreign tongue may not be without good reading and be kept in accord with the new ideas acquired by their children.

One of the first and best results of the substitution of American authority for Spanish rule is that everywhere throughout the archipelago the schoolhouse follows the flag. As the army advances and fresh territory becomes safe and peaceful, schools are at once established, regulated by the broad and liberal methods of American education.

Manila, being the metropolis and also the first territory to pass under the control of the United States, has been the first to demonstrate the beneficial effects of the enlightened policy of popular education.

At present the public-school system of Manila embraces 41 schools, which are maintained at a cost of nearly 10,000 Mexican dollars per month, equal to nearly $5,000 in American currency, with a regular attendance of 5,000 pupils. They are in session every day in the week, except Thursdays and Sundays, from 7.30 to 10.30 a. m. and from 2.30 until 5 p. m.

Two of these schools, for boys, are conducted by 28 Jesuit fathers, and one, for

girls, by a Spanish sisterhood, of whom 12 act as teachers. These three schools embrace a high school with considerable academic work for boys, some high-school work for girls, a commercial school for boys, common-grade work for each sex separately, a normal school for males, and two primary schools for boys and one for girls, one of those for boys being a training school for teachers in connection with the normal school. In all these schools great interest is shown in the study of the English language, but beyond this the studies have been altogether in Spanish. This will be changed to some extent in the coming school year—June, 1900, to March, 1901—so as to embrace more work in English.

The remaining 38 schools are conducted under the auspices of the American authorities and the supervision of Mr. George P. Anderson, who was appointed as superintendent of public instruction by General Otis. They comprise 19 for each sex, scattered throughout the various districts and subdistricts of the city, the schools for boys and those for girls being located close to each other and sometimes in the same building.

The following is the official circular issued by the American governmental authorities for the school year commencing July 3, 1899, containing list of the public schools of Manila, their location, and the regulations, in three languages—English, Spanish, and Tagalog:

[Headquarters Provost-Marshal-General.]

CIRCULAR.

MANILA, PHILIPPINE ISLANDS, *June 28, 1899.*

The public schools of the city shall be reopened on Monday, July 3, for the school year of nine months' duration. Regular attendance, at some school, of all children between the ages of 6 to 12 years, inclusive, will be required.

The police of each district will take note of this requirement to enforce this attendance and report delinquents when the facts are clearly established, seeing to the attendance at the proper public schools, according to residence, in each district or section of a district. One hour's instruction per day in all public schools shall be devoted to teaching the English language.

The public schools shall be opened every day in the week, excepting Thursdays and Sundays, from 7.30 a. m. to 10.30 a. m., and from 2.30 p. m. till 5 p. m., provided that all public schools shall also be closed on legally constituted holidays, and teachers shall strictly enforce this requirement.

These holidays are:

Circumcision	Jan. 1.
Three Kings' Day	Jan. 6.
Purification	Feb. 2.
Washington's birthday	Feb. 22.
Holy Week	Two days—Thursday and Friday.
Ascension Day	May 11.
Decoration Day	May 30.
Corpus Christi Day	June 1.
Independence Day	July 4.
Assumption Day	Aug. 15.
Labor Day	Sept. 4.
All Saints	Nov. 1.
Thanksgiving Day	Last Thursday in November.
St. Andrew's Day	Nov. 30.
La Purísima Concepción	Dec. 8.
Christmas Day	Dec. 25.

The following is the list of public schools, according to district and section of district:

Tondo.—First section, boys, Plaza de Tondo; first section, girls, Plaza de Tondo; second section, boys, Calle Santa Elena, No. 3; second section, girls, Calle Sagunto, No. 16.

Binondo.—First section, boys, Camba, No. 49; first section, girls, Camba, No. 49; second section, boys, Plaza de Binondo; second section, girls, Plaza de Binondo.

Quiapo.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

San Sebastian.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

Santa Cruz.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

Ermita.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

Malate.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

Paco.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

Pandacan.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

San Pedro Macati.—First section, boys, Calle Hospital, No. 1; first section, girls, Calle Hospital, No. 1; second section, boys, Calle Hospital, No. 1; second section, girls, Calle Hospital, No. 1.

[Cuartel General, Oficina del Preboste-Mariscal.]

CIRCULAR.

MANILA, *23 de Junio de 1899.*

Las escuelas de esta ciudad se abrirán de nuevo el Lúnes 3 de Julio, por el año de escuela (que dura nueve meses.

Se exige la asistencia regular en alguna escuela á todos los niños de 6 á 12 años de edad. La policía de cada distrito anotará las infracciones de este circular cuando el hecho es claramente establecido; se obligará la asistencia á la dicha escuela pública, conforme á la residencia en cada distrito ó sección de distrito.

Una hora de instrucción al día se dedicará al idioma ingles.

Las escuelas públicas se abrirán cada día de la semana exceptuando los Jueves y Domingos, desde las siete y media de la mañana hasta las cinco de la tarde; proveyendo que las escuelas públicas quedarán cerradas en los días de fiesta legalmente constituidas y los maestros observarán rigorosamente este requisito.

Los días de fiesta son:

Circuncisión	Enero 1.
Los tres Reyes	Enero 6.
Purificación	Febrero 2.
Nacimiento de Washington	Febrero 22.
Semana Santa	Jueves y Viernes.
Ascención	Mayo 11.
Decoración	Mayo 30.
Corpus Christi	Juno 1.
Independencia	Julio 4.
Asunción	Agosto 15.
Dia de la labor	Septiembre 4.
Todos los Santos	Noviembre 1.
Acción de Gracias	Jueves último de noviembre.
San Andrés	Noviembre 30.
La Purísima Concepción	Diciembre 8.
Pascua de Natividad	Diciembre 25.

A continuación se expresan las escuelas públicas en sus correspondientes distritos y sección de distritos.

Tondo.—Primera sección, niños, Plaza de Tondo; primera sección, niñas, Plaza de Tondo; segunda sección, niños, Calle, Santa Elena Núm. 3; segunda sección niñas Sagunto, Núm. 16.

Binondo.—Primera sección, niños, Camba, Núm. 49; primera sección, niñas, Camba, Núm. 49; segunda sección, niños, Plaza de Binondo; segunda sección, niñas, Plaza de Binondo.

Quiapo.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

San Sebastian.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

Santa Cruz.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

Ermita.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

Malate.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

Paco.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

Pandacan.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

San Pedro Macati.—Primera sección, niños, Calle Hospital, No. 1; primera sección, niñas, Calle Hospital, No. 1; segunda sección, niños, Calle Hospital, No. 1; segunda sección, niñas, Calle Hospital, No. 1.

[Cuartel General, Oficina ñg Prevoste Mariscal.]

CIRCULAR.

MAYNILA, *ika 28 ng̃ Junio ng̃ 1899.*

Ang manga escuela nitong ciudad ay muling bubuksan sa Lunes ika 3 ng̃ Julio at tatagal ng̃ si am na buan lamang sa loob ng̃ isang taon.

Ipinag-utos na pumasok sa isang escuela ang lahat ng̃ manga bata magmula sa 6 na taon bangang sa 12.

Ang policia sa bawa't distrito, tatandaan ang manga dì pag-alinsunod dito sa circular na ito. Kung ang dì pag-alinsunod ay marquilala, uutusan na pumasok sa escuela na nararapat tungkol sa kani ang tinitirahan.

Isang oras sa loob ng̃ isang arao ang ipagtuturo ng̃ salitang inglés.

Ang manga escuela pública ay bubuksan arao-arao bukod ang manga arao ng̃ Jueves at Lingo magmula sa á las 7 v ½ bangang á las 10 v ½ ng̃ umaga, at mulu naman sa á las 2 v ½ bangang sa á las 5 ng̃ apong; nguns't ipinaaalam na walang escuela sa la at ng̃ fiestang kinikilala.

Ang manga maestro a sivang mamama ala ng̃ katuparan nitong utos.

Ang manga arao ng̃ fiesta a :

Circuncisión	Enero 1.°
Los Tres Reyes	Enero 6.
Purificación	Febrero 2.
Nacimiento de Washington	Febrero 22.
Semana Santa	Jueves at Viernes Santo.
Ascención	Mayo 11.
Decoración	Mayo 30.
Corpus Christi	Junio 1.°
Independencia	Julio 4.
Asunción	Agosto 15.
Arao ng̃ Labor	Setiembre 4.
Todos los Santos	Noviembre 1.°
Acción de Gracias	Jueves último de Noviembre.
San Andrés	Noviembre 30.
La Purísima Concepción	Diciembre 8.
Pascua de Natividad	Diciembre 25.

Sa sumusunod dito nasasabi ang lahat ng̃ manga escuela pública sa kanicani ang distritos.

Tondo.—Unang sección, batang lalake, Plaza de Tondo; unang sección, batang babaye, Plaza de Tondo;

tion, girls, Elcano, No. 33; second section, boys, San José, No. 1; second section, girls, San Jacinto, No. 55; third section, boys, San José, No. 42; third section, girls, San José, No. 21.

Santa Cruz.—First section, boys, Dulumbayan, No. 24; first section, girls, Noria, No. 7; second section, boys, Lacoste, No. 9; second section, girls, Dulumbayan, No. 48.

Quiapo.—Boys, San Pedro, No. 3; girls, Villalobos, No. 12.

San Sebastian.—Boys, San Sebastian, No. 32; girls, San Sebastian, No. 32.

Sampaloc.—Boys, Gaztambide, No. 32; girls, Alejandro VI, No. 8.

San Miguel.—Boys, Novaliches, No. 10; girls, Novaliches, No. 39.

Concepción.—Boys, Marques de Comillas, No. 87; girls, Marques de Comillas, No. 85.

Ermita.—Boys, Gallera interior, No. 7; girls, Real, No. 27.

High Normal.—Boys, Calle de Observatorio, at the Observatorio.

Malate.—Boys, Plaza de Malate; girls, Nueva, No. 73.

Singalon.—Boys, ——; girls, ——.

Paco.—Boys, Nozaleda, No. 92; girls, Calle Real de Paco, No. 10.

Pandacan.—Boys, near the church; girls, near the church.

Santa Ana.—Boys, near the church; girls, near the church.

Intramuros.—Boys, Atenco, Arzobispo, No. 10; girls, Escuela Municipal, Calles Victoria and Solana.

By order of Colonel Williston, Provost-Marshal-General:

CHAS. T. MENOHER,
First Lieutenant, Sixth United States Artillery, A. A. A. G.

primera sección, niñas, Elcano, Núm. 33; segunda sección, niños, San José, Núm. 1; segunda sección, niñas, S. Jacinto, Núm. 55; tercera sección, niños, S. José, Núm. 42; tercera sección, niñas, S. José, Núm. 21.

Santa Cruz.—Primera sección, niños, Dulumbayan, Núm. 24; primera sección, niñas, Noria, Núm. 7; segunda sección, niños, Lacoste, Núm. 9; segunda sección, niñas, Dulumbayan, Núm. 48.

Quiapo.—Niños, San Pedro, Núm. 3; niñas, Villalobos, Núm. 12.

San Sebastián.—Niños, San Sebastián, Núm. 32; niñas, San Sebastián, Núm. 32.

Samaploc.—Niños, Gaztambide, Núm. 32; niñas, Alejandro VI, Núm. 8.

San Miguel.—Niños, Novaliches, Núm. 10; niñas, Novaliches, Núm. 39.

Concepción.—Niños, Marques de Comillas, Núm. 37; niñas, Marques de Comillas, Núm. 85.

Ermita.—Niños, Gallera Interior, Núm. 7; niñas, Real, Núm. 27.

Superior Normal.—Niños, Calle de Observatorio, en el Observatorio.

Malate.—Niños, Plaza de Malate; niñas, Nueva, Núm. 73.

Singalon.—Niños, ——; niñas, ——.

Paco.—Niños, Nozaleda, Núm. 92; niñas, Calle Real de Paco, Núm. 10.

Pandacan.—Niños, cerca de la Iglesia; niñas, cerca de la Iglesia.

Santa Ana.—Niños, cerca de la Iglesia; niñas, cerca de la Iglesia.

Intramuros.—Niños, Atenco, Arzobispo, Núm. 8; niñas, Escuela Municipal, Calles Victoria y Solana.

Por orden del Coronel Williston, Preboste Mariscal General.

CHAS. T. MENOHER,
1st Lieut., 6th U. S. Artillery, A. A. A. G.

icalauang sección, batang lalake, Calle Sta. Elena, n. 3; icalauang sección, batang babaye, Calle Sagunto, n. 16.

Binondo.—Unang sección, batang lalake, Camba, n. 49; unang sección, batang babaye, Elcano, n. 33; icalauang sección, batang lalake, San José, n. 1; icalauang sección, batang babaye, San Jacinto, n. 55; icatlong sección, batang lalake, San José, n. 42; icatlong sección, batang babaye, San José, n. 21.

Santa Cruz.—Unang sección, batang lalake, Dulumbayan, n. 24; unang sección, batang babaye, Noria, n. 7; icalauang sección, batang lalake, Lacoste, n. 9; icalauang sección, batang babaye, Dulumbayan, n. 48.

Quiapo.—Batang lalake, San Pedro, n. 3; batang babaye, Villalobos, n. 12.

San Sebastián.—Batang lalake, San Sebastián, n. 32; batang babaye, San Sebastián.

Sampaloc.—Batang lalake, Gaztambide, n. 32; batang babaye, Alejandro VI, n. 8.

San Miguel.—Batang lalake, Novaliches, n. 10; batang babaye, Novaliches, n. 39.

Concepción.—Batang lalake, Marques de Comillas, n. 87; batang babaye, Marques de Comillas, n. 85.

Ermita.—Batang lalake, Gallera Interior, n. 7; batang babaye, Real, n. 27.

Normal Superior.—Batang lalake, Calle de Observatorio, sa tunay na bahay nang Observatorio.

Malate.—Batang lalake, Plaza de Malate; batang babaye, Nueva, n. 73.

Singalon.—Batang lalake, ——; batang babaye, ——.

Paco.—Batang lalake, Nozaleda, n. 92; batang babaye, Calle Real de Paco, n. 10.

Pandacan.—Batang lalake, Malapit sa Simbahan; batang babaye, Malapit sa Simbahan.

Santa Ana.—Batang lalake, Malapit sa Simbahan; batang babaye, Malapit sa Simbahan.

Sa Loob Nang Maynila.—Batang lalake, sa Atenco, Arzobispo, n. 8; batang babaye, Escuela Municipal, Calles ng Victoria at Solana.

Por orden del Coronel Williston, Preboste Mariscal General.

CHAS. T. MENOHER,
1st Lieut., 6th U. S. Artillery, A. A. A. G.

English is taught in all these schools, although there are at present only 23 teachers of that language, who are mostly Americans. and a majority of them ladies.

Fortunately, these teachers all possess superior qualification for their work, being principally discharged volunteer soldiers, formerly well-known teachers in the United States, and young ladies members of the families of military officers. All of them have acquired a sufficient knowledge of the Spanish language to enable them to teach English to Spanish-speaking children.

A difficulty encountered by some of the male teachers in the suburban districts was that many of their pupils had little or no knowledge of the Spanish language. They therefore resolutely set to work to acquire the Tagalog as a means of interpretation, so that at present four or five of them possess a very commendable degree of knowledge of that language, and will prove to be very valuable men for the work of education.

There are 86 Spanish-speaking teachers, composed of Tagalogs, mestizos, and a very few Spanish men and women; almost all of these are graduates from the normal schools of Manila conducted by the Jesuits.

The greater part of these 33 schools are in rented buildings, mostly unfit for the purpose and entirely inadequate to accommodate the number of pupils packed into them, a difficulty which is increased by the continuance in many of them of the objectionable Spanish plan of allowing the teachers and as many of their relatives and friends as they can smuggle in to live in the school buildings, thus further diminishing the space so urgently needed for the children.

From what I have heard from the superintendent, I believe this will soon be remedied; but there is urgent need for the construction of a number of large, well-ventilated, eight, ten, and twelve room two-story buildings, in which no one should be allowed to lodge, eat, or sleep. To all of these buildings playgrounds should be attached, and all should be supplied with modern furniture and conveniences. Binondo and Tondo, two of the most thickly populated districts of Manila, could furnish children enough to fill 5 twelve-room buildings.

Instead of schools crowded with 5,000 pupils, as at present, Manila should have accommodation, with healthful surroundings, for at least 30,000 or 40,000 children, the majority of whom have no occupation but roaming the streets and acquiring bad habits.

With the pacification of the country and the improved civil conditions which are rapidly superseding the old order of things, there is little doubt that these needs will be supplied as rapidly as possible, judging from the immense amount of work that has been done and the improvement that has been effected in such a short space of time.

During the school year which closed on March 29 of the present year (1900) considerable good work has been done and true progress made. The methods of the Spanish teachers have been investigated and higher ideals inculcated.

At the close of the school year a report is made by the principal of each school to the parents or guardians of the children on the following form:

[Escuela municipal de —— del distrito de ——, clase ——, seccion ——.]

Manila, P. I., ——— ——, 1900.

Sr. D. ——— ———.

Muy Sr. mio: Tengo el honor de poner en conocimiento de V. las notas que ha obtenido el alumno D. ——— en los exámenes ——— curso de 1899 á 1900.

Conducta	Principios de geometría .....
Aplicación	Geografía universal .....
English reading	Geografía de Filipinas .....
English penmanship	Historia de Filipinas .....
English spelling	Principios de Ciencias naturales ....
Lectura en Español	Caligrafía .....
Moral	.....
Urbanidad	.....
Lengua castellana	.....
Gramática castellana	.....
Aritmética	Faltas de asistencia .....

———— ———, *Principal de la Escuela.*

In spite of the scarcity of teachers, English has been taught in all the schools and a good foundation laid for elementary English instruction, provision having been made to afford each child one good lesson every day. In most of the schools this has been done in three grades, the first of which has finished the primary reader and is ready for the new books which have been provided for more advanced study.

In a letter addressed to the writer by the superintendent occurs the following:

The American spelling match has proven to be a great novelty and a source of deep interest to these native children. In the Tondo district I witnessed a contest between the boys' and the girls' schools in spelling words from the reader, so far as they had gone—namely, half through the book at that time—but the keen edge of the contest was dulled by the fact that at the close it was found that each school had five or six spellers who were able to spell every word that could be given; it was impossible and unfair to fall back on the dictionary, so the match was declared a draw, at least so far as regards finding one best speller; but many interesting contests were arranged on other lines. The children have been found to be keen, eager, and quite capable of speedy progress in acquiring language. In this regard the outlook is very hopeful.

In another communication Mr. Anderson says:

I have great faith in the Filipino children of Manila; they are bright, capable, polite, earnest, and persevering, at least those that have lived in Manila for a few years and are not "raw material." The Manila native is not a savage; he appreciates civilization and highly prizes good education; he wants his children to know English and to obtain a good common-school training. The native teachers are bright, faithful, and patient, and good, steady workers. All that these people need is to be led aright; they will follow. Give them schools and plenty of them. Wake them up to a higher sense of duty and proper living. They are good material. They have already acquired great confidence in the American as the representative of true liberty of conscience and the standard bearer of a better and nobler civilization.

Such testimony from a professional educator, whose daily contact with the children and their parents enables him to form a just estimate of the character and capabilities of those under his charge, renders the outlook for the future of these people very hopeful. Whatever difficulties may be encountered in molding all of the present generation of adults into good and useful citizens, our reliance must be on the men and women of the future, now to be trained in American schools. Under the new conditions in the islands we are responsible for the future welfare of these people, and

that can only be secured by placing a good primary education within the reach of the poorest peasant child.

The superintendent is fully alive to the necessity and importance of systematically increasing the study of English. In the letter before referred to he says:

For the next school year—June, 1900–March, 1901—more English studies should be taught and the proportion of teachers of English increased. This need is probably not overestimated in stating that next year should see one-half of the work and time devoted to English and the other half to Spanish branches, some especially equipped teachers possibly being brought over from the United States, in addition to the present force.

In general the teachers and the pupils are intensely interested in their work, the English studies being the center of the greatest enthusiasm.

During the vacation of the present summer new books from American publishing houses in both English and Spanish have been placed in the hands of all the teachers, and the superintendent states that it is a matter of great encouragement to him to find that many of the Spanish teachers have gathered together in little classes for the study of the English language in the Baldwin First Year Reader and other books. He also says they are begging him to provide them with copies of the Journal of Education, which they had seen in the hands of some of the English teachers, and adds:

But they will have during the coming year, if it is possible, in their meetings more elaborate and further-reaching instruction given them in these matters by means of good translators.

During my recent visit to Manila I was present at the exercises at several of the schools when they were closed for the summer vacation, and was surprised at the remarkable proficiency displayed by the pupils, particularly in the English language, considering the short time they had been under instruction. The buildings were crowded to their utmost capacity by the parents and relatives of the children, who evinced the most enthusiastic interest in the proceedings. The programmes included recitations and dialogues both in Spanish and English, and the proceedings were closed at each school by the singing of the patriotic song "America" by the pupils, in the English language, with a vim and enthusiasm that could not have been excelled in any school in America.

The following is a copy of the programme of the closing exercises at one of these schools for boys in the Binondo district of Manila:

DISTRIBUCION DE PREMIOS PARA EL DIA 29 DE MARZO DE 1900.

[A las 9 de su mañana.]

2ª. ESCUELA MUNICIPAL DE NIÑOS DE BINONDO.

PROGRAMA.

1º. A. B. C. ingles, cantado por todos los alumnos de la escuela.
2º. Diálogo ingles declamado por V. y M.
3º. Declamacion en ingles por C. M.
4º. Distribucion de premios para estudios castellanos.
5º. Diálogo castellano declamado por D. y E.
6º. Diálogo ingles declamado por D. y E.
7º. Distribucion de premios para estudios de ingles.
8º. Diálogo ingles declamado por L. y V.
9º. Declamacion en castellano por D.
10º. Diálogo ingles declamado por F. y T.
11º. "My country" cantado por los alumnos.

In addition to the public schools a nautical school was opened in December last in the Tondo district of Manila, under the management of an American naval officer, for training graduates qualified as mariners to sooner or later become officers and captains of merchant vessels and to give them a thorough training in the English language. This promises to be a very useful institution.

In closing his letter to me Mr. Anderson says:

On June 1, 1899, when I was placed in charge of this work as the superintendent of public instruction in Manila, the insurrection was still uncrushed and but little attention could be given to the question of education for the rest of the islands; but as the army advanced and new territory became safe and peaceful, schools were started and advice and a source of supply sought in this office by the outside commanding officers, so that the work grew to be a great one, reaching from the north end of Luzon to the island of Mindanao. The schools have multiplied, but most of the work is in its merest infancy. Capt. Albert Todd has been placed in temporary charge as the superintendent of public instruction for the Philippine Islands, so that it now leaves me as superintendent for Manila only, which has been my technical position all the time. But I still have sufficient familiarity with the whole work to state that the people themselves are calling loudly for education and the best of it, with plenty of English, and that every effort is now being put forth to extend to all the towns and hamlets of the entire archipelago the same broad principles and measures of true American education that have already been in vogue in Manila for over a year. The last official letter I received from the outside districts told me that 180 schools would be in operation in the island of Mindanao alone. This is a fair sample of what is coming in the now well-nigh pacified Philippines.

Dr. Frederick W. Atkinson, formerly principal of the Springfield (Mass.) High School, has been appointed superintendent of public instruction in the Philippines, and is now on his way to his post of duty. Before embarking he said to a reporter:

In establishing a permanent educational system in the Philippines the industrial plan will probably be found the most effective at the beginning.

He will find on his arrival in Manila that an excellent foundation has been laid by the efforts of Father McKinnon, formerly chaplain of a California regiment, who took the first steps toward the establishment of a public school system, and by Mr. George P. Anderson, who succeeded him and has ably and successfully carried on the work.

It is to be hoped that a thorough pacification of the islands will soon enable Dr. Atkinson to extend an educational revivification to all the islands.

No nobler work could be allotted to any man than to spend his life in dispelling the clouds of ignorance and conferring on these long-neglected people the civilizing influences of a generous education.

III.—STATISTICS OF STATE SCHOOL SYSTEMS.

TABLE 1.—*The total population, the school population, and the adult male population.*

State or Territory	Estimated total population in 1899.	The school population.				Estimated number of male persons 21 years and over in 1899.
		Estimated number of children 5 to 18 years of age in 1899.			Percentage of boys.	
		Boys.	Girls.	Total.		
1	2	3	4	5	6	7
United States	73,960,220	11,019,763	10,811,011	21,830,774	50.48	20,114,080
North Atlantic Division	29,567,000	2,617,403	2,596,961	5,214,364	50.20	5,968,400
South Atlantic Division	10,001,40[illegible]	1,714,320	1,685,990	3,400,310	50.42	2,279,140
South Central Division	13,324,400	2,341,590	2,279,910	4,621,500	50.68	3,076,400
North Central Division	25,993,500	3,847,060	3,763,070	7,610,130	50.55	7,223,400
Western Division	4,075,920	499,390	485,080	984,470	50.73	1,566,740
North Atlantic Division:						
Maine	656,800	81,650	79,950	161,600	50.53	199,900
New Hampshire	405,300	45,210	45,110	90,320	50.06	127,100
Vermont	329,100	41,820	39,310	81,130	51.55	100,700
Massachusetts	2,742,000	312,400	314,600	627,000	49.83	814,400
Rhode Island	419,700	50,930	51,370	102,300	49.77	121,500
Connecticut	889,100	105,100	104,200	209,300	50.24	267,000
New York	6,962,000	854,500	856,500	1,711,000	49.95	2,054,000
New Jersey (1898)	1,837,000	*a* 236,293	*a* 230,421	*a* 466,714	50.62	525,800
Pennsylvania	6,324,000	889,500	875,500	1,765,000	50.38	1,758,000
South Atlantic Division:						
Delaware (1892)	173,200	24,750	24,080	48,830	50.69	48,900
Maryland	1,221,000	179,400	178,200	357,600	50.18	317,200
District of Columbia	293,200	36,120	38,260	74,380	48.55	82,040
Virginia	1,718,000	295,800	291,100	586,900	50.41	393,000
West Virginia (1898)	866,000	147,200	144,000	291,200	50.56	205,900
North Carolina	1,771,000	316,500	309,700	626,200	50.54	375,100
South Carolina	1,312,000	245,900	241,300	487,200	50.48	268,500
Georgia	2,132,000	382,800	374,100	756,900	50.57	461,900
Florida (1898)	515,000	85,850	85,250	171,100	50.17	126,600
South Central Division:						
Kentucky (1897)	2,016,000	333,700	326,800	660,500	50.53	489,000
Tennessee	1,958,000	341,000	329,000	670,000	50.89	445,800
Alabama	1,798,000	325,300	316,600	641,900	50.68	385,900
Mississippi (1897)	1,448,000	269,800	261,500	531,300	50.78	304,400
Louisiana	1,421,000	242,900	240,700	483,600	50.22	318,200
Texas	3,014,000	535,400	522,600	1,058,000	50.61	722,600
Arkansas	1,314,000	238,000	230,900	468,900	50.75	300,400
Oklahoma	355,460	55,490	51,810	107,300	51.73	110,100
Indian Territory						
North Central Division:						
Ohio	3,953,000	567,200	554,800	1,122,000	50.57	1,094,600
Indiana	2,262,000	337,100	331,000	668,100	50.45	613,900
Illinois	5,062,000	720,200	710,800	1,431,000	50.34	1,419,600
Michigan	2,286,000	320,100	314,700	634,800	50.42	674,200
Wisconsin (1898)	2,107,000	317,100	312,400	629,500	50.37	576,600
Minnesota	1,831,000	267,900	262,800	530,700	50.48	529,800
Iowa	2,101,000	321,900	312,000	633,900	50.79	571,800
Missouri	3,063,000	480,700	472,100	952,800	50.45	806,800
North Dakota (1898)	352,300	49,700	46,480	96,180	51.67	107,900
South Dakota	456,200	68,360	65,240	133,600	51.16	134,300
Nebraska	1,188,000	182,800	175,000	357,800	51.08	338,300
Kansas (1898)	1,329,000	214,000	205,750	419,750	50.98	356,800
Western Division:						
Montana (1898)	245,900	22,440	21,980	44,420	50.52	121,700
Wyoming (1898)	112,300	12,400	11,550	23,950	51.78	50,029
Colorado	617,300	68,680	67,120	135,800	50.56	247,000
New Mexico	185,400	26,570	25,450	52,020	51.07	54,250
Arizona	91,740	11,780	11,540	23,320	50.52	36,460
Utah	208,800	44,130	43,100	87,230	50.59	70,430
Nevada (1898)	41,080	4,560	4,420	8,980	50.73	18,810
Idaho (1898)	157,200	21,880	20,670	42,550	51.43	58,670
Washington (1898)	472,100	54,850	52,250	107,100	51.20	198,500
Oregon	378,100	51,500	50,400	101,900	50.52	134,700
California	1,506,000	189,600	176,600	357,200	50.54	576,200

a State school census.

TABLE 2.—*Data from United States Census reports, of use in studying educational conditions.*

State or Territory.	Number of children 5 to 18 years of age to every 100 persons of the total population.			Number of adult males to every 100 children 5 to 18 years of age in 1890.	Percentage of white children 5 to 18 years of age that were of foreign birth or parentage in 1890.	Percentage of foreign of the total population in 1890.	Population to the square mile in 1890.	Percentage of the population in cities of 8,000 inhabitants and over in 1890.	True valuation of real and personal property per capita in 1890.
	1870.	1880.	1890.						
1	2	3	4	5	6	7	8	9	10
United States	31.27	30.04	29.61	91.4	33.5	14.77	21	29.20	$1,036
North Atlantic Division	28.30	26.87	25.39	114.4	45.8	22.34	107	51.81	1,232
South Atlantic Division	33.02	32.24	34.04	66.8	6.6	2.35	33	16.03	579
South Central Division	33.92	33.13	34.76	65.9	8.6	2.93	19	10.45	569
North Central Division	32.40	30.63	29.33	94.6	41.5	18.16	30	25.91	1,129
Western Division	25.57	25.13	24.33	156.7	44.7	25.46	3	29.99	2,250
North Atlantic Division:									
Maine	28.01	25.71	24.60	123.7	25.0	11.94	22	19.72	740
New Hampshire	24.75	22.80	22.29	140.8	38.4	19.21	42	27.37	863
Vermont	27.18	25.96	24.65	124.1	33.4	13.26	36	7.93	799
Massachusetts	25.51	23.98	22.87	129.9	60.5	29.35	278	69.90	1,252
Rhode Island	25.66	24.64	24.38	118.7	62.4	30.77	318	78.89	1,459
Connecticut	25.86	24.97	23.54	127.6	54.6	24.60	154	51.63	1,119
New York	28.09	26.32	24.57	120.1	54.8	26.19	126	60.02	1,430
New Jersey	29.01	27.98	26.04	109.9	48.3	22.77	194	54.04	1,000
Pennsylvania	30.55	29.43	27.92	99.6	32.3	16.08	117	40.93	1,177
South Atlantic Division:									
Delaware	31.84	29.11	28.19	100.1	17.3	7.81	86	36.46	1,043
Maryland	31.30	29.89	29.28	88.7	24.4	9.05	106	44.65	1,041
District of Columbia	27.01	26.87	25.38	110.3	26.3	8.15	3,840	100.00	1,491
Virginia	32.39	32.43	34.16	67.0	2.8	1.11	41	13.40	521
West Virginia	34.13	33.37	33.62	70.7	5.9	2.48	31	6.95	575
North Carolina	33.60	32.30	35.35	59.9	.7	.23	33	3.87	361
South Carolina	33.15	33.21	37.14	55.1	2.3	.54	38	6.86	348
Georgia	34.42	33.17	35.50	61.0	2.1	.66	31	10.84	464
Florida	34.05	32.82	33.23	74.0	11.5	5.86	7	12.02	995
South Central Division:									
Kentucky	34.41	33.14	32.76	74.0	8.7	3.19	46	14.87	631
Tennessee	34.13	33.44	34.22	66.5	2.9	1.13	42	11.45	502
Alabama	34.40	33.37	35.70	60.1	3.2	.98	29	5.89	412
Mississippi	33.70	34.12	36.69	57.3	3.1	.62	28	2.64	352
Louisiana	31.11	31.93	34.04	65.8	17.8	4.45	25	23.65	443
Texas	34.80	32.60	35.10	68.3	16.9	6.84	9	10.08	942
Arkansas	34.16	33.15	35.68	64.0	3.5	1.26	21	4.89	403
Oklahoma	.....	.....	30.18	102.7	9.6	4.43	2	.....	781
North Central Division:									
Ohio	31.74	29.75	28.37	97.6	30.4	12.51	90	31.57	1,076
Indiana	33.75	31.37	29.54	91.9	17.8	6.67	61	18.27	956
Illinois	32.24	30.66	28.26	99.2	47.0	22.01	68	38.83	1,324
Michigan	30.28	28.37	27.77	106.2	56.1	25.97	36	26.08	1,001
Wisconsin	33.57	30.85	29.88	91.6	72.4	30.78	31	25.17	1,087
Minnesota	32.45	30.43	28.93	99.8	76.4	35.90	16	28.37	1,300
Iowa	33.06	31.40	30.17	90.2	42.6	16.95	34	14.08	1,196
Missouri	33.57	32.35	31.11	84.7	22.5	8.77	39	26.27	895
North Dakota	23.74	24.34	27.30	112.2	80.3	44.58	3	.....	1,894
South Dakota			29.29	100.5	61.2	27.69	4	3.10	1,293
Nebraska	28.07	29.88	30.12	94.5	42.1	19.13	14	24.46	1,205
Kansas	29.83	31.73	31.59	85.0	26.4	10.36	17	11.62	1,261
Western Division:									
Montana	10.20	17.10	18.06	274.0	49.4	32.61	1	18.58	3,429
Wyoming	9.39	18.06	21.33	208.8	47.2	24.57	1	19.26	2,797
Colorado	22.47	18.72	22.60	181.8	36.3	20.38	4	37.07	2,780
New Mexico	31.90	29.85	28.07	104.3	13.2	7.33	1	.....	1,507
Arizona	16.78	19.59	25.42	156.4	57.1	31.52	1	.....	3,168
Utah	35.05	33.39	32.45	80.7	66.6	25.52	3	28.73	1,681
Nevada	12.56	18.22	21.87	209.3	60.8	32.14	0½	18.60	3,941
Idaho	11.30	22.98	27.07	137.9	41.1	20.69	1	.....	2,464
Washington	26.96	27.19	22.69	185.3	39.3	25.76	5	28.27	2,177
Oregon	32.34	28.63	26.96	132.1	27.9	18.27	3	18.14	1,882
California	24.48	25.03	23.72	161.3	51.8	30.32	8	40.98	2,097

TABLE 3.—*School ages in the several States—State school censuses.*

State or Territory.	Age for free attendance at the public schools.	Age for compulsory attendance.	School census.				
			Date of latest school census reported.	Age of children enumerated.	Number of children enumerated.		
					Boys.	Girls.	Total.
1	2	3	4	5	6	7	8
North Atlantic Division:							
Maine	5-21	7-17	1899	4-21	.....	.....	210,192
New Hampshire	Over 5	8-14	1899	5-16	34,903	34,880	69,783
Vermont	5-21	8-15	1899	5-21	45,697	43,699	89,396
Massachusetts	No limit.	7-14	1898	5-15	.....	.....	449,099
Rhode Island	Over 5	7-15	1899	*a* 5-15	39,929	39,896	79,825
Connecticut	Over 5	4-16	1898	4-16	.....	.....	189,717
New York	5-21	8-16	1899	5-18	777,570	772,509	1,550,079
New Jersey (1898)	5-20	7-15	1898	5-18	236,293	230,421	466,714
Pennsylvania	6-21	6-16	.....	6-16	.....	.....	.....
South Atlantic Division:							
Delaware (1893)	6-21	(*b*)	1893	6-21	15,827	17,758	33,585
Maryland	5-20	(*b*)	(*c*)	.....	.....	.....	.....
District of Columbia	6-18	6-15	1897	6-18	.....	.....	60,306
Virginia	5-21	(*b*)	1895	5-21	339,725	326,140	665,865
West Virginia (1898)	6-21	8-14	1898	6-21	157,345	145,009	302,354
North Carolina	6-21	(*b*)	.....	6-21	303,712	303,675	607,387
South Carolina	6-21	(*b*)	(*c*)	.....	.....	.....	.....
Georgia	6-18	(*b*)	1898	6-18	338,039	327,831	669,870
Florida (1898)	6-21	(*b*)	1896	6-21	78,666	73,932	152,598
South Central Division:							
Kentucky (1897)	6-20	7-14	1896	6-20	375,259	360,846	736,105
Tennessee	6-21	.....	1899	6-21	385,290	374,872	760,162
Alabama	7-21	(*b*)	1899	7-21	.....	.....	634,061
Mississippi (1897)	5-21	(*b*)	1896	5-21	270,789	281,678	552,467
Louisiana	6-18	(*b*)	1899	6-18	.....	.....	404,757
Texas	8-17	(*b*)	1899	8-17	360,470	345,580	706,050
Arkansas	6-21	(*b*)	1899	6-21	240,396	232,021	472,417
Oklahoma	6-21	(*b*)	1899	6-21	59,560	55,176	114,736
Indian Territory	.....	.....	.....	.....	.....	.....	.....
North Central Division:							
Ohio	6-21	8-15, 16	1899	6-21	620,553	589,182	1,209,735
Indiana	6-21	*a* 6-14	1899	6-21	391,353	364,345	755,698
Illinois	6-21	7-14	1899	6-21	775,439	763,706	1,539,145
Michigan	5-20	*d* 7-16	1898	5-20	361,271	352,469	713,740
Wisconsin (1898)	4-20	7-13	1898	4-20	359,198	349,337	708,535
Minnesota	5-21	8-16	(*c*)	.....	.....	.....	.....
Iowa	5-21	(*b*)	1899	5-21	369,135	358,640	727,775
Missouri	6-20	(*b*)	1899	6-20	500,813	480,909	981,722
North Dakota (1898)	6-20	8-14	1897	6-20	39,111	37,540	76,651
South Dakota	6-21	8-14	1899	6-21	61,375	58,204	119,579
Nebraska	5-21	8-14	1899	5-21	190,659	182,105	372,764
Kansas (1898)	5-21	8-14	1898	5-21	251,562	244,387	495,949
Western Division:							
Montana (1898)	6-21	8-14	1898	6-21	25,190	24,308	49,498
Wyoming (1898)	6-21	7-16	(*c*)	.....	.....	.....	.....
Colorado	6-21	8-14	1899	6-21	72,297	70,169	142,466
New Mexico (1898)	5-20	8-16	1898	8-16	26,899	23,768	50,667
Arizona	6-18	8-14	1899	6-18	10,143	9,680	19,823
Utah	6-18	8-14	1899	6-18	42,406	42,013	84,419
Nevada (1898)	6-18	8-14	1898	6-18	4,535	4,461	8,996
Idaho (1898)	5-21	8-14	1898	5-21	23,703	24,257	47,960
Washington (1898)	6-21	8-15	1898	5-21	60,373	58,118	118,491
Oregon	6-21	8-14	1899	4-20	66,529	65,879	132,408
California	6-20	*e* 6-17	1899	6-17	176,961	173,163	350,124

a Inclusive.
b No compulsory attendance law.
c No school census.
d 8-16 in the country.
e Law defective and inoperative.

TABLE 4.—*Number of pupils enrolled in the common schools at different dates, and the relation of the enrollment to the school population.*

State or Territory.	Number of different pupils of all ages enrolled during the school year (excluding duplicate enrollments).				Per cent of school population (i. e., of children 5 to 18 years of age) enrolled.			
	1870–71.	1879–80.	1889–90.	1898–99.	1870–71.	1879–80.	1889–90.	1898–99.
1	2	3	4	5	6	7	8	9
United States	7,561,582	9,867,505	12,722,581	15,138,715	61.45	65.50	68.61	69.34
North Atlantic Division	2,743,344	2,930,345	3,112,622	3,621,226	77.95	75.17	70.45	69.44
South Atlantic Division	603,619	1,242,811	1,785,486	2,141,132	30.51	50.74	59.22	62.97
South Central Division	767,839	1,371,975	2,293,579	2,938,744	34.17	46.43	60.14	63.59
North Central Division	3,300,660	4,033,828	5,015,217	5,685,866	76.87	75.84	76.46	74.71
Western Division	146,120	288,546	515,677	751,747	54.77	64.96	70.01	76.35
North Atlantic Division:								
Maine	a 152,600	149,827	139,676	131,588	a 87.35	89.80	85.88	81.45
New Hampshire	71,957	64,341	59,813	65,193	91.31	81.32	71.28	72.18
Vermont	b 65,384	75,238	b 65,608	66,429	.....	87.21	.....	81.88
Massachusetts	273,661	306,777	371,492	471,977	72.34	71.76	72.56	75.28
Rhode Island	a 34,000	40,604	52,774	64,537	a 59.24	59.59	62.65	63.07
Connecticut	113,588	119,694	126,505	151,325	80.83	76.97	72.02	72.32
New York	1,028,110	1,031,593	1,042,160	1,179,351	82.98	77.10	70.71	68.93
New Jersey	169,430	204,961	234,072	c 304,680	63.20	64.77	62.21	c 65.29
Pennsylvania	834,614	937,310	1,020,522	1,186,146	76.35	74.37	69.53	67.21
South Atlantic Division:								
Delaware	20,058	27,823	31,434	d 33,174	50.04	65.20	66.19	d 67.93
Maryland	115,683	162,431	184,251	229,332	46.70	58.13	60.37	64.12
District of Columbia	15,157	26,439	36,906	45,560	41.60	55.40	63.10	61.24
Virginia	131,088	220,736	342,269	358,825	32.34	45	60.51	61.04
West Virginia	76,999	142,850	193,064	c 236,188	49.47	69.21	75.27	c 81.10
North Carolina	a 115,000	252,612	322,533	390,616	a 31.23	55.87	56.39	62.39
South Carolina	66,056	134,072	201,260	269,875	27.28	40.56	47.08	55.40
Georgia	49,578	236,533	381,297	469,107	11.89	46.24	58.45	61.99
Florida	14,000	39,315	92,472	c 108,455	21.21	44.16	71.10	c 63.37
South Central Division:								
Kentucky	e 178,457	e 276,000	399,660	f 501,893	.....	.....	65.64	f 76.00
Tennessee	a 140,000	300,217	447,950	499,845	a 32	58.21	74.05	74.62
Alabama	141,312	179,490	301,615	433,733	40.36	42.60	55.83	67.58
Mississippi	117,000	236,654	334,158	f 367,579	40.60	61.29	70.62	f 69.17
Louisiana	57,639	77,642	120,253	196,169	24.78	25.87	31.58	40.57
Texas	63,504	a 220,000	466,872	b 552,503	21	a 42.40	59.50	b 52.22
Arkansas	69,927	81,972	223,071	301,387	40.29	30.81	55.41	64.27
Oklahoma	.....	.....	.....	85,635	.....	.....	.....	79.84
Indian Territory	.....	.....	.....	.....	.....	.....	.....	.....
North Central Division:								
Ohio	719,372	729,499	797,439	828,500	84.04	76.69	76.54	73.88
Indiana	450,057	511,283	512,955	556,651	78.64	82.39	79.21	83.33
Illinois	672,787	704,041	778,319	945,143	81.01	74.61	71.97	66.07
Michigan	292,466	362,556	427,032	498,665	79.66	78.08	73.45	78.56
Wisconsin	265,285	299,457	351,723	c 435,914	73.92	73.78	69.77	c 69.25
Minnesota	113,983	180,248	280,960	384,063	75.92	75.87	74.59	72.38
Iowa	341,938	426,057	493,267	554,992	84.44	83.52	85.51	87.56
Missouri	330,070	482,986	620,314	668,018	56.03	68.85	74.43	70.12
North Dakota	a 1,660	13,718	35,543	c 67,375	a 39.26	41.68	71.26	c 70.05
South Dakota			78,043	98,546			81.04	73.73
Nebraska	23,265	92,549	240,300	277,765	58.79	68.48	75.35	77.62
Kansas	89,777	231,434	399,322	c 370,240	74.22	73.23	88.56	c 88.20
Western Division:								
Montana	a 1,657	4,270	16,980	c 35,070	70.24	63.77	71.14	c 78.94
Wyoming	a 450	2,907	7,052	c 13,042	a 45.34	77.44	54.46	c 54.46
Colorado	4,357	22,119	65,490	108,816	42.28	60.82	72.20	80.12
New Mexico	a 1,320	4,755	18,215	27,173	a 4.42	13.32	42.25	52.24
Arizona	0	4,212	7,989	15,898	0.00	53.16	52.72	68.17
Utah	16,992	24,326	37,279	71,906	53.26	50.61	55.26	82.52
Nevada	3,106	9,045	7,387	c 7,348	53.97	79.73	73.80	c 81.78
Idaho	906	5,834	14,311	c 32,696	46.06	77.85	62.66	c 76.82
Washington	a 5,000	14,780	55,964	c 97,916	a 69	72.36	70.58	c 91.42
Oregon	21,000	37,533	63,254	88,485	67.73	75.02	74.78	86.80
California	91,332	158,765	221,756	253,397	63.63	73.37	77.38	70.95

a Aproximately.
b Includes pupils of legal school age only.
c In 1897–98.
d In 1891–92.
e Highest number enrolled.
f In 1896–97.

TABLE 5.—*The school enrollment of 1898–99 classified by sex; per cent of the male and of the female school population enrolled; per cent of the total population enrolled.*

State or Territory.	Number of different pupils of all ages enrolled.			Per cent of the school population (5 to 18 years of age) enrolled.			Per cent of the total population enrolled.
	Male.	Female.	Total.	Male.	Female.	Male and female.	
1	2	3	4	5	6	7	8
United States	a7,671,918	a7,466,797	15,138,715	69.62	69.07	69.34	20.47
North Atlantic Division	a1,827,792	a1,793,434	3,621,226	69.82	69.06	69.44	18.61
South Atlantic Division	a1,075,301	a1,065,831	2,141,132	62.72	63.21	62.97	21.41
South Central Division	a1,490,069	a1,448,675	2,938,744	63.64	63.55	63.59	22.05
North Central Division	a2,897,333	a2,788,533	5,685,866	75.32	74.11	74.71	21.87
Western Division	a381,423	a370,324	751,747	76.37	76.34	76.35	18.44
North Atlantic Division:							
Maine			131,588			81.45	20.04
New Hampshire	33,011	32,182	65,193	73.02	71.33	72.18	16.09
Vermont	32,775	33,654	66,429	78.36	85.60	81.88	20.19
Massachusetts			471,977			75.28	17.21
Rhode Island	32,518	32,019	64,537	63.86	62.33	63.07	15.37
Connecticut			151,325			72.32	17.02
New York	597,289	582,062	1,179,351	69.90	67.95	68.93	16.94
New Jersey (1897–98)	153,310	151,370	304,680	64.88	65.69	65.29	16.58
Pennsylvania	597,855	588,291	1,186,146	67.22	67.20	67.21	18.76
South Atlantic Division:							
Delaware (1891–92)			33,174			67.93	19.15
Maryland			229,332			64.12	18.77
District of Columbia	21,385	24,175	45,560	59.21	63.17	61.24	15.55
Virginia	179,199	179,626	358,825	60.57	61.71	61.04	20.85
West Virginia (1897–98)	124,354	111,834	236,188	84.47	77.64	81.10	27.27
North Carolina	198,710	191,906	390,616	62.79	61.96	62.39	22.05
South Carolina	130,915	138,960	269,875	53.24	57.60	55.40	20.57
Georgia	a234,129	a234,978	469,107	a61.16	a62.81	61.99	22.01
Florida (1897–98)	54,748	53,707	108,455	63.77	63.03	63.37	21.06
South Central Division:							
Kentucky (1896–97)	256,520	245,373	501,893	76.86	75.10	76	24.89
Tennessee	254,278	245,567	499,845	74.56	74.63	74.62	25.54
Alabama			433,733			67.58	24.13
Mississippi (1896–97)	a184,250	a183,329	367,579	a68.30	a70.13	69.17	25.38
Louisiana	99,917	96,252	196,169	41.15	39.98	40.57	13.81
Texas *b*	276,489	276,014	552,503	51.64	52.81	52.22	18.32
Arkansas	154,263	147,124	301,387	64.83	63.73	64.27	22.94
Oklahoma	44,472	41,163	85,635	80.15	79.45	79.84	24.10
Indian Territory							
North Central Division:							
Ohio	423,369	405,131	828,500	74.65	73.03	73.88	20.96
Indiana	284,531	272,120	556,651	84.42	82.22	83.33	24.61
Illinois	477,990	467,153	945,143	66.37	65.70	66.07	18.67
Michigan	251,565	247,100	498,665	78.60	78.52	78.56	21.81
Wisconsin (1897–98)	221,838	214,076	435,914	69.97	68.53	69.25	20.69
Minnesota			384,063			72.38	20.94
Iowa			554,992			87.56	26.42
Missouri	337,443	330,575	668,018	70.20	70.02	70.12	21.81
North Dakota (1897–98)	35,271	32,104	67,375	70.97	69.07	70.05	19.13
South Dakota	50,993	47,547	98,540	74.60	72.88	73.73	21.60
Nebraska	141,417	136,348	277,765	77.38	77.92	77.62	23.38
Kansas (1897–98)	194,352	175,888	370,240	90.80	85.48	88.20	27.87
Western Division:							
Montana (1897–98)			35,070			78.94	14.26
Wyoming (1897–98)	6,643	6,399	13,042	53.56	55.40	54.46	11.62
Colorado	54,249	54,567	108,816	79	81	80.12	17.63
New Mexico	a15,460	a11,713	27,173	58.20	46.03	52.24	14.66
Arizona	8,246	7,652	15,898	70	66.31	68.17	17.33
Utah	36,463	35,443	71,906	82.62	82.22	82.52	26.78
Nevada (1897–98)	3,885	3,462	7,348	85.26	78.32	81.78	17.89
Idaho (1897–98)	a15,692	a17,004	32,696	71.72	82.24	76.82	20.79
Washington (1897–98)	49,908	48,008	97,916	91	91.88	91.42	20.74
Oregon	44,801	43,684	88,485	87	86.68	86.80	23.40
California	128,296	125,101	253,397	71.05	70.85	70.95	16.83

a Approximately.

b Includes pupils of legal school age only (8–17).

TABLE 6.—*Per cent of the school population (i. e., children 5 to 18 years of age) enrolled in the public schools, for a period of years.*

Year.	United States.	North Atlantic Division.	South Atlantic Division.	South Central Division.	North Central Division.	Western Division.
1870–71	61.45	77.95	30.51	34.17	76.87	54.77
1871–72	62.20	77.33	32.27	37.94	77.04	54.43
1872–73	62.36	76.79	35.86	38.67	75.97	57.52
1873–74	64.49	77.77	42.10	40.82	76.98	61.04
1874–75	65.54	78.59	44.61	42.47	77.54	64.39
1875–76	64.70	78.55	46.72	37.36	77.05	66.37
1876–77	63.92	76.83	47.02	38.51	75.60	66.12
1877–78	65.75	77.09	48.85	43.50	77.38	66.26
1878–79	64.64	76.18	46.72	44.71	75.28	65.63
1879–80	65.50	75.17	50.74	46.43	75.84	64.96
1880–81	65.03	74.28	51.49	47.03	74.59	64.82
1881–82	65.03	74.56	51.90	47.02	74.15	65.93
1882–83	66.39	74.15	54.20	50.68	75.13	67.05
1883–84	66.96	72.83	56.25	53.59	75.06	68.01
1884–85	67.96	73.23	57.17	56.57	75.46	68.53
1885–86	68.14	72.63	57.68	56.82	76.08	68.03
1886–87	67.98	72.23	58.98	56.21	75.77	67.97
1887–88	68.33	71.60	58.68	58.67	75.96	68.53
1888–89	68.20	70.60	58.40	58.28	76.63	69.39
1889–90	68.61	70.45	59.22	60.14	76.46	70.01
1890–91	69.03	69.85	59.80	62.51	76.00	73.28
1891–92	69.06	69.98	58.88	63.14	75.85	75.32
1892–93	68.72	68.64	60.93	62.39	75.52	73.51
1893–94	69.50	69.70	61.73	63.55	75.93	73.36
1894–95	69.68	71.02	61.07	61.97	76.52	76.70
1895–96	69.48	69.95	60.84	62.92	76.15	77.00
1896–97	70.20	70.00	62.68	64.76	76.22	76.66
1897–98 *a*	70.08	70.38	63.63	64.41	75.25	76.73
1898–99 *a*	69.34	69.44	62.97	63.59	74.71	76.35

a Subject to correction.

TABLE 7.—*The average daily attendance at various periods, and its relation in 1898–99 to the enrollment.*

State or Territory.	Average number of pupils actually present at school each day.				Number in daily attendance for each 100 enrolled in 1898–99.
	1870–71.	1879–80.	1889–90.	1898–99.	
1	2	3	4	5	6
United States	4,545,317	6,144,143	8,153,635	10,389,407	68.63
North Atlantic Division	1,627,268	1,824,487	2,036,459	2,617,693	72.29
South Atlantic Division	368,111	776,798	1,126,683	1,293,526	60.42
South Central Division	535,632	902,767	1,467,649	1,983,624	67.52
North Central Division	1,811,720	2,451,167	3,188,732	3,957,198	69.60
Western Division	102,646	188,924	334,112	537,366	71.50
North Atlantic Division:					
Maine	100,392	103,115	98,364	97,706	74.23
New Hampshire	48,150	48,966	41,526	47,783	78.21
Vermont	*a* 44,100	48,606	45,887	48,014	72.26
Massachusetts	201,750	233,127	273,910	360,317	76.35
Rhode Island	22,485	27,217	33,905	46,087	71.42
Connecticut	62,683	73,546	83,656	109,951	72.66
New York	493,648	573,089	642,984	849,420	72.03
New Jersey	86,812	115,194	133,286	*b* 200,278	*b* 65.73
Pennsylvania	567,188	601,627	682,941	858,177	72.34
South Atlantic Division:					
Delaware	*a* 12,700	17,439	19,649	*ac* 22,693	*ac* 68.41
Maryland	56,435	85,778	102,351	132,685	57.86
District of Columbia	10,261	20,637	28,184	34,632	74.70
Virginia	77,462	128,404	198,280	203,136	56.72
West Virginia	51,836	91,604	121,700	*b* 159,768	*b* 67.66
North Carolina	*a* 73,000	170,100	203,100	207,310	53.06
South Carolina	*a* 44,700	*a* 90,600	147,799	194,418	72.03
Georgia	31,377	145,100	240,791	265,480	56.58
Florida	*a* 10,900	27,046	64,819	*b* 74,004	*b* 68.21

a Approximately. *b* In 1897–98. *c* In 1891–92.

TABLE 7.—*The average daily attendance at various periods, and its relation in 1898–99 to the enrollment*—Continued.

State or Territory.	Average number of pupils actually present at school each day.				Number in daily attendance for each 100 enrolled in 1898–99.
	1870–71.	1879–80.	1889–90.	1898–99.	
1	2	3	4	5	6
South Central Division:					
Kentucky	120,866	178,000	225,789	*a* 308,697	*a* 61.51
Tennessee	*b* 89,000	208,528	323,548	352,734	70.57
Alabama	107,666	117,978	182,467	341,138	78.67
Mississippi	99,000	156,761	207,704	*a* 223,960	*a* 60.91
Louisiana	*b* 40,500	*b* 54,800	87,536	146,323	74.58
Texas	*b* 41,000	*b* 132,000	291,941	*c* 370,055	66.99
Arkansas	*b* 46,600	*b* 54,700	*b* 148,714	186,177	61.77
Oklahoma				*b* 54,600	*b* 63.75
Indian Territory					
North Ceniral Division:					
Ohio	432,452	476,279	549,269	613,337	74.03
Indiana	295,071	321,659	342,275	424,725	76.30
Illinois	341,686	431,638	538,310	726,782	76.90
Michigan	*b* 193,000	*b* 240,000	*b* 282,000	*b* 350,000	*b* 70.19
Wisconsin	*b* 132,000	*b* 156,000	200,457	*bd* 287,000	*bd* 65.84
Minnesota	50,694	*b* 78,400	127,025	237,145	61.74
Iowa	211,562	259,836	306,309	364,409	65.66
Missouri	187,024	*b* 281,000	384,627	416,364	62.33
North Dakota	*b* 1,040	8,520	20,694	*d* 41,155	*d* 61.09
South Dakota			48,327	69,923	70.96
Nebraska	*b* 14,300	60,156	146,139	169,424	61.01
Kansas	52,891	137,669	243,300	*d* 256,934	*d* 69.39
Western Division:					
Montana	*b* 1,100	*b* 3,000	10,596	*bd* 23,400	*bd* 66.73
Wyoming	*b* 250	1,920	*b* 4,700	*bd* 8,700	*bd* 66.70
Colorado	2,611	12,618	38,715	69,065	63.47
New Mexico	*b* 880	3,150	*b* 13,000	*b* 17,400	*b* 64.02
Arizona	0	2,847	4,702	9,396	59.10
Utah	12,819	17,178	20,967	52,208	72.53
Nevada	*b* 1,800	5,401	5,064	*d* 4,982	*d* 67.80
Idaho	*b* 600	3,863	*b* 9,500	*d* 23,541	*d* 72.01
Washington	*b* 3,300	10,546	36,946	*d* 64,192	*d* 65.56
Oregon	*b* 15,000	27,435	43,333	61,234	69.22
California	64,286	100,966	146,589	203,248	80.20

a In 1896–97.
b Approximately.
c Includes pupils of legal school age only (8–17).
d In 1897–98.

Method of ascertaining average attendance.—The average daily attendance during a year (which is the average number of pupils actually present each day the schools were in session) may be computed as follows:

First, for a single school: Add together the number of pupils present each school day during the year, and divide the sum (which is the "aggregate attendance in days") by the number of such school days.

Second, for a group of schools having the same number of school days in the year (as the schools of most cities have): Divide the combined aggregate attendance in days of all the schools by the number of school days in the year.

Third, for a system of schools having different lengths of school year (as, for instance, those of a county): Add together the average attendance of the component schools and groups of the system, as ascertained by the foregoing rule. For larger systems, as those of a State or of the United States, the summing-up process is continued in the same way.

In a system of schools such as is specified under the heading "Third," the average number of days in the school year for the whole system is found by dividing the combined aggregate attendance in days of all the schools of the system by the average attendance as ascertained by the rule given. See observations on Table 8.

TABLE 8.—*(1) Average length of school term at various periods; (2) aggregate number of days' schooling given to all pupils; (3) the same compared with the school population and the enrollment (columns 7 and 8).*

State or Territory.	Average number of days the schools were kept during the year. *a*				Aggregate number of days' schooling given in 1898–99.	Average number of days' schooling given for every child 5 to 18 years of age in 1898–99.	Average number of days attended by each pupil enrolled in 1898–99.
	1870–71.	1879–80.	1889–90.	1898–99.			
1	2	3	4	5	6	7	8
United States	132.1	130.3	134.7	143.2	1,488,076,102	68.2	98.3
North Atlantic Division	152.0	159.2	166.6	174.0	455,388,717	87.3	125.8
South Atlantic Division	97.4	92.4	99.9	112.6	145,654,202	42.8	68.1
South Central Division	91.6	79.2	88.2	103.2	204,778,536	44.3	69.7
North Central Division	133.9	139.8	148.0	152.2	602,323,273	79.1	105.9
Western Division	119.2	129.2	135.0	148.7	79,931,374	81.2	103.4
North Atlantic Division:							
Maine	98	109	112	126	12,310,956	76.2	93.5
New Hampshire	70	105.3	117.7	*b* 135.3	*c* 6,458,275	*c* 71.5	*c* 99.1
Vermont	115.6	125.5	136	156	7,490,184	92.3	112.8
Massachusetts	169	177	177	188	67,739,596	108.1	143.5
Rhode Island	170	184	188	187	8,735,880	85.4	135.4
Connecticut	172.4	179	182.5	189.15	20,797,232	99.4	137.4
New York	176	178.5	186.5	177	155,907,620	91.1	132.2
New Jersey	178	192	192	*b* 185	*b* 38,125,748	*b* 81.7	*b* 125.1
Pennsylvania	127.2	133.4	147.6	160.6	137,823,225	78.1	116.2
South Atlantic Division:							
Delaware	132	158	166	*cd* 160	*cd* 3,640,881	*cd* 74.6	*cd* 109.8
Maryland	183	187	184	188	24,944,780	69.8	108.8
District of Columbia	200	193	178	179.5	6,108,744	82.1	134.1
Virginia	93.2	112.8	118.2	119	24,173,184	41.2	67.5
West Virginia	76.8	90	97	*b* 111	*b* 17,772,190	*b* 61	*b* 75.3
North Carolina	*c* 50	50	59.25	68.3	14,159,273	22.6	36.3
South Carolina	*c* 100	70	69.6	83.1	16,156,136	33.2	59.9
Georgia	59	*c* 65	83.3	*c* 116.9	*c* 31,034,612	*c* 41	*c* 66.2
Florida	.....	.....	120	*b* 104	*b* 7,664,402	*b* 44.8	*b* 70.7
South Central Division:							
Kentucky	*c* 110	102	94	*cc* 115.4	*cc* 35,623,634	*cc* 53.9	*cc* 71
Tennessee	*c* 77	68	86	83	31,393,326	46.8	62.8
Alabama	66.5	81.3	73.5	100	34,113,800	53.2	78.7
Mississippi	110	74.5	*c* 86	*c* 101.6	*e* 22,748,240	*c* 42.8	*c* 61.9
Louisiana	*c* 65	78.8	100.6	120	17,558,760	36.3	89.5
Texas	*c* 140	71.7	100	111.5	*f* 45,593,796	*f* 43.1	*f* 82.5
Arkansas	.....	.....	*c* 75	70	13,035,000	27.8	43.3
Oklahoma	.....	.....	.....	*b* 86.3	*c* 4,711,980	*c* 43.9	*c* 55
Indian Territory	.....	.....	.....	.....	.....	.....	.....
North Central Division:							
Ohio	165	152	166.5	165	101,200,605	90.2	122.2
Indiana	98.5	136	130	144	61,160,490	91.6	109.9
Illinois	146.7	150	155.4	159.6	115,994,425	81.1	122.8
Michigan	140	150	156	161.8	*c* 56,630,000	*c* 89.2	*c* 113.6
Wisconsin	155	165	158.6	*bc* 160	*bc* 45,920,000	*bc* 73	*bc* 105.4
Minnesota	*c* 83	94	128	159	37,142,564	70	96.7
Iowa	130	148	156	158	57,576,622	90.8	103.7
Missouri	90	*c* 104	129.4	141	57,980,764	60.9	86.8
North Dakota	*c* 75	*c* 96	113	*b* 122	*b* 6,295,751	*b* 65.5	*b* 93.4
South Dakota			145	111.3	7,782,430	58.2	79.1
Nebraska	72	82	140	134	22,702,816	63.5	81.8
Kansas	116	120	135	*b* 124.3	*b* 31,936,896	*b* 76.1	*b* 86.3
Western Division:							
Montana	*c* 89	96	142.7	*bc* 140	*bc* 3,276,000	*bc* 73.7	*bc* 93.4
Wyoming	*c* 200	119	*c* 120	*bc* 110	*bc* 957,000	*bc* 40	*bc* 73.4
Colorado	92	*c* 132	144.4	166	11,464,790	84.4	105.4
New Mexico	*c* 111	111	*c* 67	*b* 96.6	*c* 1,680,840	*c* 32.3	*c* 61.9
Arizona	0	109	126	126.8	1,191,413	51.1	75
Utah	152	128	133	151	7,904,102	90.6	109.8
Nevada	142	143	140	*b* 154	*b* 767,228	*b* 85.4	*b* 104.4
Idaho	*c* 45	94	*c* 69.8	*b* 100	*b* 2,354,100	*b* 55.3	*b* 72
Washington	*c* 80	*c* 91	97.2	*b* 148	*b* 9,497,836	*b* 88.7	*b* 97
Oregon	*c* 90	90	118.2	*b* 123.9	*c* 7,586,893	*c* 74.4	*c* 85.7
California	123	146.6	157.6	163.6	33,251,172	93.1	131.2

a Certain States report their school term in months; these months have been reduced to days by multiplying by 20.

b In 1897–98. *c* Approximately. *d* In 1891–92.

e In 1896–97. *f* Includes only pupils of legal school age (8–17 years).

Observations on ascertaining the average school term.—The "aggregate number of days' schooling given" to all pupils (see column 6), which is the same thing as the aggregate number of days attended by all the pupils, has been computed for those States which do not make an explicit report of this item by multiplying the average daily attendance of pupils by the average length of school term in days.

Conversely, the average length of school term (column 5) for the United States as a whole and for each of its geographical divisions has been obtained by dividing the aggregate number of days attended by the average daily attendance.

By this method the school term of each State, in computing the average term for a number of States, is in fact given a weight proportioned to the school attendance of the State, as should be done under a correct interpretation of the expression "Average length of school term." The result might more properly be called "Average length of attendance," which is essentially what it is desired to know.

A method which has been in use in some States for finding the average school term, of a county, for instance, is to weight the different school terms of the towns or districts the county is composed of by the number of schools in each. In other words, the total number of days (or months) all the schools of a county were kept is divided by the total number of schools to get the average time each one was kept. So, in finding the average term for the State, the school is taken as the unit instead of the pupil. When the schools differ much in size (number of pupils), as they do in all mixed urban and rural systems, varying from some half a dozen to 500 or more pupils each, the average term obtained by this method varies considerably from that obtained by the Bureau's method. The long terms of the large city schools not being given their proper weight, the resulting average is too small. The same objection applies still more forcibly to weighting the school terms of the different counties or towns by the number of school districts in each.

Another method is to divide the total number of months or days taught by the number of teachers. This is, better than the preceding method, as it takes some account of the size of the schools—that is, an eight-grade school with eight teachers has eight times the weight, in determining the average term, that a district school with one teacher has. This is manifestly as it should be. If every teacher taught the same number of pupils, the result would be the same as by the Bureau's method. Care must be taken in working by this method to use the number of teachers' places (or number of teachers necessary to supply the schools) for the divisor; for if a teacher teaches a school or grade part of the term, and is replaced by another for the rest of the term, the two should obviously count as one teacher for the combined period of service. The liability to overlook this distinction in practice, as well as the inequality in the number of pupils to a teacher, makes this method generally objectionable.

Still another and most faulty method is to add together the school terms of the different counties or towns and divide by the number of such counties or towns—i. e., the simple arithmetical mean is taken. An example of this occurs in a school report, where it is stated that 14,193 pupils in one district attended 185 days, and 856 pupils in another district attended 160 days, while the average time the whole 15,049 pupils attended is computed at 172½ days, although nearly all (16 out of every 17) attended 185 days. This method, if it can be so called, gives altogether too short an average term, and nothing can be said in defense of it. It is as if, wishing to get the population per square mile of Minnesota and Dakota combined, we said, Minnesota, 9.86; Dakota, 0.92; average number of persons per square mile in the combined territory $(0.92+9.86)\div 2=5.39$, instead of dividing the total population of the two States by the combined area in square miles.

The "aggregate number of days' attendance" is a statistical item of the utmost simplicity and of great value, about the meaning of which there can be little or no

difference of opinion. Every teacher's register that records the number of pupils present each day in school, as they all presumably do, contains the data for ascertaining it for that school for the school year by the simple process of addition or summing up.

There are a few States that make no pretense of ascertaining how long their schools were taught, and others that use methods so faulty that they also are totally in the dark in the matter. Yet this is one of the most necessray and fundamental items of information in determining their educational status.

TABLE 9.—(*1*) *Length of school term.* (*2*) *The aggregate number of days' schooling given compared with the school population.*

Year.	Average length of school term, in days.						Average number of days' schooling given for every child 5 to 18 years of age.					
	The United States.	North Atlantic Division.	South Atlantic Division.	South Central Division.	North Central Division.	Western Division.	The United States.	North Atlantic Division.	South Atlantic Division.	South Central Division.	North Central Division.	Western Division.
1870–71	132.1	152.0	97.4	91.6	133.9	119.2	48.7	70.2	18.1	21.8	59.6	45.9
1871–72	133.4	151.9	103.4	97.7	136.1	121.8	49.5	68.9	20.3	25.8	59.8	46.0
1872–73	129.1	154.6	97.4	89.1	129.6	118.3	47.8	67.9	21.7	23.4	56.8	45.0
1873–74	128.8	154.8	95.6	81.1	132.6	119.0	49.6	70.4	24.5	21.9	59.8	46.1
1874–75	130.4	158.7	95.2	81.0	134.6	132.5	51.0	72.9	26.1	23.5	60.2	53.6
1875–76	133 1	158.0	95.6	82.5	139.1	130.3	51.4	73.7	26.8	20.1	62.2	54.4
1876–77	132.1	157.2	91.4	80.3	139.8	130.1	51.1	73 6	26.3	19.8	62.3	54.3
1877–78	132.0	157.6	89.7	86.7	140.1	129.9	53.2	75.6	26.8	24.3	64.3	54.5
1878–79	130.2	160.1	88.6	81.9	136.4	132.0	52.0	75.0	25.7	23.9	62.3	56.7
1879–80	130.3	159.2	92.4	79.2	139.8	129.2	53.1	74.5	29.3	24.2	64.4	54.9
1880–81	130.1	158.7	92.4	82.1	138.8	133.8	52.0	72.2	28.5	25.0	62.7	56.9
1881–82	131.2	160.6	95.9	82.5	137.1	136.2	52.9	73.3	30.6	25.6	63.2	58.0
1882–83	129.8	161.0	95.9	82.5	137.1	132.6	53.8	74.4	32.0	26.8	63.9	57.3
1883–84	129.1	156.0	95.6	85.9	138.6	133.8	55.5	72.5	32.7	30.0	67.7	61.6
1884–85	130.7	163.1	93.4	87.5	139.1	131.8	56.8	77.2	33.7	31.4	67.3	58.3
1885–86	130.4	161.6	93.4	86.9	140.4	130.8	57.3	76.7	33.7	32.0	68.7	59.6
1886–87	131.3	165.9	95.3	87.5	139.5	131.6	57.7	77.8	34.8	32.1	68.7	59.1
1887–88	132.3	164.4	95.7	87.6	144.0	130.7	58.7	76.8	35.5	33.6	71.3	57.3
1888–89	133.7	164.1	95.0	88.9	147.5	135.7	58.9	76.7	35.4	34.0	71.6	61.7
1889–90	134.7	166.6	99.9	88.2	148.0	135.0	59.2	76.8	37.3	33.9	71.9	61.2
1890–91	135.7	168.1	103.8	92.0	145.8	136.9	60.4	77.9	37.9	35.5	73.0	64.0
1891–92	136.2	169.1	105.3	94.1	146.8	139.1	61.1	78.5	37.8	37.1	73.1	68.7
1892–93	136.3	169.6	103.4	93.0	146.6	138.8	61.4	78.5	38.6	36.6	74.4	67.5
1893–94	139.5	172.3	103.3	97.5	150.2	137.1	64.2	81.3	41.5	39.8	76.9	68.5
1894–95	139.5	172.8	106.5	92.8	150.8	142.4	65.1	84.2	41.2	36.7	79.3	75.0
1895–96	140.5	175.5	107.8	92.2	151.9	142.0	65.9	84.9	41.0	37.5	80.2	76.1
1896–97	142.0	173.3	110.9	96.3	152.8	148.6	67.6	86.3	41.8	40.5	81.1	80.8
1897–98*a*	143.1	174.5	112.7	98.6	152.4	151.8	68.6	87.9	44.2	41.3	80.8	80.8
1898–99*a*	143.2	174.0	112.6	103.2	152.2	148.7	68.2	87.3	42.8	44.3	79.1	81.2

a Subject to correction.

TABLE 10.—*Number and sex of teachers—Percentage of male teachers.*

State or Territory.	Whole number of different teachers employed.			Percentage of male teachers.			
	Male.	Female.	Total.	1870–71.	1879–80.	1889–90.	1898–99.
1	2	3	4	5	6	7	8
United States	131,793	283,867	415,660	41.0	42.8	34.5	31.7
North Atlantic Division	19,160	82,552	101,712	26.2	28.8	20.0	18.8
South Atlantic Division	20,603	27,713	48,316	63.8	62.5	49.1	42.7
South Central Division	30,758	32,023	62,781	67.5	67.2	57.5	49.0
North Central Division	54,804	124,246	179,050	43.2	41.7	32.4	30.6
Western Division	6,468	17,333	23,801	45.0	40.3	31.1	27.2
North Atlantic Division:							
Maine	a 1,020	a 5,427	6,447	a 24.4	a 27.2	a 16.0	15.8
New Hampshire	256	2,714	2,970	15.0	16.8	9.8	8.6
Vermont	509	3,289	3,798	16.5	16.8	12.0	13.4
Massachusetts	1,197	12,205	13,402	12.7	13.2	9.8	8.9
Rhode Island	207	1,706	1,913	a 20.4	20.2	12.6	10.8
Connecticut	372	3,713	4,085	a 22.1	a 22.8	a 13.4	9.1
New York	5,405	28,587	33,992	22.9	26.0	16.9	15.9
New Jersey	b 834	b 5,442	b 6,276	32.5	28.5	18.4	b 13.3
Pennsylvania	9,360	19,469	28,829	42.8	45.5	34.2	32.5
South Atlantic Division:							
Delaware	c 218	c 622	c 840	a 29.9	a 46.6	a 31.0	c 25.9
Maryland	1,162	3,965	5,127	45.0	42.6	27.8	22.7
District of Columbia	155	1,004	1,159	8.2	7.8	13.0	13.4
Virginia	2,909	5,927	8,836	64.5	61.8	41.5	32.9
West Virginia	b 4,096	b 2,712	b 6,808	79.0	75.2	63.4	b 60.2
North Carolina	4,127	4,077	8,204	a 73.2	a 71.3	59.1	50.3
South Carolina	d 2,245	d 2,728	d 4,973	62.4	59.5	49.6	d 45.1
Georgia	4,570	5,007	9,577	71.4	a 65.2	53.3	47.7
Florida	b 1,121	b 1,671	b 2,792	a 65.7	61.6	48.0	b 40.2
South Central Division:							
Kentucky	d 4,909	d 5,051	d 9,960	a 66.0	64.6	49.8	d 49.3
Tennessee	5,019	4,195	9,214	a 75.0	74.4	61.8	54.5
Alabama	2,262	5,041	7,303	66.8	63.8	62.9	31.0
Mississippi	d 3,649	d 4,254	d 7,903	a 60.8	61.2	49.6	d 46.2
Louisiana	1,991	2,166	4,157	50.9	46.1	44.7	47.9
Texas	7,499	7,490	14,989	a 77.3	a 75.0	61.1	50.0
Arkansas	b 4,515	b 2,558	b 7,073	a 75.6	78.4	68.5	b 63.8
Oklahoma	914	1,268	2,182	.....	.....	.....	41.9
Indian Territory	.....	.....	.....	.....	.....	.....	.....
North Central Division:							
Ohio	10,556	15,156	25,712	43.2	47.8	43.1	41.1
Indiana	7,252	8,236	15,488	60.5	57.5	51.1	46.8
Illinois	6,973	18,974	25,947	43.5	39.7	32.5	26.9
Michigan	3,471	12,093	15,564	26.3	29.2	22.3	22.3
Wisconsin	b 2,654	b 9,811	b 12,465	a 28.8	28.9	19.8	b 21.3
Minnesota	2,306	8,944	11,250	33.7	35.9	23.9	20.5
Iowa	5,855	22,839	28,694	39.0	33.6	20.6	20.4
Missouri	5,979	7,803	13,782	65.3	58.1	44.4	43.4
North Dakota	b 1,115	b 2,522	b 3,637	a 24.7	a 40.8	28.3	b 30.7
South Dakota	1,225	3,581	4,806			29.0	25.5
Nebraska	2,088	7,154	9,192	51.9	40.7	27.1	22.2
Kansas	b 5,380	b 7,133	b 12,513	47.2	45.1	40.8	b 43.0
Western Division:							
Montana	b 201	b 885	b 1,086	a 60.3	38.5	22.9	b 18.5
Wyoming	b 102	b 434	b 536	a 28.6	44.3	22.4	b 19.0
Colorado	737	2,557	3,294	48.8	36.4	26.2	22.4
New Mexico	a 390	a 316	706	a 91.7	78.0	a 62.2	55.2
Arizona	122	251	373	.....	47.5	38.8	32.7
Utah	527	892	1,419	55.0	54.5	46.6	37.1
Nevada	b 40	b 274	b 314	32.4	46.7	16.3	b 12.7
Idaho	b 344	b 558	b 902	a 64.3	57.4	a 33.4	b 38.1
Washington	b 1,033	b 2,288	b 3,321	a 46.5	37.4	40.6	b 31.1
Oregon	b 1,250	b 2,443	b 3,693	a 51.7	48.3	43.8	b 33.8
California	e 1,722	c 6,435	e 8,157	40.0	33.6	21.4	21.1

a Approximately.
b In 1897–98.
c In 1891–92.
d In 1896–97.
e Includes some private-school teachers.

TABLE 11.—*Showing, for a period of years, what per cent of the whole number of teachers were males.*

Year.	United States.	North Atlantic Division.	South Atlantic Division.	South Central Division.	North Central Division.	Western Division.
1870–71	41.0	26.2	63.8	67.5	43.2	45.0
1871–72	41.3	26.1	63.4	68.3	43.4	43.5
1872–73	41.2	26.1	63.3	68.9	42.8	43.0
1873–74	41.6	26.8	62.9	69.4	42.5	44.5
1874–75	42.2	26.7	63.3	69.1	42.5	44.1
1875–76	42.3	27.9	63.1	68.0	42.4	45.3
1876–77	42.8	28.2	62.7	67.8	43.0	44.4
1877–78	43.1	28.5	62.6	67.7	42.8	43.0
1878–79	43.3	29.1	62.8	67.8	42.7	42.3
1879–80	42.8	28.8	62.5	67.2	41.7	40.3
1880–81	41.7	27.4	61.4	67.0	39.9	37.3
1881–82	39.7	25.7	59.4	65.8	37.7	37.1
1882–83	38.2	23.9	57.3	63.5	35.9	35.9
1883–84	37.9	23.4	56.5	63.2	35.3	34.5
1884–85	37.4	22.5	55.6	62.9	34.8	34.6
1885–86	37.4	22.4	54.5	62.2	35.2	34.2
1886–87	37.4	22.6	53.4	63.5	34.8	34.5
1887–88	36.4	21.6	53.2	60.7	34.0	30.8
1888–89	34.9	20.2	51.7	58.8	32.3	31.2
1889–90	34.5	20.0	49.1	57.5	32.4	31.1
1890–91	33.5	19.4	47.0	56.4	31.4	30.4
1891–92	32.5	18.9	46.3	55.5	29.7	30.0
1892–93	32.0	19.1	45.2	55.7	28.7	29.3
1893–94	32.2	18.9	45.1	53.7	29.6	29.6
1894–95	32.6	18.8	45.0	53.1	30.6	29.6
1895–96	32.6	19.2	44.7	52.5	30.4	29.7
1896–97	32.4	18.9	43.7	52.7	30.4	28.3
1897–98 *a*	32.2	19.2	43.2	51.8	30.6	27.0
1898–99 *a*	31.7	18.8	42.7	49.0	30.6	27.2

a Subject to correction.

TABLE 12.—*Teachers' salaries—Number of schoolhouses—Value of school property.*

State or Territory.	Average monthly salaries of teachers.		Number of buildings used as schoolhouses.	Estimated value of all public school property.
	Males.	Females.		
1	2	3	4	5
United States	*a* $45.25	*a* $38.14	244,527	$524,689,235
North Atlantic Division	*a* 56.91	*a* 41.20	41,933	206,372,776
South Atlantic Division	*a* 29.23	*a* 28.27	35,766	33,979,584
South Central Division	39.39	31.11	49,934	24,400,840
North Central Division	47.00	38.19	104,114	223,007,268
Western Division	*a* 61.04	*a* 50.58	12,780	39,928,687
North Atlantic Division:				
Maine	39.03	27.20	3,066	4,222,395
New Hampshire	69.75	40.59	1,992	3,658,143
Vermont	41.23	25.04	1,821	1,800,000
Massachusetts	136.23	51.41	*b* 3,395	*b* 39,077,405
Rhode Island	103.74	51.00	534	5,175,045
Connecticut	89.87	43.61	1,620	10,192,747
New York	(*c*)	(*c*)	11,913	75,153,615
New Jersey (1897–98)	85.82	49.72	1,850	14,691,840
Pennsylvania	44.27	37.84	14,932	49,491,586
South Atlantic Division:				
Delaware	*d c* 36.60	*d e* 34.08	*f g* 497	*g* 904,426
Maryland			*f* 2,503	*d* 4,750,000
District of Columbia	*b* 94.48	*b* 64.31	119	5,000,000
Virginia	32.09	26.39	7,218	3,336,166
West Virginia (1897–98)			5,856	3,471,697
North Carolina	25.07	22.24	6,784	10,938,805
South Carolina	*b* 25.18	*b* 24.29	4,046	845,596
Georgia			6,622	3,977,070
Florida (1897–98)	35.04	32.40	2,121	755,824

a Average for those States reporting.
b In 1897–98.
c Average for all teachers, $61.08.
d Estimated.
e In 1889–90.
f Number of schools.
g In 1891–92.

TABLE 12.—*Teachers' salaries—Number of schoolhouses—Value of school property*—Con.

State or Territory.	Average monthly salaries of teachers.		Number of buildings used as schoolhouses.	Estimated value of all public school property.
	Males.	Females.		
1	2	3	4	5
South Central Division:				
Kentucky	*a* 44.03	*a* 37.18	*b* 7,989	*b* 5,448,814
Tennessee	*c d* 31.88	*c d* 26.18	7,076	3,935,671
Alabama	32.04	25.35	*e b* 7,058	*c b* 1,500,000
Mississippi	*b* 32.18	*b* 26.69	*b* 6,510	*d* 1,636,055
Louisiana	37.06	29.71	3,302	*c* 1,125,000
Texas	49.22	35.52	10,667	7,490,300
Arkansas	38.50	36.75	5,350	2,565,000
Oklahoma	31.93	26.20	1,982	700,000
Indian Territory				
North Central Division:				
Ohio	50.00	40.00	13,077	41,446,838
Indiana	48.80	43.55	9,983	25,000,000
Illinois	60.42	53.27	12,762	49,138,724
Michigan	44.48	35.35	7,973	19,746,443
Wisconsin (1897–98)	41.00	29.50	6,940	*c* 14,800,000
Minnesota	46.00	35.00	7,260	15,187,564
Iowa	37.10	31.45	13,836	16,908,076
Missouri	*f* 49.40	*f* 42.40	10,326	17,020,880
North Dakota (1897–98)	39.92	35.51	2,304	2,132,738
South Dakota	36.45	30.82	3,755	2,905,924
Nebraska	45.05	36.56	6,710	9,215,220
Kansas (1897–98)	39.03	32.01	9,188	9,504,961
Western Division:				
Montana (1897–98)	69.28	48.61	656	1,857,965
Wyoming (1897–98)	60.40	42.86	338	441,460
Colorado	67.02	48.42	1,759	*g* 6,495,855
New Mexico			*e* 576	*f c* 281,000
Arizona	*f* 73.23	*f* 63.17	*f h* 244	490,504
Utah	61.42	41.19	689	2,801,556
Nevada (1897–98)	101.00	61.50	224	265,011
Idaho (1897–98)	56.11	44.83	748	763,305
Washington (1897–98)	42.13	34.53	1,941	4,977,679
Oregon	42.96	34.81	2,060	2,871,718
California	81.08	64.76	3,565	18,682,634

a In 1895–96.
b In 1896–97.
c Estimated.
d In 1894–95.
c Number of schools.
f In 1897–98.
g Buildings only.
h Number of districts.

Average salaries.—In computing (for Table 12) the average monthly wages of all the male (or female) teachers in a group of States, the average wages of each of the States in question is multiplied by the corresponding number of teachers. The sum of the resulting products is then divided by the sum of the teachers, and the quotient is the average wages of all. Each rate of wages thus receives its due weight.

To illustrate the principle: If 48 teachers receive an average of $72.20 per month, they all receive in a month $3,466; if 473 other teachers receive an average of $48.60 per month, these together receive in a month $22,988; all the 521 teachers combined, therefore, receive per month $26,454, or an average of $50.77.

Attention is called to this matter for the reason that the practice of taking the arithmetical mean of a number of rates of wages (the mean is $60.40 in the above case) in order to get the average of all is so common as to vitiate, to a considerable extent, the published statistics of average wages.

TABLE 13.—*Private schools (elementary and secondary).*

NOTE.—The reports of private schools are more or less incomplete, and the number of pupils as given below may be taken to represent the minimum number of private pupils in the States furnishing this item.

State or Territory.	Number of pupils enrolled in private schools.	Total public and private enrollment.	Per cent of pupils in private schools.
1	2	3	4
United States	a 1,297,720	16,436,435	7.90
North Atlantic Division	a 542,375	4,163,601	13.03
South Atlantic Division	a 106,630	2,247,762	4.74
South Central Division	a 168,108	3,106,852	5.41
North Central Division	a 443,810	6,129,676	7.24
Western Division	a 36,797	788,544	4.67
North Atlantic Division:			
Maine			
New Hampshire	9,867	75,060	13.15
Vermont	b 7,000	73,429	9.53
Massachusetts	71,460	543,437	13.15
Rhode Island	16,162	80,699	20.03
Connecticut	30,049	181,374	16.57
New York	161,708	1,341,059	12.06
New Jersey	48,757	353,437	13.79
Pennsylvania			
South Atlantic Division:			
Delaware			
Maryland			
District of Columbia (1895–96)	5,000	47,464	10.54
Virginia	b 25,000	383,825	6.51
West Virginia (1893–94)	1,894	220,709	0.86
North Carolina (1891–1892)	26,198	361,556	7.25
South Carolina			
Georgia (1893–94)	14,151	450,883	3.14
Florida (1897–98)	2,487	110,942	2.24
South Central Division:			
Kentucky (1894–95)	26,400	494,371	5.34
Tennessee (1891–92)	45,428	532,935	8.53
Alabama	26,722	460,455	5.80
Mississippi (1896–97)	14,021	381,600	3.67
Louisiana	10,535	206,704	5.10
Texas			
Arkansas	5,857	307,244	1.91
Oklahoma			
Indian Territory			
North Central Division:			
Ohio	37,413	865,913	4.32
Indiana			
Illinois	145,160	1,090,303	13.32
Michigan (1897–98)	45,465	541,490	8.40
Wisconsin (1897–98)	c 48,069	483,983	9.93
Minnesota (1894–95)	20,073	372,165	5.39
Iowa (1897–98)	30,751	579,603	5.31
Missouri	b 15,000	683,018	2.20
North Dakota (1893–94)	400	47,761	0.84
South Dakota (1893–94)	1,888	89,914	2.10
Nebraska			
Kansas			
Western Division:			
Montana (1897–98)	1,873	36,943	5.07
Wyoming (1894–95)	175	11,428	1.53
Colorado	3,434	112,250	3.06
New Mexico	3,352	30,525	10.98
Arizona			
Utah (1896–97)	2,457	71,685	3.43
Nevada (1897–98)	322	7,670	4.20
Idaho			
Washington (1897–98)	3,853	101,769	3.79
Oregon (1897–98)	5,705	90,935	6.27
California	12,869	266,266	4.83

a An estimate for all the States of the group, based upon the States reporting.
b Approximately.
c Number between 7 and 13 years of age who attended twelve weeks or more.

TABLE 14.—*School moneys received.*

State or Territory.	Income of permanent school funds and rent of school lands.	From taxation.			From other sources, State and local.	Total revenue (excluding balances on hand and proceeds of bond sales).
		From State taxes.	From local taxes.	Total from taxation.		
1	2	3	4	5	6	7
United States	$9,019,375	$36,197,338	$143,371,150	$179,568,488	$15,429,749	$204,017,612
North Atlantic Division	908,519	12,278,611	60,234,180	72,507,791	5,891,303	79,307,613
South Atlantic Division	507,883	4,751,975	6,457,440	11,209,415	880,099	12,597,397
South Central Division	959,274	7,749,605	4,704,338	12,453,943	868,207	14,221,424
North Central Division	5,744,839	6,874,450	63,514,214	70,388,664	6,461,607	82,595,110
Western Division	898,860	4,547,697	8,460,978	13,008,675	1,888,533	15,295,068
North Atlantic Division:						
Maine	31,962	512,418	962,965	1,475,383	0	1,567,345
New Hampshire	0	29,047	864,547	893,594	95,962	999,556
Vermont	54,792	87,549	746,844	834,393	79,628	968,813
Massachusetts	a 180,148	0	13,624,814	13,624,814	84,876	13,889,838
Rhode Island	16,669	120,469	1,266,884	1,387,353	50,827	1,454,849
Connecticut	150,822	313,140	2,515,371	2,828,511	75,464	3,054,797
New York	274,126	3,488,303	22,876,746	26,375,049	1,493,431	28,142,606
New Jersey (1897-98)	200,000	2,194,895	3,265,485	5,460,380	97,299	5,757,679
Pennsylvania	0	5,507,790	14,110,524	19,618,314	3,913,816	23,532,130
South Atlantic Division:						
Delaware (1898-90) b	60,000	c 6,000	209,000	215,000	0	275,000
Maryland	54,010	725,034	1,813,708	2,538,742	339,644	2,932,396
District of Columbia	0	0	d 1,148,850	1,148,850	0	1,148,850
Virginia	47,533	964,282	943,346	1,907,623	55,463	2,010,624
West Virginia (1897-98)	42,753	342,680	1,439,758	1,782,438	108,527	1,933,718
North Carolina (1897-98)	55,849	760,460	21,522	781,982	147,683	986,514
South Carolina	0	558,694	93,088	651,782	76,673	728,455
Georgia	b 212,000	b 1,258,296	e 356,068	1,614,364	f 124,743	1,951,107
Florida (1897-98)	34,738	136,529	432,100	568,629	27,366	630,733
South Central Division:						
Kentucky (1896-97)	121,899	1,326,230	1,108,395	2,434,625	197,140	2,753,664
Tennessee	157,246	1,407,082	(g)	1,407,082	170,366	1,734,694
Alabama	149,237	450,000	152,000	602,000	165,213	916,450
Mississippi (1896-97)	103,860	630,225	h 413,911	1,044,136	66,634	1,214,630
Louisiana	47,744	289,594	739,272	1,028,866	49,502	1,126,112
Texas	336,478	3,181,865	868,347	4,050,212	141,488	4,528,178
Arkansas	42,810	356,145	h 930,789	1,286,934	0	1,329,744
Oklahoma	0	108,464	491,624	600,088	17,864	617,952
Indian Territory						
North Central Division:						
Ohio	252,277	1,784,264	10,512,843	12,297,107	563,440	13,112,824
Indiana (1897-98)	615,786	1,558,276	4,806,354	6,364,630	461,130	7,441,546
Illinois	827,026	1,000,000	15,549,535	16,549,535	551,873	17,928,434
Michigan	i 1,020,283	0	4,549,062	4,549,062	1,091,455	6,660,800
Wisconsin (1897-98)	116,777	602,576	4,081,350	4,683,926	602,728	5,403,431
Minnesota	696,842	696,842	3,232,805	3,929,647	k 923,948	5,550,437
Iowa	118,139	0	7,640,840	7,640,840	920,913	8,679,892
Missouri	694,086	729,777	5,089,113	5,818,890	221,339	6,734,315
North Dakota (1897-98)	184,225	a 349,900	1,110,441	1,460,341	51,802	1,696,368
South Dakota	339,720	0	1,222,807	1,222,807	83,092	1,645,529
Nebraska	480,113	152,815	2,229,803	2,382,618	865,219	3,737,950
Kansas (1897-98)	399,565	0	3,479,261	3,479,261	124,758	4,003,584
Western Division:						
Montana (1897-98)	22,248	575,332	159,094	734,426	58,667	815,341
Wyoming (1897-98)	12,618	0	203,370	203,370	1,407	217,395
Colorado (1897-98)	91,533	0	2,129,421	2,129,421	783,633	3,004,587
New Mexico (1897-98)	0	92,224	(g)	92,224	l 110,995	203,219
Arizona	0	10,000	236,382	246,382	4,556	250,938
Utah	13,000	291,732	712,499	1,004,231	49,313	1,066,544
Nevada (1897-98)	111,320	8,149	87,266	95,415	86	206,821
Idaho (1897-98)	23,834	0	242,078	242,078	30,934	296,846
Washington (1897-98)	m 126,220	n 792,245	1,128,548	1,920,793	47,762	2,094,775
Oregon	159,424	0	871,615	871,615	239,529	1,270,568
California	358,663	2,778,015	2,690,705	5,468,720	61,651	5,869,034

a Includes some receipts from other sources.
b Approximately.
c State appropriation for colored schools.
d Includes U. S. appropriation.
e Includes local systems only.
f In 1897-98.
g Not reported.
h Includes poll taxes.
i Includes "surplus of specific taxes transferred."
k Includes proceeds of bond sales.
l Includes all receipts in cities.
m One-half the income of two years.
n Includes some local funds.

TABLE 15.—*The school revenue analyzed.*

State or Territory.	Average amount raised per taxpayer (i. e., per adult male).					Amount this will provide for each child 5 to 18 years of age.	Amount required from each adult male to provide $1 for each child 5 to 18 years of age.	Per cent of the whole revenue derived from—			
	From permanent funds and rents.	From State taxes.	From local taxes.	From all other sources.	Total amount raised per taxpayer.			Permanent funds and rents.	State taxes.	Local taxes.	Other sources.
1	2	3	4	5	6	7	8	9	10	11	12
United States....	$0.45	$1.80	$7.13	$0.76	$10.14	$9.34	$1.09	4.4	17.7	70.3	7.6
North Atlantic Div....	.15	2.06	10.09	.99	13.29	15.21	.87	1.1	15.5	76.0	7.4
South Atlantic Div....	.22	2.09	2.83	.39	5.53	3.70	1.49	4.0	37.7	51.2	7.1
South Central Div....	.31	2.52	1.53	.26	4.62	3.08	1.50	6.7	54.5	33.1	5.7
North Central Div....	.80	.95	8.79	.90	11.44	10.85	1.05	7.0	8.3	76.9	7.8
Western Division.....	.57	2.90	5.40	.89	9.76	15.55	.63	5.9	29.7	55.3	9.1
North Atlantic Div.:											
Maine.....	.16	2.56	4.82	.00	7.54	9.33	.81	2.1	34.0	63.9	.0
New Hampshire...	.00	.31	6.80	.75	7.86	11.07	.71	.0	3.9	86.5	9.6
Vermont.....	.54	.87	7.42	.79	9.62	11.94	.81	5.7	9.0	77.1	8.2
Massachusetts.....	*a*.22	.00	16.73	.11	17.06	22.15	.77	*a*1.3	.0	98.1	.6
Rhode Island.....	.14	.99	10.43	.42	11.98	14.22	.84	1.1	8.3	87.1	3.5
Connecticut.....	.56	1.17	9.42	.29	11.44	14.60	.78	4.9	10.2	82.3	2.6
New York.....	.13	1.70	11.14	.73	13.70	16.45	.83	1.0	12.4	81.3	5.3
New Jersey (1897-98)	.38	4.17	6.21	.19	10.95	12.34	.89	3.5	38.1	56.7	1.7
Pennsylvania.....	.00	3.13	8.02	2.23	13.38	13.33	1.00	.0	23.4	60.0	16.6
South Atlantic Div.:											
Delaware (1889-90) *b*	1.26	*c*.13	4 39	.00	5.78	5.79	1.00	21 8	*c*2.2	76.0	.0
Maryland.....	.17	2.29	5.72	1.06	9.24	8.20	1.13	1.8	24.7	61.8	11.7
Dist. of Columbia..	.00	.00	*d*14.00	.00	14.00	15.44	.91	.0	.0	*d*100.0	.0
Virginia.....	.12	2.45	2.40	.15	5.12	3.51	1.49	2.4	48.0	46.9	2.7
W. Va. (1897-98)...	.21	1.66	6.99	.53	9.39	6.64	1.41	2.2	17.7	74.5	5.6
N. C. (1897-98).....	.15	2.05	.06	.40	2.66	1.59	1.67	5.8	77.1	2.2	14.9
South Carolina....	.00	2.08	.35	.28	2.71	1.50	1.81	.0	76.7	12.8	10.5
Georgia.....	*b*.46	*b*2.72	*e*.77	*f*.27	4.22	2.58	1.64	*b*10.9	*b*64.5	*c*18.2	*f*6.4
Florida (1897-98)...	.27	1.08	3.41	.22	4.98	3.69	1.35	5.5	21.6	68.5	4.4
South Central Div.:											
Kentucky (1896-97)	.25	2.71	2.27	.40	5.63	4.17	1.35	4.4	48.2	40.3	7.1
Tennessee.....	.35	3.16	(*g*)	.38	3.89	2.59	1.50	9.1	81.1	(*g*)	9.8
Alabama.....	.39	1.17	.39	.42	2.37	1.43	1.66	16.3	49.1	16.6	18.0
Mississippi (1896-97)	.34	2.07	*h*1.36	.22	3.99	2.29	1.75	8.5	51.9	*h*34.1	5.5
Louisiana.....	.15	.91	2 32	.16	3.54	2.33	1.52	4.2	25.7	65.7	4.4
Texas.....	.47	4.40	1.20	.20	6.27	4.28	1.46	7.4	70.3	19.2	3.1
Arkansas.....	.14	1.19	*h*3.10	.00	4.43	2.84	1.56	3.2	26.8	*h*70.0	.0
Oklahoma.....	.00	.98	4.47	.16	5.61	5.76	.97	.0	17.5	79.6	2.9
Indian Territory ..											
North Central Div.:											
Ohio.....	.23	1.63	9.61	.51	11.98	11.69	1.03	1.9	13.6	80.2	4.3
Indiana (1897-98)..	1.00	2.54	7.84	.76	12.14	11.15	1.09	8.3	20.9	64.6	6.2
Illinois.....	.58	.70	10.96	.40	12.64	12.53	1.01	4.6	5.6	86.7	3.1
Michigan.....	*i*1.51	.00	6.75	1.62	9.88	10.49	.94	*i*15.3	.0	68.4	16.3
Wisconsin (1897-98)	.20	1.05	7.08	1.04	9.37	8.58	1.09	2.2	11.1	75.5	11.2
Minnesota.....	1.32	1.32	6.10	*k*1.74	10.48	10.46	1.00	12.6	12.6	58.3	*k*16.5
Iowa.....	.21	.00	13.37	1.60	15.18	13.69	1.11	1.4	.0	88.0	10.6
Missouri.....	.86	.90	6.31	.28	8.35	7.07	1.18	10.3	10.8	75.6	3.3
N. Dak. (1897-98)..	1.71	*a*3.24	10.29	.48	15.72	17.64	.89	10.9	*a*20.6	65.5	3.0
South Dakota.....	2.53	.00	9.11	.62	12.26	12.31	1.00	20.6	.0	74.3	5.1
Nebraska.....	1.42	.45	6.62	2.56	11.05	10.45	1.06	12.8	4.1	59.9	23.2
Kansas (1897-98)...	1.12	.00	9.75	.35	11.22	9.54	1.18	10.0	.0	86.9	3.1
Western Division:											
Montana (1897-98).	.18	4.72	1.31	.49	6.70	18.36	.36	2.7	70.5	19.5	7.3
Wyoming (1897-98)	.25	.00	4.07	.03	4.35	9.08	.48	5.8	.0	93.5	.7
Colorado (1897-98).	.39	.00	9.08	3.37	12.84	23.34	.55	3.0	.0	70.9	26.1
N. Mex. (1897-98)..	.00	1.74	(*g*)	*l*2.08	3.82	3.99	.96	.0	45.4	(*g*)	*l*54.6
Arizona.....	.00	.27	6.48	.13	6.88	10.76	.64	.0	4.0	94.2	1.8
Utah.....	.18	4.14	10.12	.70	15.14	12.23	1.24	1.2	27.3	66.8	4.7
Nevada (1897-98)..	5.92	.43	4.64	.01	11.00	23.02	.48	53.8	3.9	42.2	.1
Idaho (1897-98)....	.41	1.46	2.67	.52	5.06	6.98	.73	8.0	28.8	52.8	10.4
Wash. (1897-98)	*m*.64	*n*3.99	5.69	.23	10.55	19.55	.54	*m*6.0	*n*37.8	53.9	2.3
Oregon.....	1.18	.00	6.47	1.80	9.45	12.47	.76	12.5	.0	68.6	18.9
California.....	.59	4.82	4.67	.10	10.18	16.43	.62	5.8	47.3	45.9	1.0

a Includes some receipts from other sources.
b Approximately.
c State appropriation for colored schools.
d Includes U. S. appropriation.
e Includes local systems only.
f In 1897-98.
g Not reported.
h Includes poll tax.
i Includes "surplus of specific taxes transferred."
k Includes proceeds of bond sales.
l Includes all receipts in cities.
m One-half the income of two years.
n Includes some local funds.

TABLE 16.—*Progress of school expenditure.*

State or Territory.	Total amount expended for schools.				Expended per capita of population.			
	1870-71.	1879-80.	1889-90.	1898-99.	1870-71.	1879-80.	1889-90.	1898-99.
1	2	3	4	5	6	7	8	9
United States	$69,107,612	$78,094,687	$140,506,715	$197,281,603	$1.75	$1.56	$2.24	$2.67
North Atlantic Division	29,796,835	28,538,058	48,023,492	76,205,008	2.38	1.97	2.76	3.70
South Atlantic Division	3,781,581	5,130,492	8,767,165	12,661,418	.63	.68	.99	1.27
South Central Division	4,854,834	4,872,829	10,678,680	13,736,140	.73	.55	.97	1.03
North Central Division	28,430,023	35,285,635	62,823,563	80,425,645	2.14	2.03	2.81	3.09
Western Division	2,244,329	4,267,673	10,213,815	14,253,392	2.15	2.41	3.37	3.50
North Atlantic Division:								
Maine	950,662	1,067,991	1,327,553	1,513,125	1.51	1.65	2.01	2.30
New Hampshire	418,545	565,339	844,333	1,051,265	1.30	1.63	2.24	2.59
Vermont	499,961	446,217	711,072	974,611	1.51	1.34	2.14	2.96
Massachusetts	5,579,363	4,983,900	8,286,062	13,889,838	3.73	2.80	3.70	5.07
Rhode Island	461,160	526,112	884,966	1,570,895	2.05	1.90	2.56	3.74
Connecticut	1,496,981	1,408,375	2,157,014	3,120,516	2.74	2.26	2.89	3.51
New York	9,607,904	10,296,977	17,543,880	28,052,565	2.17	2.03	2.92	4.03
New Jersey	2,302,341	1,873,465	3,340,190	a5,723,424	2.48	1.66	2.31	a3.12
Pennsylvania	8,479,918	7,369,682	12,928,422	20,308,769	2.36	1.72	2.46	3.21
South Atlantic Division:								
Delaware	153,509	207,281	b 275,000	bc 275,000	1.21	1.41	b1.63	bc1.63
Maryland	1,214,729	1,544,367	1,910,663	2,912,527	1.53	1.65	1.83	2.38
District of Columbia	373,535	428,567	905,777	1,148,850	2.77	2.47	3.93	3.92
Virginia	587,472	946,109	1,604,509	1,971,264	.47	.63	.97	1.15
West Virginia	577,719	707,553	1,198,493	a2,046,623	1.26	1.14	1.57	a2.36
North Carolina	177,498	376,062	714,900	a931,143	.16	.27	.44	a.53
South Carolina	275,688	324,629	459,936	769,815	.38	.33	.39	.59
Georgia	292,000	471,029	1,190,354	1,937,954	.24	.31	.65	.91
Florida	129,431	114,895	516,533	a668,242	.66	.43	1.32	a1.30
South Central Division:								
Kentucky	b 1,075,000	1,069,030	2,140,678	d2,650,190	b .80	.65	1.15	d1.31
Tennessee	b 758,000	744,180	1,526,241	1,628,213	b .59	.48	.86	.83
Alabama	b 370,000	b 500,000	b 899,000	d800,273	b .36	b .40	b .59	d.46
Mississippi	950,000	830,705	1,109,575	d1,165,840	1.11	.73	.86	d.81
Louisiana	531,834	411,858	817,110	1,126,112	.71	.44	.73	.79
Texas	b 650,000	b 1,020,000	3,178,300	4,476,457	b .74	b .65	1.42	1.49
Arkansas	b 520,000	287,056	1,016,776	1,292,463	b1.02	.36	.90	.98
Oklahoma	.....	.....	.....	596,492	.....	.....	.....	1.68
North Central Division:								
Ohio	6,831,035	7,166,963	10,602,238	12,671,798	2.52	2.24	2.89	3.21
Indiana	b 2,897,537	4,491,850	5,245,218	8,188,089	b1.70	2.27	2.39	3.62
Illinois	6,656,542	7,014,092	11,645,126	17,650,606	2.57	2.28	3.04	3.49
Michigan	2,840,740	2,775,917	5,349,366	5,883,369	2.33	1.70	2.55	2.57
Wisconsin	1,932,539	2,177,023	3,801,212	a5,132,063	1.70	1.65	2.25	a2.44
Minnesota	960,558	1,328,429	4,187,310	5,172,110	2.06	1.70	3.22	2.82
Iowa	3,269,190	4,484,043	6,382,953	7,978,060	2.70	2.76	3.34	3.80
Missouri	1,749,049	2,675,364	5,434,262	7,048,826	.99	1.23	2.03	2.30
North Dakota	b 23,000	245,000	626,949	a1,288,031	b1.29	1.81	3.43	a3.66
South Dakota			1,199,630	1,605,623			3.65	3.52
Nebraska	365,520	1,108,617	3,376,332	3,815,593	2.61	2.45	3.19	3.21
Kansas	904,323	1,818,337	4,972,967	a3,991,477	2.24	1.83	3.48	a3.00
Western Division:								
Montana	b 35,600	78,730	364,084	a776,150	b1.62	2.01	2.76	a3.16
Wyoming	b 7,000	28,504	b 225,000	a213,291	b .71	1.37	b3.71	a1.90
Colorado	67,395	395,227	1,681,379	2,281,713	1.44	2.03	4.08	3.70
New Mexico	b 4,960	28,973	b 85,000	a154,532	b .05	.24	b .55	a.85
Arizona	0	61,172	181,914	238,741	0	1.51	3.05	2.60
Utah	b 117,000	132,194	394,685	991,973	b1.28	.92	1.90	3.69
Nevada	b 85,000	220,245	161,481	a203,642	b1.93	3.54	3.53	a4.96
Idaho	19,003	38,411	169,020	a274,377	1.17	1.18	2.00	a1.75
Washington	b 35,000	112,615	958,111	a1,795,795	b1.30	1.50	2.74	a3.80
Oregon	b 160,000	307,031	805,979	1,159,125	b1.65	1.76	2.57	3.07
California	1,713,431	2,864,571	5,187,162	6,164,053	2.93	3.31	4.29	4.09

a In 1897-98. *b* Approximately. *c* In 1889-90. *d* In 1896-97.

TABLE 17.—*The school expenditure of 1898–99 classified.*

State or Territory.	Paid for sites, buildings, furniture, libraries, and apparatus.	Paid for teachers' and superintendents' salaries.	Paid for all other purposes, principally maintenance.	Total expenditure, excluding payment of bonds.
1	2	3	4	5
United States	$33,249,949	$128,662,880	$35,368,774	$197,281,603
North Atlantic Division	16,784,574	44,115,022	15,305,412	76,205,008
South Atlantic Division	1,288,185	9,502,585	1,870,698	12,661,418
South Central Division	920,547	11,540,567	1,275,026	13,736,140
North Central Division	12,710,559	53,599,483	14,115,603	80,425,645
Western Division	1,546,084	9,905,273	2,802,035	14,253,392
North Atlantic Division:				
Maine	192,808	1,118,954	201,363	1,513,125
New Hampshire	66,630	677,767	306,868	1,051,265
Vermont	202,516	647,694	124,401	974,611
Massachusetts	3,036,201	a 7,932,852	2,920,785	13,889,838
Rhode Island	291,096	998,315	281,484	1,570,895
Connecticut	605,190	1,948,917	566,409	3,120,516
New York	7,579,067	16,484,647	3,988,851	28,052,565
New Jersey (1897–98)	1,241,245	3,556,163	926,016	5,723,424
Pennsylvania	3,569,821	10,749,713	5,989,235	20,308,769
South Atlantic Division:				
Delaware (1899–90)	b 23,795	a 225,000	a 26,205	a 275,000
Maryland	424,843	2,132,954	354,725	2,912,527
District of Columbia	78,419	801,016	269,415	1,148,850
Virginia	254,332	1,504,397	212,535	1,971,264
West Virginia (1897–98)	280,848	1,168,191	597,584	2,046,623
North Carolina (1897–98)	54,001	761,772	115,370	931,143
South Carolina	80,529	647,601	41,685	769,815
Georgia	c 41,573	1,701,748	194,633	1,937,954
Florida (1897–98)	49,840	559,856	58,546	668,242
South Central Division:				
Kentucky (1896–97)	248,217	2,145,178	256,795	2,650,190
Tennessee	105,229	1,232,099	290,985	1,628,313
Alabama (1896–97)	a 100,000	588,047	112,226	800,273
Mississippi (1896–97)	34,260	1,057,735	73,845	1,165,840
Louisiana	(d)	944,135	181,977	1,126,112
Texas	200,937	4,030,188	245,332	4,476,457
Arkansas	111,299	1,121,899	59,265	1,292,463
Oklahoma	120,605	421,286	54,601	596,492
Indian Territory				
North Central Division:				
Ohio	1,017,904	8,878,021	2,775,873	12,671,798
Indiana	3,387,124	4,800,965	(d)	8,188,089
Illinois	3,340,883	11,435,968	2,873,755	17,650,606
Michigan	85,902	4,312,245	1,485,222	5,883,369
Wisconsin (1897–98)	655,941	3,577,978	898,144	5,132,063
Minnesota	1,129,439	3,444,425	598,246	5,172,110
Iowa	500,414	5,417,663	2,059,983	7,978,060
Missouri	1,300,712	4,663,209	1,084,905	7,048,826
North Dakota (1897–98)	198,236	693,403	396,392	1,288,031
South Dakota	226,805	941,797	437,021	1,605,623
Nebraska	674,907	2,498,766	641,920	3,815,593
Kansas (1897–98)	192,292	2,935,043	864,142	3,991,477
Western Division:				
Montana (1897–98)	192,466	483,221	100,463	776,150
Wyoming (1897–98)	26,340	160,222	26,729	213,291
Colorado	236,825	1,454,117	590,771	2,281,713
New Mexico (1897–98)	15,923	122,729	15,880	154,532
Arizona	60,627	178,114	(d)	238,741
Utah	171,586	579,346	241,041	991,973
Nevada (1897–98)	12,934	162,322	28,386	203,642
Idaho (1897–98)	27,052	205,849	41,476	274,377
Washington (1897–98)	158,773	1,081,008	556,014	1,795,795
Oregon	157,424	826,385	175,316	1,159,125
California	486,134	4,651,960	1,025,959	6,164,053

a Approximately.
b For city of Wilmington only.
c Cities included in column 4.
d Not reported.

TABLE 18.—(*1*) *Expenditure per pupil (based on average attendance); (2) average daily expenditure per pupil; (3) percentage analysis of school expenditure.*

State or Territory.	Average expenditure per pupil (for the whole school year).				Average daily expenditure per pupil.		Per cent of total expenditure devoted to—		
	For sites, buildings, etc.	For salaries.	For all other purposes.	Total per pupil.	For salaries only.	Total.	Sites, buildings, etc.	Salaries.	All other purposes,
1	2	3	4	5	6	7	8	9	10
					Cents.	*Cents.*			
United States	$3.20	$12.39	$3.40	$18.99	8.6	13.3	16.9	65.2	17.9
North Atlantic Division	6.41	16.85	5.85	29.11	9.7	16.7	22.0	57.9	20.1
South Atlantic Division	1.00	7.34	1.45	9.79	6.5	8.7	10.2	75.0	14.8
South Central Division	.46	5.82	.64	6.92	5.6	6.7	6.7	84.0	9.3
North Central Division	3.21	13.55	3.56	20.32	8.9	13.4	15.8	66.6	17.6
Western Division	2.83	18.43	5.21	26.52	12.4	17.8	10.8	69.5	19.7
North Atlantic Division:									
Maine	1.97	11.45	2.06	15.48	9.1	12.3	12.7	74.0	13.3
New Hampshire	1.40	14.20	6.42	22.02	10.5	16.3	6.3	64.5	29.2
Vermont	4.22	13.49	2.59	20.30	8.6	13.0	20.8	66.5	12.7
Massachusetts	8.43	a22.01	8.11	38.55	11.7	20.5	21.8	a57.1	21.1
Rhode Island	6.32	21.66	6.11	34.09	11.4	18.0	18.5	63.5	18.0
Connecticut	5.50	17.72	5.17	28.39	9.4	15.0	19.4	62.4	18.2
New York	8.92	19.41	4.70	33.03	10.6	18.0	27.0	58.8	14.2
New Jersey (1897–98)	6.20	17.75	4.63	28.58	9.3	15.0	21.7	62.1	16.2
Pennsylvania	4.16	12.52	6.98	23.66	7.8	14.7	17.6	52.9	29.5
South Atlantic Division:									
Delaware (1899–90)	b1.21	a11.45	a1.33	a13.99	a6.9	a8.4	b8.7	a81.8	a9.5
Maryland	3.20	16.08	2.67	21.95	8.6	11.7	14.6	73.2	12.2
District of Columbia	2.30	23.53	7.92	33.75	13.1	18.8	6.8	69.7	23.5
Virginia	1.25	7.40	1.05	9.70	6.2	8.2	12.9	76.3	10.8
West Virginia (1897–98)	1.76	7.31	3.74	12.81	6.6	11.5	13.7	57.1	29.2
North Carolina (1897–98)	.25	3.55	.54	4.34	5.2	6.3	5.8	81.8	12.4
South Carolina	.41	3.33	.22	3.96	4.0	4.8	10.5	84.1	5.4
Georgia	c.16	6.41	.73	7.30	5.5	6.2	c2.1	87.8	10.1
Florida (1897–98)	.67	7.57	.79	9.03	7.3	8.7	7.5	83.8	8.7
South Central Division:									
Kentucky (1896–97)	.80	6.95	.83	8.58	6.0	7.4	9.4	81.0	9.6
Tennessee	.30	3.49	.83	4.62	3.9	5.2	6.5	75.6	17.9
Alabama (1896–97)	a.45	2.64	.50	3.59	3.3	4.5	a12.5	73.5	14.0
Mississippi (1896–97)	.15	4.73	.33	5.21	4.7	5.1	2.9	90.7	6.4
Louisiana	(d)	6.45	1.25	7.70	5.4	6.4	(d)	83.9	16.1
Texas	.54	10.89	.67	12.10	8.8	9.8	4.5	99.0	5.5
Arkansas	.89	6.03	.31	6.94	8.6	9.9	8.6	86.8	4.6
Oklahoma	2.21	7.72	1.00	10.93	8.9	12.7	20.2	70.6	9.2
North Central Division:									
Ohio	1.66	14.47	4.53	20.66	8.8	12.5	8.0	70.0	22.0
Indiana	7.97	11.31	(d)	19.28	7.8	13.4	41.4	58.6	(d)
Illinois	4.60	15.73	3.95	24.28	9.9	15.2	18.9	64.8	16.3
Michigan	.25	12.32	4.24	16.81	7.6	10.4	1.5	73.3	25.2
Wisconsin (1897–98)	2.29	12.47	3.12	17.88	7.8	11.2	12.8	69.7	17.5
Minnesota	4.76	14.52	2.53	21.81	9.3	13.9	21.8	66.6	11.6
Iowa	1.37	14.87	5.65	21.89	9.4	13.9	6.3	67.9	25.8
Missouri	3.12	11.20	2.61	16.93	8.0	12.2	18.5	66.2	15.3
North Dakota (1897–98)	4.82	16.85	9.63	31.30	11.0	20.5	15.4	53.8	30.8
South Dakota	3.24	13.47	6.25	22.96	12.1	20.6	14.1	58.7	27.2
Nebraska	2.98	14.75	3.79	22.52	11.0	16.8	17.7	65.5	16.8
Kansas (1897–98)	.75	11.42	3.37	15.54	9.2	12.5	4.8	73.5	21.7
Western Division:									
Montana (1897–98)	8.23	20.65	4.29	23.17	14.7	23.7	24.8	62.2	13.0
Wyoming (1897–98)	3.63	18.42	3.07	24.52	16.7	22.3	12.3	75.1	12.6
Colorado	3.43	21.05	8.55	33.03	12.7	19.9	10.4	63.7	25.9
New Mexico (1897–98)	.94	7.24	.94	9.12	7.5	9.4	10.3	79.4	10.3
Arizona	6.45	18.96	(d)	25.41	15.0	20.0	25.4	74.6	(d)
Utah	3.29	11.10	4.61	19.00	7.3	12.6	17.3	58.4	24.3
Nevada (1897–98)	2.60	32.58	5.69	40.87	21.2	26.5	6.4	79.7	13.9
Idaho (1897–98)	1.26	9.56	1.93	12.75	9.6	12.7	9.9	75.0	15.1
Washington (1897–98)	2.47	16.84	8.67	27.98	11.4	18.9	8.8	60.2	31.0
Oregon	2.57	13.50	2.86	18.93	10.9	15.3	13.6	71.3	15.1
California	2.39	22.89	5.05	30.33	14.0	18.5	7.9	75.5	16.6

a Approximately.
b For city of Wilmington only.
c Cities included in column of expenditure for "all other purposes."
d Not reported.

TABLE 19.—(*1*) *School expenditures per capita of population;* (*2*) *same per capita of average attendance.*

Year.	Expended per capita of population.						Expended per pupil.					
	United States.	North Atlantic Division.	South Atlantic Division.	South Central Division.	North Central Division.	Western Division.	United States.	North Atlantic Division.	South Atlantic Division.	South Central Division.	North Central Division.	Western Division.
1870-71	$1.75	$2.38	$0.63	$0.73	$2.14	$2.15	$15.20	$18.31	$10.27	$9.06	$14.87	$21.87
1871-72	1.83	2.40	.68	.81	2.31	2.27	15.93	18.86	10.46	9.08	16.26	23.57
1872-73	1.84	2.44	.68	.74	2.31	2.42	16.06	19.89	9.25	8.39	16.53	25.04
1873-74	1.88	2.51	.76	.68	2.38	2.40	15.85	19.89	9.01	7.55	16.57	24.36
1874-75	1.91	2.55	.80	.73	2.36	2.76	15.91	20.17	8.98	7.51	16.69	26.85
1875-76	1.85	2.45	.79	.55	2.37	2.78	15.70	19.14	8.65	6.70	16.91	26.35
1876-77	1.72	2.29	.72	.51	2.21	2.61	14.64	17.89	7.68	6.25	15.93	24.69
1877-78	1.67	2.15	.70	.56	2.14	2.73	13.67	16.55	7.21	5.98	15.08	25.82
1878-79	1.56	2.03	.63	.55	2.00	2.53	12.97	16.05	6.76	5.65	14.22	23.39
1879-80	1.56	1.97	.68	.55	2.03	2.41	12.71	15.64	6.60	5.40	14.39	22.59
1880-81	1.63	2.08	.72	.58	2.09	2.54	13.61	17.14	7.22	5.72	15.19	23.81
1881-82	1.70	2.11	.78	.64	2.19	2.59	14.05	17.35	7.63	6.25	15.79	24.32
1882-83	1.80	2.22	.82	.68	2.34	2.74	14.55	18.17	7.46	6.17	16.69	25.39
1883-84	1.88	2.25	.84	.74	2.48	2.83	14.63	18.37	7.44	6.26	16.90	24.69
1884-85	1.96	2.38	.88	.82	2.53	2.90	15.12	19.19	7.32	6.74	17.53	26.31
1885-86	1.97	2.36	.88	.87	2.54	2.88	15.06	19.11	7.23	6.93	17.45	25.52
1886-87	1.97	2.35	.90	.87	2.55	2.76	15.07	19.38	7.33	6.88	17.45	24.85
1887-88	2.07	2.48	.95	.87	2.68	2.96	15.71	20.60	7.61	6.60	18.29	27.38
1888-89	2.17	2.59	.98	.94	2.76	3.23	16.55	21.64	7.77	7.12	19.30	29.37
1889-90	2.24	2.76	.99	.97	2.81	3.37	17.23	23.58	7.78	7.28	19.70	30.57
1890-91	2.31	2.79	1.06	1.04	2.85	3.78	17.54	23.66	8.52	7.78	19.42	33.42
1891-92	2.40	2.94	1.07	1.06	2.94	4.03	18.20	24.89	8.74	7.82	20.13	33.55
1892-93	2.48	3.04	1.10	1.06	3.07	3.97	18.58	25.91	8.65	7.72	20.62	33.57
1893-94	2.53	3.14	1.12	1.07	3.20	3.53	18.62	26.21	8.61	7.58	21.29	29.06
1894-95	2.54	3.32	1.13	1.06	3.12	3.49	18.41	26.84	8.58	7.69	20.26	27.32
1895-96	2.60	3.49	1.15	1.07	3.11	3.52	18.76	28.45	8.87	7.60	20.09	27.16
1896-97	2.63	3.64	1.19	1.03	3.07	3.40	18.67	28.77	9.32	7.09	19.75	25.86
1897-98 (*a*)	2.67	3.75	1.23	1.03	3.04	3.63	18.86	29.33	9.25	7.07	19.56	28.23
1898-99 (*a*)	2.67	3.70	1.27	1.03	3.09	3.50	18.99	29.11	9.79	6.92	20.32	26.52

a Subject to correction.

IV.—TABLES OF SCHOOL EXPENDITURE IN THE SOUTHERN STATES, CLASSIFIED BY RACE.

Table A gives the school expenditure, classified by race, in each Southern State that reports the expenditure so classified, as far back as the record goes in each. In Maryland the expenditure for negro schools for the first three or four years is mainly in the city of Baltimore. The totals, of course, include only the States tabulated.

Table B gives the white and colored school population (children 5 to 18 years of age) in each case where the school expenditure is given in Table A. The relative white and colored school expenditure, it is evident, possesses no significance unless considered in connection with the relative number of children of each race for whose benefit the expenditure was made.

Table C gives the expenditure for white schools per capita of white school population, and the same for the negro schools. The averages include only the States recorded each year.

In making an estimate of the white and colored school expenditure of the remaining Southern States the most obvious assumption to make in the absence of any positive information is to consider that their white and colored school per capita expenditures bear the same ratio to each other each year as the average per capita given in Table C. It is upon this basis that the classifications by race have been made that are given in Table D, except for the years 1870–71 and 1871–72, in which the ratio of white to colored per capita was taken at about 6.

TABLE A.—*Expenditure for white and colored schools.*

Year.	District of Columbia.		Florida.		Kentucky.		Maryland.		North Carolina. *a*		Total.	
	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.
1869–70							$1,234,349	*b* 30,912			$1,234,349	$30,912
1870–71							*c* 1,120,145	*b* 28,571			1,120,145	28,571
1871–72							1,153,035	55,390			1,153,035	55,390
1872–73							1,250,615	*b* 70,572	*d* $112,175	*d* $45,954	1,362,790	116,526
1873–74							1,389,165	*b* 94,759	*d* 182,647	*d* 77,615	1,571,812	172,374
1874–75	*d* $132,872	*d* $62,914					1,470,022	*b* 119,080	*c* 180,000	*c* 84,000	1,782,894	265,994
1875–76	303,986	101,843					1,413,088	119,856	*c* 178,000	*c* 90,000	1,895,074	311,699
1876–77	263,722	107,274					*e* 1,400,000	*e* 150,000	176,863	98,167	1,840,585	355,441
1877–78	267,300	106,306					1,385,334	179,500	*c* 185,000	*c* 108,000	1,837,634	393,806
1878–79	269,491	98,852					1,383,221	*b* 154,032	193,467	115,859	1,846,179	368,743
1879–80	334,233	104,334			$1,007,101	$32,906	1,368,740	*b* 150,426	210,575	124,010	2,920,649	411,676
1880–81	*f* 273,130	*f* 108,184			1,146,848	41,542	1,417,167	*b* 151,544	225,643	143,792	3,062,788	445,062
1881–82	*f* 298,017	*f* 100,238			1,188,682	69,441	*c* 1,375,000	*c* 155,500	297,130	151,590	3,158,829	176,769
1882–83	*f* 294,337	*f* 125,258			1,149,797	155,329	1,334,982	*b* 159,569	306,805	181,039	3,085,921	621,195
1883–84	*f* 307,657	*f* 127,376			1,184,930	158,299	1,477,835	171,048	303,767	184,925	3,274,189	641,648
1884–85	*f* 344,399	*f* 125,152			1,387,605	197,537	1,509,941	172,251	356,647	224,061	3,598,592	719,004
1885–86	*d* 286,698	*d* 108,996			1,429,631	193,835	1,611,637	176,989	395,206	219,831	3,723,172	699,651
1886–87	*d* 289,306	*c* 131,633			1,564,621	208,369	1,611,319	178,450	383,554	209,517	3,848,800	727,999
1887–88	*d* 301,699	*d* 143,437			1,629,973	264,894	1,598,251	184,630	403,547	213,885	3,933,470	806,846
1888–89	*d* 321,688	*d* 150,192			1,834,553	296,733	1,662,026	190,741	*g* 318,712	*g* 160,382	4,136,979	798,048
1889–90	*d* 368,964	*d* 144,137			1,930,794	278,576	1,688,010	222,653	421,441	211,489	4,409,209	856,855
1890–91	*d* 397,588	*d* 151,925			2,029,542	292,810	1,994,920	226,360	404,005	192,321	4,826,055	864,416
1891–92	*d* 424,918	*d* 161,468			*e* 2,240,000	*e* 283,000	1,920,475	229,496	450,622	215,116	5,036,015	889,080
1892–93	*d* 448,945	*d* 170,660	*d* $352,533	*d* $91,601	*e* 2,450,000	*e* 272,000	2,009,392	237,719	455,124	217,469	5,715,994	989,449
1893–94	*d* 472,245	*d* 178,830	*d* 391,364	*d* 112,004	2,663,859	262,091	2,056,696	244,423	455,950	214,844	6,040,114	1,012,193
1894–95	*d* 498,097	*d* 188,778	*d* 387,657	*d* 94,816	*e* 2,770,000	*e* 320,000	2,047,502	268,059	487,573	231,659	6,190,829	1,103,312
1895–96	*f* 654,700	*f* 242,310	503,958	156,292	2,878,296	374,202	2,246,525	287,825	473,468	246,946	6,756,947	1,307,575
1896–97	823,678	287,620	*d* 410,821	*d* 105,593	2,586,032	322,322	2,302,836	291,865	482,139	243,703	6,605,506	1,251,103
1897–98	*f* 692,547	*f* 273,382	565,465	171,486	*h* 2,586,032	*h* 322,322	2,388,721	320,383	454,976	240,446	6,687,741	1,328,019

a Excluding certain small sums not classified by race and a few counties not reported.
b Does not include permanent improvements in Baltimore City.
c Does not include permanent improvements outside of Baltimore.
d Includes salaries of teachers and superintendents only (or cost of tuition).
e Approximately.
f Does not include permanent improvements.
g For 8 months.
h In 1896–97.

TABLE B.—*Estimated number of children 5 to 18 years of age.*

Year.	District of Columbia.		Florida.		Kentucky.		Maryland.		North Carolina.		Total.	
	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.
1870*a*							188,234	56,220			188,234	56,220
1871							190,700	57,000			190,700	57,000
1872							193,200	57,900			193,200	57,900
1873							195,700	58,800	235,300	150,100	431,000	208,900
1874							198,500	59,600	239,300	155,000	437,600	214,600
1875	27,110	12,960					200,800	60,500	243,400	160,000	471,310	233,460
1876	27,800	13,300					203,500	61,400	247,500	165,200	478,860	239,900
1877	28,480	13,620					206,100	62,300	251,800	170,400	486,380	246,320
1878	29,170	13,930					208,800	63,200	256,100	175,900	494,070	253,030
1879	30,700	14,600					211,500	64,200	260,400	181,600	502,600	260,400
1880*a*	32,310	15,417			455,895	90,560	214,297	65,115	264,890	187,274	967,292	358,366
1881	32,850	15,910			461,900	90,500	216,500	65,400	273,600	189,990	984,250	361,710
1882	33,390	16,419			468,000	90,400	218,600	65,800	281,300	192,600	1,001,290	365,219
1883	33,840	16,880			474,200	90,200	220,800	66,100	289,500	195,400	1,018,340	368,580
1884	34,300	17,350			480,500	90,100	223,100	66,300	298,700	198,000	1,036,600	371,750
1885	34,760	17,840			486,800	90,000	225,300	66,700	307,800	200,800	1,054,660	375,340
1886	35,330	18,390			493,200	89,900	227,600	67,000	317,100	203,600	1,073,230	378,890
1887	35,920	18,960			499,700	89,700	229,900	67,300	326,800	206,200	1,092,320	382,160
1888	36,510	19,540			506,400	89,400	232,200	67,600	336,800	208,900	1,111,910	385,440
1889	37,120	20,140			513,000	89,300	234,500	68,000	347,000	211,700	1,131,620	389,140
1890*a*	37,730	20,754			519,810	89,036	236,890	68,307	357,593	214,411	1,152,023	392,508
1891	39,960	21,980			527,800	90,400	239,470	69,030	362,000	217,000	1,169,230	398,410
1892	42,320	23,280			535,990	91,800	242,120	69,880	364,650	218,650	1,184,990	403,610
1893	42,930	23,620	81,150	64,350	544,100	93,200	244,750	70,550	373,100	223,700	1,286,030	475,420
1894	43,630	24,000	84,230	66,770	539,770	92,460	247,400	71,400	379,940	227,800	1,294,970	482,430
1895	44,300	24,370	86,120	68,280	550,900	94,500	258,700	74,600	389,700	233,700	1,319,960	489,350
1896	44,800	24,640	89,130	70,670	557,400	95,400	263,300	75,900	388,650	233,050	1,344,330	500,310
1897	45,440	25,000	92,240	73,060	563,900	96,600	268,000	77,200	387,600	232,400	1,358,230	504,910
1898	46,720	25,700	95,460	75,640	570,000	97,500	272,700	78,700	387,600	232,400	1,372,480	509,940

a The figures for 1870, 1880, and 1890 are from the United States Census Reports.

TABLE C.—*Expenditure per capita of white and colored school population (5 to 18 years of age).*

Year.	District of Columbia.		Florida.		Kentucky.		Maryland.		North Carolina.		Average.	
	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.
1869–70							$6.56	*b* $0.55			$6.56	$0.55
1870–71							*c* 5.87	*b* .50			5.87	.50
1871–72							5.97	.96			5.97	.96
1872–73							6.39	*b* 1.20	*d* $0.48	*d* $0.31	3.16	.56
1873–74							7.01	*b* 1.59	*d* .76	*d* .50	3.59	.80
1874–75	*d* $1.90	*d* $4.85					7.32	*b* 1.97	*e* .74	*e* .53	3.78	1.14
1875–76	10.93	7.66					6.94	1.95	*e* .72	*e* .54	3.96	1.30
1876–77	9.26	7.88					*c* 6.79	*c* 2.41	.70	.58	3.78	1.44
1877–78	9.16	7.63					6.63	2.84	*e* .72	*e* .61	3.72	1.56
1878–79	8.78	6.77					6.54	*b* 2.40	.74	.64	3.67	1.42
1879–80	10.34	6.77			$2.21	$0.36	6.39	2.31	.79	.66	3.02	1.15
1880–81	*f* 8.31	*f* 6.80			2.48	.46	6.55	2.32	.83	.76	3.11	1.23
1881–82	*f* 8.93	*f* 6.11			2.54	.77	6.29	2.36	1.06	.79	3.15	1 31
1882–83	*f* 8.70	*f* 7.42			2.42	1.72	6.05	2.41	1.06	.93	3.03	1.68
1883–84	*f* 8.97	*f* 7.34			2.47	1.76	6.62	2.58	1.02	.93	3.16	1.73
1884–85	*f* 9.91	*f* 7.02			2.85	2.19	6.70	2.58	1.16	1.12	3.41	1.92
1885–86	*d* 8.11	*d* 5.93			2.90	2.16	7.08	2.64	1.25	1.08	3.47	1.85
1886–87	*d* 8.05	*d* 6.94			3.13	2.32	7.01	2.65	1.17	1.02	3.52	1.90
1887–88	*d* 8.26	*d* 7.34			3.22	2.96	6.88	2.73	1.20	1.02	3.54	2.09
1888–89	*d* 8.67	*d* 7.46			3.58	3.32	7.09	2.81	*g* .92	*g* .76	3.66	2.05
1889–90	*d* 9.78	*d* 6.95			3.71	3.13	7.13	3.26	1.18	.99	3.83	2.18
1890–91	*d* 9.95	*d* 6.91			3.85	3.24	8.33	3.28	1.12	.89	4.13	2.17
1891–92	*d* 10.04	*d* 6.94			*c* 4.18	*c* 3.08	*c* 7.93	*c* 3.28	1.24	.98	4.25	2.20
1892–93	*d* 10.46	*d* 7.23	*d* $4.34	*d* $1.42	*c* 4.50	*c* 2.92	*c* 8.21	*c* 3.37	1.22	.97	4.45	2.08
1893–94	*d* 10.82	*d* 7.45	*d* 4.65	*d* 1.68	4.94	2.83	8.31	3.42	1.20	.94	4.66	2.10
1894–95	*d* 11.24	*d* 7.75	*d* 4.50	*d* 1.39	*c* 5.03	*c* 3.39	*c* 7.91	*c* 3.59	1.28	1.02	4.69	2.25
1895–96	*f* 14.61	*f* 9.83	5.66	2.21	5.16	3.92	8.53	3.79	1.21	1.06	5.03	2.61
1896–97	18.13	11.50	*d* 4.45	*d* 1.45	4.59	3.34	8.59	3.78	1.24	1.05	4.86	2.48
1897–98	*f* 14.82	*f* 10.64	5.92	2.27	*h* 4.59	*h* 3.34	8.76	4.07	1.17	1.03	4.87	2.60

a Excluding certain small sums not classified by race and a few counties not reported.
b Does not include permanent improvements in Baltimore City.
c Does not include permanent improvements outside of Baltimore.
d Includes salaries of teachers and superintendents only (or cost of tuition).
e Approximately.
f Does not include permanent improvements.
g For 8 months.
h In 1896–97.

TABLE D.—*School expenditure of the sixteen former slave States and the District of Columbia, approximately classified by race.*

Year.	Total expenditure for both races.	Estimated expenditure for each race.		Estimated school population (i. e., children 5 to 18 years of age).		Expenditure per capita of school population.	
		White.	Colored.	White.	Colored.	White.	Col'ed.
1	2	3	4	5	6	7	8
1869-70				[a]3,164,729	[a]1,528,381		
1870-71	$10,385,464	$9,605,158	$780,306	3,236,630	1,578,170	$2.97	$0.49
1871-72	11,623,238	10,742,316	880,922	3,310,920	1,629,880	3.24	.54
1872-73	11,176,048	10,271,448	904,600	3,387,360	1,683,040	3.03	.54
1873-74	11,823,775	10,636,792	1,186,983	3,466,120	1,737,980	3.07	.68
1874-75	13,021,514	11,297,560	1,723,954	3,547,430	1,794,870	3.18	.96
1875-76	12,033,865	10,308,360	1,725,505	3,631,400	1,853,400	2.84	.93
1876-77	11,231,073	9,389,620	1,841,453	3,717,920	1,914,080	2.53	.96
1877-78	12,093,091	9,931,260	2,161,831	3,807,290	1,976,910	2.61	1.09
1878-79	12,174,141	10,123,542	2,050,599	3,900,250	2,042,150	2.60	1.00
1879-80	12,678,685	10,558,200	2,120,485	[a]3,996,806	[a]2,109,050	2.64	1.01
1880-81	13,656,814	11,312,573	2,344,241	4,096,800	2,145,990	2.76	1.09
1881-82	15,241,740	12,532,246	2,709,494	4,199,900	2,183,660	2.98	1.24
1882-83	16,363,471	12,730,938	3,632,533	4,306,000	2,221,930	2.96	1.63
1883-84	17,884,558	13,967,752	3,916,806	4,414,900	2,261,040	3.16	1.73
1884-85	19,253,874	14,969,261	4,284,613	4,527,300	2,301,270	3.31	1.86
1885-86	20,208,113	15,924,766	4,283,347	4,641,500	2,341,520	3.43	1.83
1886-87	20,821,969	16,392,646	4,429,323	4,759,100	2,382,570	3.44	1.86
1887-88	21,810,158	16,864,157	4,946,001	4,880,100	2,424,330	3.46	2.04
1888-89	23,171,878	18,158,290	5,013,588	5,004,900	2,467,040	3.63	2.03
1889-90	24,880,107	19,461,742	5,418,365	[a]5,132,948	[a]2,510,847	3.79	2.16
1890-91	26,690,310	21,245,685	5,444,625	5,230,115	2,551,511	4.06	2.13
1891-92	27,691,488	22,117,570	5,573,918	5,322,805	2,590,751	4.16	2.15
1892-93	28,535,738	23,233,782	5,301,956	5,435,840	2,654,040	4.26	2.00
1893-94	29,223,546	23,936,173	5,287,373	5,530,620	2,711,410	4.33	1.95
1894-95	29,443,584	24,432,222	5,011,362	5,679,755	2,761,205	4.30	1.81
1895-96	31,149,724	24,892,218	6,257,506	5,776,980	2,799,390	4.31	2.24
1896-97	31,144,801	24,967,764	6,177,037	5,809,430	2,816,340	4.30	2.19
1897-98	31,217,479	24,765,544	6,451,935	5,828,980	2,844,570	4.25	2.27
Total	546,630,246	444,769,585	101,860,661				

[a] United States census.

REPORT OF THE COMMISSIONER OF EDUCATION.

PART I.

CHAPTER I.

EDUCATION IN GREAT BRITAIN AND IRELAND.

Great Britain and Ireland, constitutional monarchy; area, England and Wales, 58,186 square miles; population (estimated, 1896), 30,800,527; Scotland, 29,820 square miles; population (estimated, 1896), 4,189,270; Ireland, 32,583 square miles; population (census 1891), 4,704,750.

Information on education in Great Britain in previous Reports.

Title of article.	Report of—	Pages.
Detailed view of the educational system of England	1888-89	78-111
Religious and moral training in public elementary schools, England and Wales	1888-89	438-457
Brief view of the educational system, with current statistics	1889-90	237-248
Educational system of Scotland	1889-90	187-236
Elementary education in London and Paris	1889-90	263-280
Brief view of systems of England and Scotland, with current statistics and comparison with 1876 (England); 1880 (Scotland)	1890-91	125-134
Provision for secondary and for technical instruction in Great Britain	1890-91	135-150
Educational system of Ireland	1890-91	151-164
Elementary education in Great Britain and Ireland, 1892	1891-92	97-104
Technical instruction in Great Britain	1891-92	105-137
Elementary education in Great Britain	1892-93	203-208
Religious instruction under the London school board	1892-93	208-218
Great Britain and Ireland, educational statistics and movements, 1893	1893-94	165-185
Educational systems of England and Scotland, with statistics and movements, 1893-94	1894-95	257-273
The English education bill of 1896	1895-96	79-121
Education in Great Britain and Ireland, 1895-96, with detailed statement of the development of the English system	1895-96	123-135
Education in Great Britain and Ireland: Statistics, legislation, 1870-1897	1896-97	3-14
Elementary education in London	1896-97	15-27
Education in Great Britain and Ireland: Recent measures pertaining to the administration of the system; to the improvement of the teaching force; the extension of the curriculum—Proposals respecting secondary education—Universities and university colleges	1897-98	133-167

TOPICAL OUTLINE—Brief conspectuses of the systems of education in Great Britain and Ireland—Statistics, current and comparative—Current educational record of England—Evidences of progress in school administration and efficiency—Recent agitations due to conflicting interests of public and parochial schools—Signs of returning harmony—School attendance: Bill raising the age for exemption from 11 to 12 years; unsatisfactory conditions revealed by special inquiries—Measures affecting teachers: Terms of the superannuation law; unsuccessful effort to reduce proportion of pupil teachers—Schools for the blind and deaf—Report of the chairman of the London school board—Medical inspection for London schools—Public agencies for secondary education, viz, the science and

art department, the school boards, the county councils—Provision made by public agencies for science and technical instruction—Official report on secondary schools under private management—The board of education bill—The Welsh intermediate education law of 1889—The new scheme of classification for Scotland—University notes.

APPENDED PAPERS—(1) The proposed university for Birmingham—(2) The university of Wales, by C. C. Bremer—(3) Notes on the mediæval universities of Scotland, by D. J. Ritchie, professor in the University of St. Andrews.

BRIEF CONSPECTUS OF THE ENGLISH SYSTEM.

The education law of 1870 provided for a system of elementary education maintained by the combined action of State and local authorities.

The State assumed the responsibility of securing through local authorities—viz, elected school boards or private managers—adequate provision for the instruction of all children.

The annual grant for elementary schools, which had been allowed by the Government since 1833 for schools maintained by two great religious organizations, was henceforth to be applied only to schools fulfilling the conditions of "public elementary schools." These might be either board or private (voluntary) schools. Their work was systematized by Government regulations, which prescribed minimum conditions with respect to buildings, appointment of teachers, course of study, and length of sessions that should entitle a school to be classed as efficient. These regulations or codes are annually revised by the education department and submitted to the approval of Parliament.

The education department, which had been created in 1856 to administer the Government grant for elementary schools, became under the law of 1870 the central authority for the supervision of the public system. The annual grant distributed by the department, which began in 1833 with $100,000, has rapidly increased, reaching the sum of $22,405,930 in 1897. It was shared by 19,958 schools fulfilling the specified conditions.

For the inspection of the schools the department employs a force comprising at present 12 chief inspectors, 107 inspectors, 45 subinspectors, and 152 inspector's assistants.

There is also a special inspector of music, a directress of needlework, and an inspectress of cookery and laundry work. The experiment of appointing women to serve as subinspectors, first tried in 1896, has proved eminently successful. The reports of the inspectors determine the amount of the grant to which a school is entitled.

The school districts, or areas for which a school board should be formed under the law, are the metropolis, every municipal borough excepting Oxford, and every parish not included in the former. The number of school boards in 1897 was 2,502, representing 64 per cent of the population.

In districts having no school board, comprising at present about 36 per cent of the population, school attendance committees are appointed to enforce school attendance (law of 1876).

The schools that participate in the annual grant are characterized as board or voluntary, according to the management. Board schools, which enroll about 45 per cent of the elementary pupils, are maintained in part by local taxes, yielding $11,300,963 in 1897. Voluntary schools have no claim upon the local taxes, but draw a portion of their support—25 per cent in 1897—from endowments, subscriptions, and fees.

A law of 1891 provided a special grant for all schools, whether board or voluntary, remitting fees. This grant amounted in 1897 to $11,351,725. The number of schools

taking advantage of the fee grant in 1897 was 84 per cent of the total, and 86 per cent of the pupils were on a free basis. The voluntary schools, which are chiefly parochial, and which, as indicated above, still provide for more than half the elementary pupils (55 per cent on a total, in 1897, of 5,507,039), seek also to share in the rates or local taxes; but their effort is resisted, as they refuse to submit to the control of public local authorities. Their complaint of meager resources in comparison with those of board schools appears to be well founded and to constitute a serious evil in the system.

In 1897 a law was passed providing a special grant for the benefit of the "voluntary" schools, at the rate of 5 shillings per pupil. The measure was opposed as discriminating between public and private schools and as providing indirectly for sectarian endowment.

Up to 1880 the matter of making by-laws compelling school attendance was optional with district boards or attendance committees. A law passed that year empowered the education department to make compulsory by-laws for all school districts whose local authorities failed to take such action. Parents and employers violating the law are punished by fines and imprisonment. Attendance is therefore nominally enforced upon all children between the ages of 5 and 14, unless exempted under a by-law. The minimum age for exemption, which was fixed at 11 years (that is, 10 completed) by the law of 1893, was raised to 12 the present year; the by-laws also fix a grade not lower than the fourth which the child must have passed to secure an exemption certificate.

As the private schools recognized by the department are chiefly parochial, the question of religious instruction was one of serious consideration from the first. The law of 1870 provided that board schools should be strictly nonsectarian, and by a "conscience clause" prohibited private schools from forcing religious instruction upon children whose parents should object to the same. No public grants are allowed for religious instruction. The recent reopening of this question seriously threatens the prosperity of the system.

The scope of instruction in the elementary schools, which was originally very narrow, has been extended from time to time, particularly by the codes of 1875 and 1880. Up to 1882 the Government grant was apportioned at a certain rate per capita for those who passed individual examinations in the obligatory and in the optional branches. This system, popularly known as "payment upon results," was slightly modified by the code of 1882, which introduced a merit grant to be awarded at the rate of 1 to 3 shillings per capita on the basis of average attendance. By the code of 1895 for the system of annual formal examinations were substituted two annual visits by the inspector, to be made without notice, and average attendance became the basis for nearly the whole grant. Freedom of classification and improved methods of instruction have been thus promoted. The same liberal tendency is indicated also by a change in the character of evening schools. Since 1893 these have been regarded as evening continuation schools, and a wide choice of subjects has been permitted. The result has been an immense increase in their attendance, 121 per cent from 1893 to 1897, at which latter date the average attendance was 179,600.

The teaching force in the day schools comprises certificated teachers, 45 per cent of the total (130,773); assistant teachers, 25 per cent, and pupil teachers, 20 per cent. The last named are regarded as teachers in training, and an additional grant is made to the school on their account.

The average annual salary of certificated teachers is, for men, $613 as against $470 in 1870, and for women, $407 as against $287.

The cost of the maintenance of elementary schools in 1897 was $52,537,325. Board schools, enrolling 45 per cent of the pupils, expended 52 per cent of this amount, and voluntary schools, enrolling 55 per cent of the pupils, expended 48 per cent.

The expenditure was met by the various contributing sources in the following ratios:

	From Government grants.				Local sources.	
	Annual grant.	Fee grant.	Grants through science and art department.	Total.	Taxes.	Subscriptions, fees, etc.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Board schools	36.0	18.0	2.0	56.0	41.9	2.1
Voluntary schools	47.2	24.8	1.8	73.8	.....	26.2

Teachers' training colleges established by private managers also receive appropriations from the State. In 1897 they numbered 44 residential colleges, with 3,492 students, and 14 day colleges, with 811 students, and received from the grant $795,489.

Secondary education, or, as it is termed in England, middle-class education, is unorganized excepting in Wales, where adequate provision for secondary instruction under public auspices has been made under the Welsh intermediate education act of 1889. The Government has recently taken active measures to systematize and extend the provision for secondary education in England.

THE SYSTEM OF EDUCATION FOR SCOTLAND.

The Scotch system of education was organized by the law of 1872 on a basis similar to that of the English system. The general supervision was committed to the education department for Scotland under the same presidency as the English department, but with a separate vice-president and official corps. A grant for elementary schools was allowed as in England, the precise conditions for sharing in this to be annually determined by the "code" for Scotland.

The chief points of difference from the English system relate to—(1) Local control of schools: A school board is elected in every parish for the management of the parish schools, and in the towns for that of the burgh schools. (2) The scope of the system: The control of the board was extended from the first to higher grade schools, of which many were already existing as part of the public school provision of the country. Although not sharing in the treasury grant, these schools by subsequent laws have been allowed support from local taxes. (3) Compulsion: Whereas compulsion has been gradually introduced into the English system, the Scotch law made education compulsory for all children between the ages of 5 and 13 (raised to 14 in 1883), or until a certificate of exemption should be secured. The standard or grade for exemption was made the fifth (law of 1878); the age for exemption is 12 (law of July, 1899). (4) The matter of religious instruction: This was left to local authorities, with the simple restriction of a conscience clause making the attendance of children upon the religious exercises optional with the parents. A grant, in lieu of fees allowed by law of 1889 (England, 1890), has had the effect of making the schools free.

The elementary schools of Scotland, like those of England, are public (supported by the grant and local taxes), or voluntary (denominational), sharing in the grant, but not in the local taxes. The latter enroll only 22 per cent of the pupils, who numbered 716,893 in 1897. The school provision, which in 1872 was adequate for only 8.3 per cent of the population, is now sufficient for 20.22 per cent.

The current expenditure for the elementary day schools, amounting to $7,403,068, was derived as follows: From local taxes, 25 per cent; from other local sources (fees, subscriptions, etc.), 5 per cent; from the Government annual grant and fee grant, 70 per cent.

The teaching body includes pupil teachers, who formed 25 per cent of the whole

number employed—16,252 in 1897. The eight training colleges are denominational schools, supported in part by Government grants. They had 984 students in 1897, and a force of 85 teachers, and received from Government $179,445, which was 79 per cent of their whole income—viz, $225,586.

In 1882 the educational endowments act was passed, under which the endowed schools, which are in the main secondary, have been gradually reorganized. In 1885 the education department arranged for the inspection of these and other secondary schools. The number of schools availing themselves of the inspection in 1897 was 82. In 1888 the department adopted the plan of a leaving certificate for students who, on the completion of a course of secondary study, should pass an examination for the certificate.

The number of students examined in 1897 was 16,378, representing 362 schools.

The portion of the surplus of the liquor duties which falls to Scotland is largely applied to secondary (including technical) education—$160,000 in 1897 out of a total fund of $280,000.

Through the application of grants from this fund and the service of inspection and examination the secondary schools of Scotland have been brought into close relation with the education department.

SYSTEM OF EDUCATION FOR IRELAND.

The system of national education in Ireland dates from 1831, when a board of commissioners for education was created by the Government. In 1845 the board was incorporated by royal charter, and in 1861 a supplemental charter was granted under which ten members must be Roman Catholic and ten Protestant. The board is composed always of representative men who adhere to the policy of strict impartiality in religious matters.

The schools under the supervision and fostering care of the board are supported by State and local funds. They may be denominational schools (*i. e.*, Roman Catholic or Protestant) or mixed, in respect to religion, but the rights of parents in the matter are strictly guarded by a conscience clause in the school regulations, which provides that no child be allowed to attend a religious exercise of a denomination other than his own, except upon the written request of his parent. Under this arrangement very little trouble has arisen on the religious question.

The classification of schools and pupils as regards religious denomination in 1897 was as follows:

	Number of schools.	Enrollment.	Proportion of pupils—	
			Per cent Protestant.	Per cent Roman Catholic.
Schools mixed as regards religion	3,292	298,219	73.2	26.8
Schools attended solely by one denomination:				
Protestant	1,404	112,249	.....	.....
Roman Catholic	5,281	387,742	.....	.....
Total enrollment	.....	798,210	24.1	75.9

Grants in aid for the building of schoolhouses are allowed by the commissioners, but must be proportioned to the amount raised locally. The State pays also the larger proportion of the salaries for teachers, requiring a minimum annual augmentation from local funds of £12 ($60). Altogether the State bears about 94 per cent of the annual expenditure for the schools, which amounted, in 1897, to $5,822,999.

To avoid religious complications the State provides the text-books for secular branches, which are issued at a small cost to the pupils.

"For purposes of Government supervision the country is divided into 60 districts,

which are grouped in 6 divisions, each in charge of a head inspector. Under these are 29 district inspectors, 7 unassigned inspectors, and 10 inspectors' assistants. Inspectors and their assistants are appointed upon examination testing their scholastic and professional qualifications."

Local civil authorities have no control over the schools. The local managers of schools, who are generally clergymen, come into direct relations with the board of commissioners. They appoint and dismiss teachers and arrange the details of the school work. Of a total of 2,921 managers in 1897 four-fifths were clerical.

The commissioners have direct control of a special class of schools called "model schools," for which they provide the buildings.

"They are intended, as their name indicates, to afford models of the best methods of instruction and organization, and to serve as practice schools for students in training colleges or normal schools." These schools numbered 30 in 1897, with an enrollment of 10,335 pupils, included in the enrollment previously given.

A compulsory school law was passed in 1892, but it has been imperfectly enforced, and Ireland still stands below the other divisions of the United Kingdom in respect to school attendance, as is shown by the most recent statistics. These give the following rates of attendance to enrollment:

	Per cent.
England and Wales	81.5
Scotland	84.45
Ireland	63.9

Convent and monastery schools afford a large part of the provision for elementary education, and receive, under certain conditions, aid from the Government.

The number of such schools fulfilling the conditions for aid, according to the latest report, was 337, with an enrollment of 105,342 pupils.

For the training of teachers there are one national and three denominational normal schools, which receive grants in aid from the Government. There were 801 students in training in 1897. Provision for agricultural instruction is an important feature of the system. Instruction in the theory of agriculture is compulsory in all rural schools for boys in the fourth, fifth, and sixth classes, and optional for girls.

The commissioners maintain also two model agricultural schools, and in 1897 they reported 48 school farms in connection with elementary schools and 101 schools having school gardens attached.

An intermediate education board was established in 1878, which derives a yearly income from the Government, amounting to $194,910 (in 1897), besides revenues from local taxation amounting in the aggregate to $244,350. This gives for 1897 a total income from public sources of $439,260.

The function of the board is the examination of intermediate or secondary pupils. In 1897 the number of pupils examined was 9,605 (7,182 boys and 2,423 girls), and on the results of these examinations payments were made to 367 schools, amounting in the aggregate to $244,350.

The total amount expended on technical education in Ireland out of rates (local taxes) raised under the technical instruction acts and the public libraries acts by 11 local authorities during the year 1895–96 was $21,379, and the estimated total expenditure during the year 1896–97 was $22,637.

HIGHER EDUCATION—GREAT BRITAIN AND IRELAND.

Higher education is provided in Great Britain and Ireland by universities and detached colleges, and professional education by special schools of medicine attached to the principal hospitals and by schools of law and of theology. The multiplication of local colleges in England and the increase of university affiliations and influence are noticeable features of the recent history of higher education.

The chief statistics of education from the latest official reports are tabulated below.

Summary of educational statistics—Great Britain and Ireland.

Sources of information.	Institution.	Date of report.	Registered students or pupils.	Professors or teachers.	Expenditure.
	GREAT BRITAIN.				
	England and Wales.				
Statesman's Yearbook, 1899.	Universities:				
	Oxford (23 colleges)	1898	*a* 3,412	91	.....
	Cambridge (19 colleges)	1898	*a* 3,019	122	.....
	Durham (1 college)	1898	174	18	.....
	London (2 colleges)	1898	1,422	164	.....
	Detached colleges (13)	1898	8,711	709	.....
	University colleges for women (4)	1898	406	*b* 54	.....
	Bedford College for Women	1898	223	25	.....
	Royal Holloway College for Women.	1898	110	5	.....
	Technical: City and Guilds of London (4 institutions).	1898	1,515	71	.....
Official return	Secondary schools	1897	*c* 291,544	*d* 34,318	.....
Official report	Elementary day schools	1897	5,507,039	130,773	$52,537,325
	Night schools	1897	358,628	.....	
	Training colleges for elementary teachers.	1897	4,690	.....	*e* 1,173,923
	Scotland.				
Statesman's Yearbook, 1899.	Universities:				
	Aberdeen (1 college)	1898	749	58	.....
	Edinburgh (1 college)	1898	2,813	100	.....
	Glasgow (1 college)	1898	1,918	102	.....
	St. Andrews (2 colleges)	1898	254	31	.....
	Dundee University College	1898	160	32	.....
	Glasgow Technical College	1898	260	20	.....
Official report	Elementary day schools	1897	724,628	16,252	7,403,068
	Night schools	1897	59,954	.....	
	Training colleges for elementary teachers.	1897	460	.....	.....
	Ireland.				
Statesman's Yearbook, 1899.	Universities:				
	Dublin University (1 college)	1898	1,084	66	.....
	Belfast Queen's College	1898	343	23	.....
	Cork Queen's College	1898	187	23	.....
	Galway Queen's College	1898	91	37	.....
Official report, 1897–98.	Elementary day schools	1897	*f* 816,001	13,007	5,822,999
	Night schools	1897	1,255	.....	.....
	Training colleges for elementary teachers.	1894	808	.....	.....
Official report, 1897–98.	Department of science and art:				
	Science schools and classes	1897	*g* 197,791	.....	*h* 3,960,229
	Art schools and classes	1897	*g* 146,720	.....	

a Undergraduates.
b Incomplete.
c Not including Wales. Statistics very incomplete as regards the number of schools. Of the total pupils, 43 per cent were under 12 years of age.
d Includes 11,978 visiting teachers.
e Includes household expenditure for 47 residential colleges.
f Average enrollment.
g In addition to pupils in elementary schools receiving grants from the department.
h Total expenditure by department of science and art.

Principal statistics of elementary schools at specified dates.

	England and Wales.				Scotland.	
	1870.	1874.	1876.	1897.	1880.	1897.
I. Estimated population	22,090,163	23,648,609	24,244,010	31,055,035	3,705,314	4,222,784
II. Number of schools, day and night, inspected	8,281	13,163	14,368	24,074	3,065	4,105
Pupils:						
Accommodation—						
1. Day schools—						
Voluntary	1,878,584	2,626,318	2,870,168	3,667,434	602,054	843,769
Board		245,508	566,150	2,552,724		
2. Night schools (not connected with day schools)—						
Voluntary		10,507	14,421	116,991	1,361	3,422
Board			389	115,240		
Enrollment—						
Day schools	1,693,059	2,497,602	2,943,774	5,507,039	534,428	716,893
Average attendance—						
1. Day scholars—						
Voluntary	1,152,389	1,540,406	1,656,502	2,465,193	404,618	605,389
Board		138,296	328,071	2,023,850		
2. Night schools		48,690	49,858	179,600	14,397	51,967
III. Number of teachers, day schools—						
Certificated	12,467	18,714	23,053	58,814	5,330	9,893
Assistant	1,262	2,489	3,173	25,206	440	2,033
Pupil	14,304	27,031	32,231	32,598	4,582	4,170
Additional women teachers				14,155		156
IV. Current expenditures			$16,584,356	$52,537,325	$4,122,879	$7,403,063

CURRENT EDUCATIONAL RECORD OF ENGLAND.

The foregoing statistics show the great development in the means of education in England since the passage of the school law of 1870. At that time there was provision in elementary schools for 8.75 per cent of the population; in 1897 the provision was adequate for 20.01 per cent. This gain, equal to 128 per cent, is the measure of the determined effort made to rid England of gross illiteracy. The deficiency of school places having been overcome, more and more attention is given to improving the quality of the schools. While results here are not so easily measured, detailed statistics show a steady advance in respect to school attendance and the duration of school life. These are clear indications of the increased hold of the schools upon parents and children. Even the recent disturbances in the system have not interrupted the progress of the schools in these respects, as is shown by the following particulars:

ELEMENTARY DAY SCHOOLS (ENGLAND AND WALES).

Table showing classification of pupils, by age, for four successive years.

	1894.	1895.	1896.	1897.
Under 7 years of age	1,635,794	1,653,787	1,710,080	1,752,337
Between 7 and 13	3,334,482	3,395,185	3,453,262	3,492,026
Between 13 and 14	181,136	197,327	204,607	206,349
Over 14	47,329	53,170	55,040	56,327
Total	5,198,741	5,299,469	5,422,989	5,507,039

Cost of maintenance per child in average attendance.

	1894.	1895.	1896.	1897.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Board schools	2 8 9¾	2 10 1¾	2 11 11¾	2 13 2½
Voluntary schools	1 18 1¾	1 18 11¼	1 19 6¾	2 0 6

Total current expenditure for public elementary education.

1894	£9,147,825
1895	9,670,090
1896	10,212,688
1897	10,507,465

Rate of increase in school accommodation and attendance as compared with increase of population.

Year.	Population, increase per cent.	Accommodation, increase per cent.	Enrollment, increase per cent.	Average attendance, increase per cent.
1894–95	1.11	1.79	1.94	2.35
1895–96	1.33	2.27	2.33	2.26
1896–97	1.10	2.35	1.54	1.48

Pupils examined in studies of secondary grade (algebra, geometry, Latin, French or German, physics, chemistry, etc.).

Year.	Number examined.	Number passing.	Percentage of scholars presented to total number on register.
1894	142,480	113,384	2.1
1895	162,103	128,012	2.4
1896	175,087	138,814	2.5
1897	197,812	156,314	2.8

The most significant of the foregoing tables is that relating to pupils taking secondary studies. The tendency to prolong school life thereby indicated is shown also by the increasing proportion of children in the upper grades but not included among those who pursue secondary branches. Of this tendency the official report says:

In 1870 the average term of school life, as shown by the numbers on the registers of public elementary schools, was 3.76 years; but as the percentage of average attendance to the number on the registers was only 68.06, the actual average term of school attendance was only 2.55 years. The latter figure had in 1880 risen to 5.19 years. In 1890 it stood at 6.13 years. In 1897 it was 7.05 years. Thus since 1870 the period actually spent under school discipline by the average pupil attending a public elementary school in England and Wales has been nearly trebled.

CAUSES OF THE RECENT AGITATIONS.

The English system of elementary education illustrates in its origin and gradual development the persistence of two great interests, the

religious interest as embodied in the established church and that of local civil authorities. In a great measure the recent educational upheaval is due to the conflict of these interests. The religious authorities are alarmed for the welfare of their schools, whose resources and consequent efficiency are surpassed by the board schools, especially in the large boroughs. The boroughs, on the contrary, are jealous for their rights and intent upon preserving the impartial policy hitherto pursued by the Government. The situation has been aggravated by new educational demands growing out of new social and industrial conditions.

An endeavor was made by the education bill of 1896 to rid the system of the chief causes of disturbance by reorganizing the local control of schools, and at the same time, to meet the broader demands of the hour, by a better adjustment of the agencies for elementary education on the one side and those for the fostering of secondary education on the other. The defeat of the measure left the Government with an unfulfilled pledge of assistance to the voluntary schools, i. e., private schools chiefly parochial.

This pledge was met in part by the bill carried through Parliament in the session of 1897, providing a special grant for voluntary schools at the rate of 5 shillings per capita of their enrolled pupils.

The measure is criticised as inadequate in respect to the amount of help it affords, unfairly discriminating in its tendency, and further complicating the local control of schools. This it does by providing for the federation of schools entitled to the grant, which in practice tends to make the diocese the unit of control for the special grant. There are, however, signs that the crisis of unrest has passed, and that the troublesome questions arising from the dual control of elementary education will be adjusted on an equitable basis. This outcome may be reasonably inferred from the fate of a remarkable resolution introduced into the House of Commons the present session, March 7, which was as follows: "That, in the opinion of this House, the system of primary education in England and Wales inflicts upon a large portion of Her Majesty's subjects a serious grievance which demands the immediate attention of Parliament."

The resolution, as plainly shown by the speech of its author, was directed against "voluntary" schools; but it drew on an animated debate, during which the advantages and disadvantages of the dual system were discussed in a candid manner and in the spirit of compromise rather than of contention. The resolution itself was defeated by a majority of 123 votes in a total of 285.

Mere partisan contentions, it is evident, are giving way before the supreme question of how to secure adequate instruction and training for all the children of the realm.

CURRENT MEASURES AND DISCUSSIONS.

We present here, from various sources of current information, a résumé of the questions that have been uppermost during the year:

School attendance.—A bill raising the age limit for exemption from school attendance from 11 to 12 years, introduced into the House of Commons March 1, 1899, by Mr. Robson, and which at this writing awaits only the royal signature to become law, brought to a crisis a long series of efforts respecting school attendance. The importance of the measure will appear from a review of the conditions leading up to it.

The education law of 1870 empowered school boards to make by-laws respecting school attendance; the law of 1876 gave like authority to school-attendance committees in districts having no school boards, and also prohibited the employment of children under 10 years of age. A law of 1880 prohibited exemption from school attendance for children under 10, and the law of 1893 raised the age to 11. It was further ordered by the law of 1876 that no child should be employed between the ages of 10 and 14 without a certificate from a government inspection, showing that he had passed the fourth standard (about the same as fourth grade in our city schools) in reading, writing, and elementary arithmetic, or that he had made a certain attendance (250 attendances for each of five years) at some elementary school recognized by the department as efficient.

Under these provisions a system of half-time attendance has developed, for which the annual code prescribes regulations. The latest issued are as follows:

> The term "half-time scholar" means a scholar certified by the local authority to be employed in conformity with the by-laws, or, if not subject to the by-laws, in conformity with the elementary education act, 1876, or any other act regulating the education of children employed in labor, and in either case recognized by the department as a half-time scholar.
>
> "An attendance" means attendance at secular instruction (*a*) during one hour and a half in the case of a scholar in a school or class for infants; (*b*) during two hours in the case of a scholar in a school or class for older children; and during one hour and twenty minutes in the case of a half-time scholar. The attendance of a half-time scholar for less than two consecutive hours is not recognized, but such two consecutive hours are reckoned as an attendance and a half.

At the Berlin Conference of 1890 England found herself in the category of countries that permit the employment of children at the lowest ages and show least solicitude for their education and welfare. The delegates pledged themselves to use every effort to remove the stigma, and in this they have been ably supported by the educational authorities and the Teachers' Association. The press has also given valuable assistance, especially during the past year. The Daily News even went so far as to employ a special commissioner to investigate the condition of half-timers in the factory centers of Lancashire and Yorkshire, from which came the chief opposition to an advance of the school

age. The Woman's Industrial Union has been unremitting in its endeavors to arouse public opinion on the subject.

As a result of these efforts the bill raising the age for exemption was carried through the second reading by a majority of 258 in a total of 517 votes.

It appeared from official statistics that the number of half-timers in 1897 was 119,747, of whom 54,491 were employed in factories. Of these 84 per cent were in the mills of Yorkshire and Lancashire. The term half-time, as applied to these children, is deceptive, as it means in nearly every case two hours or two hours and a half in school daily as against six hours in the mill. The rejection of the bill was urged by the member from Stockport, confessedly in the interests of Lancashire. This member declared that of 90,000 factory operatives belonging to the unions 74 per cent had been heard on the question, and of these 90 per cent were opposed to the measure. It was greatly feared that this ignorant but obstinate opposition would wreck the measure, but it finally yielded to the influence of a telling array of facts proving beyond question that juvenile labor brings down adult wages.

Mr. Robson, in moving the second reading of the bill, summed up the situation as follows:

Mr. Robson (South Shields) rose at ten minutes past 12 to move the second reading of his bill to raise the age for half-time labor from 11 to 12. The bill, he said, would come into operation on January 1, 1900; and it contained a proviso by way of a saving clause preventing it from having any operation with regard to those children who on January 1 next had already obtained total or partial exemption from attendance at school. The bill embodied a proposal to which the Government was bound by a definite international engagement which had been recognized by both parties in the State and which both parties had made attempts to carry into effect. At the Berlin conference in 1890 it was proposed that the minimum age for child labor should be raised to 12, and the right honorable gentleman (Sir J. Gorst) who represented this country obtained explicit authority from Lord Salisbury to assent to that proposition. An attempt was made to carry out that engagement in 1893 on the part of the then Liberal government, but it was not fully carried into effect, and the age was only raised from 10 to 11 as a provisional compromise between the Government and those who advocated that there should be no extension. It was urged, then, on behalf of Lancashire, that to raise the age two years would cause a great deal of derangement in the industry of that county, and that it would be better to proceed by two steps instead of one, and that was done. He found, however, that those who opposed the present bill said that the act of 1893 was not to be regarded as a compromise, but as a settlement of the question, which was an entirely erroneous view. It should be a cause of alarm to them that England should have become a laggard among European nations in regard to the education given to children. In France the conditions were much more stringent than in this country, and in Germany Sir P. Magnus reported that child labor had practically disappeared from the factories. In these countries not only did they keep a child at school longer, but they were incomparably more strict about regular attendance and more careful about qualifications of the teachers than we were. The argument that the effect of limiting child labor would be to expose us to foreign competition had disappeared, because everybody admitted that the foreigner was in this matter well ahead of us. He had deliberately left us without competition in this matter—and why? The

statesmen of Germany were intensely keen upon the development of the trade of their country, and a great rivalry prevailed between that country and England, but the fact was that in their opinion they were not missing but making a point, having regard to the physical and intellectual development of the powers of their people. Everybody recognized nowadays that the great secret of the success of Germany in nearly every sphere of human energy was due to the fact that she began this policy earlier and had pursued it more strenuously than any other country in the world. No doubt they would be told that the poverty of the working classes was a reason why this reform should not be made, but the working classes of this country were not poorer than those of Germany or France. Having explained the "half-time" system, the honorable gentleman complained that the standard for half-timers was fixed locally. He said the whole system was a careful endeavor to prevent any test being applied which showed whether the child understood its work or not. The vice-president of the council had himself pointed out that 20 per cent of the children who learned reading, writing, and arithmetic when they left school lost the faculty altogether. The prisons report for 1897 stated that 96.9 per cent of prisoners could neither read nor write, or could only do so imperfectly. This showed that an enormous number of children, especially those of the poorer classes, escaped our education system and, as recruits, joined the great army of those who were unfit to exercise the duties of free citizenship, which was one of the greatest dangers of the system of self-government in this country. That was the idea which prevailed in the United Kingdom, for Scotland and Wales were enthusiastic about education, and England was fairly well resigned about it, except in two or three districts where a particular trade was carried on, as in the case of Lancashire.

Even Lancashire did not now stand where she did before. Mr. Mawdsley, one of the chief leaders of the Lancashire textile industry, stated that he would not send his children to the mill at an early age, because early life in the factory affected the health, stunted the growth, and arrested the education of a child. So long as he had sufficient to keep them, he added, he would allow them to receive joys and advantages which belonged of right to child life. Although the Bolton cotton spinners had said that life in a factory was not unhealthy for a child, when they came to their own case they argued that it led to chest disease and rheumatism, and made an eight-hour day imperative. At the age of 12 the half timer showed a shortcoming in height, as compared with the average child, of 2.3 inches, and at 13 the difference was 3 inches, while there was a corresponding diminution in weight. The system of half timers disorganized the schools, and it had been shown that in 1,130 cases the earnings of the families from which these children came averaged £3 10s. per week, which demonstrated that the argument as to poverty was not well founded. It was said that for the sake of becoming technically educated in his trade it was necessary that a child should not have the half-time age raised. In Bolton there were between 3,000 and 4,000 half timers, but though there were 538 scholarships given in that town for technical and other education, only 1 had been obtained by a half timer. He heard from an honorable friend that that child was not a half timer when he obtained it. It was not easy for a nation to prosper by depressing the mental or physical development of the young. Even if the country did prosper by such means, he should say, "Beware of such prosperity!" Prosperity, unaccompanied by modern advancement, was a very dangerous thing either to the individual or to the state. Material prosperity, purchased at the cost of such advancement, was a forerunner of national danger.

Mr. Kenyon (Bury), in seconding the motion, said he did so because the whole standard of education throughout the world was being advanced every year, and other nations were making progress in this direction more rapidly than we were. In his own district the constant complaint of the technical-school committee was that the young girls and boys who attended the school were deficient in elementary

knowledge and could not grasp the education sought to be given to them. From an intimate knowledge of mill work and mill hands, he could say advisedly that a child could learn just as well at the age of 12 or 13 as at the age of 11. He was familiar with a case in which a boy of 17 went straight from one of the public schools to the loom, where in a fortnight he learned sufficient to entitle him to the average wage. The bill would certainly do good, because it would brighten the intelligence of the workers. The most difficult man to manage in any works was the man who could not read or write. There was not much to complain of in the sanitary condition of the factories nowadays, but what he did especially object to was the time children in factories had to get up at in the morning. No one could ever persuade him that it was a good thing for a child to be pulled out of bed at half past 5 in the morning. (Schoolmaster, March 4, 1899, p. 377.)

The case of half timers aside, it appears that the condition of school attendance is on the whole extremely unsatisfactory as regards the amount of schooling required by the law, the means of enforcing the compulsory law, and the regularity of attendance on the part of registered pupils. As these matters are wholly in the hands of local authorities the conditions differ widely in different districts. In London the evil of irregular attendance has become so great that several public conferences have been called for its consideration. Such a conference was held under the auspices of the National Teachers' Union in January of the present year, at which the president of the Union, Mr. Waddington, presented the following statement:[1]

Out of 754,000 scholars on the books of the metropolitan schools 145,000 are always away. In addition there are large numbers of children of school age in London who escape the schools entirely, and whose names do not appear on the roll of any school. Out of every 6 children of school age, and belonging to the class that use the elementary schools, 1 is not enrolled, and of the 5 enrolled 1 is always away—not always the same one, but nearly always the same one. Of the administrative counties 38 have a higher percentage of regularity of attendance than London, and, compared with the county boroughs of England, London stands thirty-ninth. Taking Glasgow as the Scottish town whose conditions are most closely analogous to those of London, the comparison stands: Glasgow, 89 per cent; London, 81 per cent.

The financial aspect of these figures deserves the attention of the London ratepayer. The three-quarters of a million scholars on the books of the schools of the London schools may be divided into three groups: Two-thirds of the scholars are regulars; one-sixth of the scholars are casual irregulars; one-sixth of the scholars are chronic irregulars. The machinery for enforcing compulsion exists almost wholly for the "chronic irregulars." The regulars would attend whether compulsion existed or not; their parents believe in education. The "casual irregulars," where possible, would disappear if the "chronic irregulars" were dealt with properly. This is a serious financial burden to the Londoner. Last year the London school board spent nearly £50,000 in endeavoring to secure the attendance of the "chronic sixth," and 145,000 scholars were absent each time the school was open. Supposing London had reached the standard attained by Glasgow the result would have been an increased grant from the education department of £80,000. The bill stands thus:

Cost of endeavoring to carry out the law	£50,000
Loss of grant compared with Glasgow	80,000
Total	130,000

[1] See Schoolmaster, January 28, 1899, p. 170.

Each "chronic irregular," therefore, costs something like £1 a year, and grows up a danger to the city and a future tax on the nation. Speaking of these education derelicts, Sir John Gorst said:

"Between the ages of 5 and 14 they were surely reclaimable, but if nothing was done they grew up to require an enormous expenditure in police and magistrates and prisons in order to prevent them from preying on society."

But this by no means represents the whole cost to the city. No small portion of the time of the teachers is spent in endeavoring to secure the regular attendance of the children. The irregular scholar retards the progress of the regular scholar. Much of the time of the teacher is taken up recovering the deficiencies arising from the neglect of the parent of the irregular. The parents of the regular scholars have a serious interest in the neglect of the parents of the irregulars. No impartial person will deny that the enforcement of the compulsory clause is a failure. Where lies the blame? Offenses against the education acts are not viewed in the same light as offenses against other penal laws. Sir John Gorst very truly pointed out that riding a bicycle on the footpath or the owning of an unmuzzled dog led to summary treatment by the magistracy, while offenses against the education acts could be perpetrated with impunity. The fact is, the public conscience revolts at the trial of offenses against the education acts being dealt with in the ordinary police court. The legislation of the last two decades has so multiplied the cases requiring the attention of the London magistracy as to overcrowd the daily work of the London police courts. There is not time to deal with the "chronic irregulars," and the number, therefore, grows apace. Magistrates lay down conditions which, although probably rendered necessary by the pressure of other business, make the enforcement of compulsory school attendance impossible. For instance, the number of summonses to be issued is limited. No matter how many offenses may be committed, only a certain number must be prosecuted.

The position last July was that after the most careful consideration the authorities decided that 1,142 persons had broken the law. The magistrates decided that only 108 could be called upon to appear before them until the offense was too old to be dealt with, and it must be borne in mind that the law has not only been broken, but flagrantly broken, before the case is ordered for prosecution. Carefully ascertained offenses against the education acts are ignored until enforcement becomes well-nigh impossible. Much of the "casual irregularity" would disappear if the "chronic irregulars" were dealt with summarily, and the offenders were visited while the offense is new. The failure to obtain effective treatment of the worst cases makes it impossible to deal effectively with irregularity in its milder stages. I am convinced that less tabulation and more visitation would be beneficial in removing some of the causes. The fine is altogether inadequate. It too often pays to break the law. Before me lies a list of 24 cases in the Marylebone division, where the average number of prosecutions reaches 13. Taking into consideration the procedure before prosecution, there can be no doubt that these children have been subject to prosecution almost from the day they entered the school. The maximum penalty ought to be increased to £1, and its infliction ought to be assured for cases of gross and continued neglect. A peripatetic stipendiary magistrate ought to be appointed to deal only with cases under the education acts. No doubt the majority of the metropolitan magistrates are anxious to administer the law, but the congestion of the courts makes effective administration impossible. Yet when account is taken of the attention given to the conscientious objector under the vaccination act, it would appear that more attention might have been given to the "conscientious evader" of the education acts. The last quarter of a century has taught us how expensive ignorance finally becomes. "Make your educational laws strict," writes Ruskin, "and your criminal ones may be gentle; but leave youth its liberty, and you will have to dig dungeons for age." Mr. Waddington concluded by moving—

"That this conference, while recognizing that the great bulk of the working-class parents send their children to school with commendable regularity, and often at

great personal self-sacrifice, desires to direct public attention to the serious obstacle to educational progress in London arising from the fact that a large number of children of school age are not found upon the registers of any school, and that of the 754,000 children who are upon the registers, no less than 145,000 are absent every time the schools are open; that of the many cases of irregular attendance, by far the larger number are absent without reasonable excuse, and that this irregularity of attendance is not only a source of serious injury to the children who do attend school, but renders a large part of the teachers' work unfruitful."

The second resolution, moved by Mr. Bowden of the London board, touched upon the relation between illiteracy and crime. It was as follows:

This conference desires to draw attention to the fact that out of the persons confined in prisons and convict establishments in England and Wales in the year ending March 31, 1898, no less than 20.9 per cent are recorded as absolutely illiterate and 62.6 per cent as only able to read and write imperfectly, while there exists indisputable evidence that street roughs, popularly known as "Hooligans," were the truants and other ill-governed children who were never brought under the disciplinary influences of a public school.

Mr. Bowden said the school is the place where character is formed, and it is because they believe that there they can prevent boys from becoming criminals that they wish to call the attention of the public to the absence of large numbers of children from school. Statistics since 1870 show very clearly that a diminution has taken place in the number of crimes, and that, too, among the very class that has come under the influence of the education provided by the act of 1870. Under these circumstances he considers they are justified in asking that steps shall be taken for compelling parents to send their children to school regularly. Mr. Bowden went on to show that in criminal statistics a man is entered as being well educated if he can pass Standard III, and yet even with this low standard a very small proportion of criminals can be described as being well educated. Recently the chairman of the Gloucester school board stated that out of 27 of their pupils who eventually found their way into prison, 25 were those who had been truants or who had attended school irregularly. Mr. Bowden added that there is an amount of irregularity that brings the law into contempt, and he further urged that the ratepayers should remember that the making of a criminal is a very expensive matter, and that a criminal costs the community £40 a year for the whole of his life. Thus, even upon the ground alone of expense, it is cheaper to compel the children to attend school.

Both resolutions were unanimously adopted.

Dr. Macnamara, of the London board, moved—

That, in the opinion of this conference, the existing machinery for securing regular attendance at school has to a great extent failed in its object. Cases of gross irregularity are not brought before the magistrates with sufficient rapidity, and the machinery of the police courts is neither satisfactory nor sufficient for dealing with those cases, while some of the magistrates themselves seem disinclined to administer the acts which require attendance at school.

He supported his position by detailed accounts of the police-court proceedings in cases brought before them.

The resolution was adopted, as were also the two following:

1. This conference is of opinion that special courts should be established for dealing with school-attendance cases, so that the parents and others who appear shall not be compelled to associate with the usual conditions of a criminal court.

2. This conference is of opinion that age and attendance should be the sole qualifications for exemption from attendance at school, and is of opinion that it is desirable that the maximum penalty allowed under the English act for the nonattendance of children at school should be raised from 5s. to £1, the maximum penalty under the Scotch act.

The press gave wide publicity to the proceedings of this conference, which has awakened intense interest on the subject.

According to estimates presented by Sir John Gorst, the vice-president of the education department, after making all allowance for cases of legal exemption, there are in the Kingdom 1,000,000 children between the ages of 5 and 14 who ought to be in the day schools, but of whom the authorities have no information. With respect to this million, the vice president said, in a speech before the Mechanics' Institute of Bradford, that—

> The mere carrying out of the present law would never succeed in bringing up the attendance of the children to anything like the proper figure. He would like to call attention to the extreme importance of this derelict million of children from an economic point of view, in the welfare of the country. This was the class from which criminals and paupers were mainly recruited, and now, while they were of the tender age of from 5 to 14, they were reclaimable. If nothing was done a great proportion of them would grow up in such a way as to require an enormous expenditure in police, judges, prisons, and so forth, to prevent them preying upon society. If reformed they would grow up honest men and women, and instead of being a loss would enrich the country by their intelligence and their labor. [Applause.]

It is further estimated that of the number of children in attendance between the ages of 10 and 11—in round numbers 6,000,000—one-fifth leave school when the age of 12 is reached and one-sixth became half-timers.

In submitting the budget estimates the vice-president showed that the percentage of average attendance[1] for four successive years has been as follows:

Year.	Rate.	Year.	Rate.
1895	81.16	1897	81.50
1896	81.55	1898	81.66

In Wales the rate of average attendance was only 76.6 per cent; in Scotland it rose 84.3. The rate for England—81.6 per cent—is the highest attained since the passing of the education law of 1870. The vice-president expressed the opinion that the forthcoming report for 1899 would show that there had been great advance made, owing to the energy and attention of local authorities in securing better attendance.

The interest in the case of the half-timers led to the investigation of the employment of children who attend as full-time scholars, but many of whom are so overworked that they get little benefit from instruction.

[1] Average attendance for any period is found by dividing the total number of attendances made during that period by the number of times for which the school has met during such period.

The matter was brought to the attention of the education department by the Woman's Industrial Council, and as a result of their representations the department sent out a form of inquiry to all elementary schools designed to ascertain, as regards the children in full-time attendance, the number known to be working for wages or employed for profit, with their age, standards, occupations, hours of work, and rates of pay.

The results of this inquiry were summed up by Mr. Gorst in the House of Commons as follows:

A painful and disappointing return, which cast a very lurid light on the social condition of large classes of the population, and propounded a most difficult social problem for governments and parliaments to ponder over. When the return was made up it furnished the names of 144,000 children on the books as full-time scholars who were engaged as laborers for wages or profit—110,000 boys and 34,000 girls; and the few returns which came in since have added 1,000 more. But the returns reveal upon the face of them that this is only a part of the number of children so employed, and that there are multitudes of children working in this way whose names do not appear in the return. In the first place the names of children have only been returned who were in regular employment. No notice is taken of children in casual or seasonal employment. One correspondent says:

"Many children are kept from school for days, sometimes weeks, together, for such work as picking stones in the fields, weeding, sheep-shearing, harvest, and potato picking."

Another correspondent says:

"During the hat-sewing season, which usually lasts from about February to Whitsuntide, many girls of all ages are employed, both before and after school hours, in sewing hats for their mothers. Some have been known to work from 6 a. m. to the time for coming to school and again from school closing in the afternoon till bedtime."

The names of none of these children appear in the return.

The ages of the children dealt with in the return are as follows: Six years of age and under, 131; between 6 and 7, 1,120; between 7 and 8, 4,211; between 8 and 9, 11,027, and between 9 and 10, 22,131. As to the character of the work done by the children, Mr. Gorst said: I find a little boy of 6 is engaged peeling onions twenty hours a week for a weekly wage of 8d. Another delivers milk twenty-eight hours a week for the weekly wage of 2s. Another little boy of the same age is engaged in turning hose for twenty hours a week, and he is paid by 6d. being credited weekly to his savings-bank account. There is a little boy engaged in pea picking at 1s. 3d. a week, and the champion boy, who is under 6 years of age, works in a brick field at brick-making and earns a wage of 3s. 6d. a week. A little girl under 6 carries milk for thirty-five hours a week for her parents, and she receives no wages. Another little girl is engaged in seaming hose for fifteen hours at a weekly wage of 1d. Another is a nurse girl—a nurse girl under 6—who works twenty-nine hours a week for 2d. and her food, and another girl under 6 is an errand girl and runs about the streets fifteen hours a week for a wage of 6d. Of boys, there are selling newspapers 15,182; hawking other articles about the streets, 2,435; other occupations, such as knocking people up early in the morning and taking out dinners, 8,627; shop boys, 76,173; boys engaged in agriculture, 6,115, and odd jobs, 10,636. Then come the girls, minding babies, 11,585; housework and laundry work, 9,254; needlework and light work, such as making card boxes and things of that kind, 4,019. Now I come to the hours of employment. Under ten hours a week, 39,355; from ten to twenty hours, 60,268; from twenty-one to thirty hours, 27,008; from thirty-one to forty hours, 9,778; from forty-one to fifty hours, 2,390; over fifty hours a week, 793, of whom 75 are actually employed over seventy hours a week. Perhaps the committee is curious to know

what these boys and girls who are employed seventy hours a week work at and what wages they get. A boy of 10, in Standard IV, is returned as a farm laborer working seventy-two hours a week for a wage of 3s. A boy of 12, in Standard IV, is also returned as a farm laborer working eighty-seven hours a week for a wage of 2s. 6d. A newspaper boy of the age of 12, in the Sixth Standard, works one hundred hours a week—that is, including Sundays—and receives 3s. 6d. and his meals. A boy of 12, in Standard III, works in a marine-store dealer's shop, is employed seventy-four hours a week, and receives 1s. 6d. and his meals. A boy of 10, in Standard IV, is a donkey driver for eighty hours a week at a wage of 6s. In London there is a boy of 12, in the Fifth Standard, employed in a chemist's shop for seventy-eight hours a week at a wage of 5s., and there is an errand boy of 12 years engaged at a dairy. He is in Standard VII, and therefore, presumably, a very promising lad. He works seventy-two hours a week for a wage of 4s. I think it would be economical for the country to deliver that boy from those conditions, as it is evident something might be made of him. There is a girl of 13 years of age in a shop. She is in Standard V and works seventy-two hours a week for a wage of 2s. There are several girls of various ages and in various standards who carry bark for woodcutters. They work seventy and one-half hours a week for a wage of 6s. Now, of these overworked children there are several concrete instances given in the return, and I have picked out one or two as illustrations. Here is one: "This boy rises between 3 and 4 every morning, starts out at 4.30 a. m. to wake up 25 working men, each paying him 3d. per week; returns from his rounds about 5.30, but does not go to bed again, as at 6 o'clock he has to go a round as 'newspaper boy' till 9 o'clock, when he comes to school. He is a very regular boy, but is often half asleep, especially in the afternoons of hot days." Another boy "acts as latherer to a barber for thirty-two hours for a wage of 2s. He is at work on the whole of Saturday till 11 p. m., and for three hours on Sunday." Another boy is a "greengrocer's boy, aged 12, Standard II, starts for London at 2.30 a. m., returns about 9.30, and then attends school." Again, there are "two girls aged 12, in Standard IV, who are employed daily, one for 3d. per week in housework and errands from 7.45 to 10, 12.30 to 1.30, and 4.30 to 8, and the other at 9d. per week and her food in carrying out parcels for a milliner from 7.30 to 9.30, 12.30 to 2, and 4.30 to 8." Lastly, I have to call the attention of the committee to the wages which these children get. Receiving under 6d. a week there are 17,084; from 6d. to 1s. a week, 47,273; from 1s. to 2s. a week, 40,293; from 2s. to 3s. a week, 19,757, and above 3s. a week, 8,123.

The returns for the city of London were sifted and summarized by Dr. Macnamara, of the London board, whose efforts in behalf of the children of toil and sorrow are widely known. These particular returns deal with board school children only, and are limited to the cases of children who work more than nineteen hours a week. The replies from 112 schools show that—

One thousand one hundred and forty-three children work from nineteen to twenty-nine hours per week, 729 children work from thirty to thirty-nine hours per week, and 285 children work forty hours and above per week. Of these, 309 children are employed at housework and domestic work for eight thousand three hundred and nine hours per week, and receive a total sum of £21 9s. 3½d., which is an average of twenty-seven hours each child at ½d. per hour; 719 children are employed at newspaper and milk delivery for twenty-one thousand six hundred and sixty-six hours per week, and receive a total sum of £94 1s. 10d., which is an average of thirty hours each child, at 1d. per hour; 1,056 children are employed at shop and factory work and errands for thirty-one thousand nine hundred and twenty-three hours per week, and receive a total sum of £121 4s. 11d., which is an average of thirty hours each child, at 1d. per hour, and 69 children are employed at various other employ-

ments for two thousand and one hours per week, and receive a total sum of £9 12s. 6d., which is an average of twenty-nine hours each child, at 1¼d. per hour. (In some cases meals are allowed to the children in addition to the payment.)

It appears from the returns that poor boys in the metropolis are under worse pressure than the girls, and in respect to these Dr. Macnamara says:

From a study of these school returns it will be seen that the occupations which are most largely responsible for the out-of-school labor of the boys are the delivery of milk, the selling of newspapers, the running of errands for shopkeepers, and the performance of odd jobs in barber shops. Many of these occupations commit each boy to over forty hours' labor per week.

To take the return for the Yerbury-road School, Finsbury, only, we get the following: As newspaper seller, fifty and one-half hours per week; as errand boy, fifty-nine hours; as newspaper seller, sixty-three hours. As errand boy, fifty hours; as errand boy, sixty-eight and one-half hours. As milk boy, fifty-three hours. As milk boy, fifty-seven and one half hours.

The statement made by the headmaster of the Aldenham-street School, Marylebone, should be noted. It is to the effect that a boy who works for an undertaker twenty-three and one-half hours per week "helps in measuring corpses," and receives a shilling a week as the wage for his gruesome labors. * * *

It will be observed that in many cases the occupation followed by these boys is thoroughly regularized, and will not fall into the category of occasional employment, such as occasional work for father or mother, running errands now and then for shopkeepers, minding neighbors' babies, doing occasional domestic work, and so on.

For the girls out-of-school employment does not appear to be so systematized. It mainly consists of minding babies, "errands," and "housework." Dr. Macnamara concludes his report as follows:

The first comment, of course, which everyone would make would be respecting the monstrous injustice which much of this out-of-school labor inflicts upon the children. Recreation and rest would seem to be almost unknown terms, to many of the boys especially; and it would be impossible to overstate the extreme unwisdom from the purely communal point of view of submitting the constitution and physique of the children to such terrible strain as is herein involved. Assuredly a great many of them must break down. Probably some die as a direct result of the severity of the toil inflicted upon them during their early years; and certainly many more of them must become a permanent and heavy charge upon the public purse, because of the physical incapacity resulting from the rigor of their early experiences. No doubt the extreme poverty of many of the parents makes the few pence that the child earns a very material consideration; but no doubt, again, the necessity to secure those few pence is the result in some cases of parental thriftlessness, drunkenness, and worthlessness.

Again, this employment of school children out of school hours is in many cases probably the result of the thoughtlessness that is consequent upon established custom. The publication of this statement may possibly cause numbers of working-class parents to think about a matter which previously received little or no consideration. Not only in London, but all over the country, and not only in this matter of the out-of-school employment of children, but also in respect of the drafting off of young children to the factories, the workshops, the mills, the pit banks, and even the coal pits themselves, the unthinking adherence to established rule is responsible at the present moment for much injury to the children. I decline to believe that any appreciable section of the people is wantonly unkind to its offspring.

On the other hand, I feel confident that the public ventilation of this grievous injustice will be enough to secure amelioration in many cases.

At the same time the most rapid and effective way to create a public conscience is to impose a public obligation. This has already been recognized in several of the great cities which have now at work by-laws regulating the employment of children of tender age. Among those cities may be mentioned Birmingham, Liverpool, Bradford, Hull, Manchester, and Sheffield.

Two courses seem to me to be open—the one drastic and far-reaching, the other more moderate and circumscribed in its scope. We might ask Parliament to pass an enactment absolutely prohibiting the employment, under any circumstances, for purposes of gain, of any child not legally exempt from the obligation to attend school; and I have no doubt that sooner or later such an enactment will be passed. Meanwhile the "poverty" cry would certainly be raised very effectually were such an endeavor attempted at the present juncture. I have therefore carefully considered the by-laws already in existence in the other great centers, and I recommend that the board seek the cooperation of the London county council in preparing for the adoption in London of a set of by-laws on the following lines:

"(I.) No child under the age of 14 years shall be employed in any casual employment within the metropolis before 8 o'clock in the morning or after 8 o'clock at night

"(II.) Casual employment shall mean any employment for purposes of gain in the streets or other public places, always excluding such employment as is already regulated by existing statutory enactment.

"(III.) Every person who employs a child in contravention of these by-laws shall be liable, on summary conviction, to a penalty not exceeding 40 shillings for each offense.

"(IV.) A parent or guardian of a child who employs such child in any labor exercised by way of trade, or for the purpose of gain, or who permits such child to be engaged in any such labor on its own behalf, shall be deemed, for purposes of these by-laws, to take such child into his or her employment.

"(V.) The proof that such child was over the age of 14 shall rest with the defendant."

The recommendation of the school-attendance committee upon this report is as follows:

That the board make a representation to the London county council with a view of determining what should be the limitations of the out-of-school employment of school children; and whether the existing powers of the council will enable it to put such limitations into operation, or whether it will be necessary for the council to apply for further parliamentary powers. (Schoolmaster, February 18, 1899, p. 309.)

The matter now awaits some conclusive action. As has been repeatedly stated in public conferences and in parliamentary debates, the conditions revealed in these statements show most of all the need of a strong and intelligent public sentiment in favor of the education of the masses. This sentiment is particularly wanting in the rural districts and it is overborne by adverse influences in the cities. Industrial pressure, and especially the industrial competition of Germany, is, however, developing a strong sentiment in favor of education, compulsory and prolonged, as a condition of national prosperity, and statesmen and industrial leaders are joining with philanthropists to improve and increase the education of the masses. Meanwhile a new

argument is furnished by these conditions in favor of strengthening and extending the central control of education. The latest effort in this direction is the board of education bill hereafter considered.

MEASURES AFFECTING TEACHERS.

The superannuation bill for teachers, introduced in the House of Commons July 18, 1898, passed through both houses in August, and signed by the Queen August 12, brings to a close a remarkable series of efforts extending over a period of sixty years. As early as 1839, when the committee of council on education was created to distribute the parliamentary grants for elementary education, the agitation of the subject was begun. In 1840 a scheme of retiring allowances was adopted by the Government with a view to inducing competent persons to teach in elementary schools. The scheme remained in operation until 1862, when it was dropped, to the great injury of those who had been depending upon its benefits. It was partially revived in 1874, when the meager sum of $32,500 was placed at the disposal of the education department to meet the claims of teachers employed while the former ruling was in force. The need of a general pension law becoming more and more evident, the House of Commons repeatedly appointed a select committee to inquire into the matter, and not less than four bills were introduced between 1870 and 1896, all of which failed of effect. The law passed last year provides a superannuation allowance, which is payable to a teacher on attaining the age of 65 years, at which age retirement is compulsory, save under exceptional circumstances.

The allowance is made up partly by an annuity purchased by small sums—£3 for a man and £2 for a woman—deducted annually from each teacher's salary, and partly by a state pension, calculated according to the years of actual service performed by the teacher.

A young man entering the service at 21 years of age would receive a pension of at least $330 annually, and a woman teacher under the same circumstances would receive from $225 to $250. The law provides also for teachers who, from ill health, are compelled to relinquish their work at an earlier age than 65. This is called a "disablement allowance," and the amount is calculated on the number of years of completed service up to the date of the teacher's "break down." Thus, for a man who commenced teaching at the age of 21, and was compelled to retire from work at 55 years of age, the "disablement allowance" would be $220, and for a woman $155. The law is applicable to Scotland as well as to England and Wales.

PROPOSAL RESPECTING PUPIL TEACHERS.

The pupil-teacher system was the subject of an exhaustive investigation by a committee of the education department, the results of which were set forth in the Commissioner's previous Report.[1]

[1] Report for 1897-98, vol. 1, pp. 160-165.

An endeavor was made the present year to mitigate the worst evils of the system as developed in that investigation by reducing the proportionate number of pupil teachers in a school in accordance with the recommendations of the department committee. Under the present rulings the number of pupils must not exceed three for the principal teacher and one for each certificated assistant teacher. In place of this the code drawn up for 1899 provided that "after the 1st of January, 1900, no pupil teacher will be recognized in a school in which there are not at least two adult teachers employed, except with the special consent of the inspector.

"The number of pupil teachers recognized in a school may not exceed two (or in the case of pupil teachers already recognized, three) for the principal teacher."

This proposal would reduce the number of pupil teachers, and consequently the amount of grant which individual schools could obtain for their training.

When the code came up for discussion in the House of Commons unexpected opposition to the change was developed, and to the surprise and chagrin of all friends of progress the opposing motion prevailed. The opposition came chiefly from the rural schools, which are, as a rule, poorly staffed.

REPORT OF THE CHAIRMAN OF THE LONDON SCHOOL BOARD FOR 1897-98.

THE TEACHING STAFF.

The greatest care is taken in the selection of efficient teachers. The new conditions adopted by the board for the preparation of the small class of ex-pupil teachers for the certificate examination will secure for them systematic instruction by competent teachers, as adequate as the conditions of their employment will allow, and much better than that which they have hitherto been able to obtain. Senior pupil teachers will henceforth attend at the pupil teachers' schools half time, and candidates will be full time under instruction for the last nine months of their candidateship. The money spent on the board's pupil teachers' schools is an investment which gives a high rate of interest. It secures greater power and intelligence in the assistants, and raises the general character of the education given in our schools. With regard to the preparation of lessons by the teachers, the board inspectors report that they are satisfied that any grounds which may exist for complaints will entirely disappear.

PREPARATION OF LESSONS BY THE CHILDREN.

With reference to the preparation of lessons by the children, much remains to be done. Among the causes the neglect of home work, the poverty of the homes, the ignorance and indifference of the parents, and the difficulty of examining the work of large classes were prominent. These unfavorable conditions are now being mitigated, and the tendency of education will be in the direction of making a child think for itself and learn for itself. The province of the teacher will be to supplement, illustrate, and explain, not to lecture. Primary education fails to produce all the results we have a right to demand, unless it stimulates in a child curiosity, the desire when it has left school to keep on learning.

TEXT-BOOKS AND ORAL TEACHING—LITERATURE AND LENDING LIBRARIES.

The question of the supply of proper text-books has received additional importance since Mr. Sharpe, Her Majesty's senior chief inspector, in his last report, which deserves the most careful consideration, and to which I shall have occasion to refer frequently, has called attention to the evil of excessive oral teaching. The board has to hold the balance between the use of the oral method and the use of books which may tend to overload the memory rather than to quicken thought. Good books, with full information, have to be supplied and supplemented from time to time to the schools for the use of the teachers. Accurate text-books should be in the hands of the scholars for the purpose of summarizing the information orally given by the teachers. With a view to give a taste for reading, a varied supply of interesting and entertaining reading books is needed. The use of literature, not as an indirect means of giving a lesson in grammar, but as a means of exciting in the children's minds a desire for knowledge, is of great importance, where, in too many cases, the school is the chief, if not the only, source of awakening mental activity. Lending libraries are provided for every permanent school and for the evening continuation schools. Where the head mistresses express a wish for it, girls' departments are supplied with separate libraries.

SIZE OF CLASSES.

The size of our classes is being gradually reduced, so that more individual attention may be given to the children, and the board have determined, in planning their new schools, to add to the number of class rooms, and thus make this reform more easy of accomplishment without wasting space.

MANUAL TRAINING, DOMESTIC ECONOMY, ETC.

The results of manual training for boys and of the experimental scheme of domestic economy for girls, started in 1897, are very satisfactory. The syllabus of instruction in domestic economy adopted by the board at its last meeting will tend to further develop this branch of our work.

I trust that the education department will allow an inclusive grant of not less than 9s. per head for the combined subjects of cookery, housewifery, laundry work, and domestic economy, when taught in centers. It would be a step in the right direction of correlation of studies, and the combination is recommended by Mr. Sharpe. In order that the teachers may be thoroughly grounded in the scientific principles underlying these domestic economy subjects, the board are arranging for classes for mistresses in domestic science, and a large number of mistresses have applied to be admitted to these classes. The development and care bestowed by the board on manual training and practical domestic economy will, I trust, convince those who apprehend that the dignity of manual labor is not sufficiently inculcated in our schools that the London school board need not fear any criticism on that score. The number of county council scholarships obtained by our scholars is most satisfactory.

TEACHING OF PHYSICS.

Training in physics is found to be preferable to chemistry, and the laboratories now in construction are, as a rule, so fitted as to be adapted to the teaching of physics rather than that of specialized instruction of chemistry.

TEACHING OF ENGLISH.

Whatever may be the rival claims of literature and of science as instruments of awakening and means of training the mind, none can dispute that thorough instruction in the English language should be an essential part of our popular system of education. We have a right to demand, as an outcome of our school training, that

the scholars shall have acquired the power to express themselves clearly and correctly both in speech and in writing. I am afraid that in this respect we fall short of what is accomplished in many foreign schools. More attention should be given to the thorough teaching of our own language, and I heartily indorse Mr. Sharpe's second recommendation that "composition, writing, spelling, and the broad principles of grammar" should be united. In order to attain this object in every lesson, the language used by the teacher and by the scholar should be grammatical, clear, and precise. The habit of answering in complete sentences is a most valuable discipline, and should be acquired in our schools. Clearness of language will, if insisted upon, induce clearness of thought as its corollary. This carefulness and propriety of language in school will have its moral as well as its intellectual advantages. It will inevitably raise the tone of the scholars and encourage them to eschew that which is vulgar and low.

MODERN LANGUAGES.

Modern languages are not a prominent part of our teaching, but French is a popular subject, and is being taught more and more. French and shorthand have in some localities a realizable value.

GEOGRAPHY.

Geography in the past has been taught too mechanically. Map-drawing has been revived and greatly improved, but more attention should be given to physical geography, to the great phenomena of nature, to the laws influencing climate, productiveness of soil, etc. History should be connected with geography, and the lessons should be given in such a manner as to make history and geography illustrate each other. History also lends itself to give clearer ideas on the conduct of life.

GREATER LATITUDE IN SELECTION OF SUBJECTS OF INSTRUCTION.

In our schools there is the greatest latitude left to the heads of departments, and it would be very unsafe to draw deductions from a visit to a school in Islington which might be of a very different type from a school in Lambeth. The education department have, I think, wisely adopted a policy of decentralization, and the practical abolition of the standards has created a revolution which will have to be carefully watched. Everything now turns on method and life in teaching, but we must be on our guard not to lose sight of the importance of accurate thinking and thorough work. It is not only in politics that the evil effects may be felt of absence of continuity by the violent swinging of the pendulum.

HIGHER-GRADE SCHOOLS.

The advanced elementary education of this country has for some years occupied the attention and enlisted the support of the large urban school boards. London has hitherto done less in this direction than the large provincial towns. Nevertheless the board, from 1887 down to the present time, has passed resolutions and taken action for the purpose of developing upper-standard or higher-grade schools, and fifty-six schools have been selected for this purpose, with the approval of the education department. From March, 1890, to March, 1898, the ex-seventh scholars in fifty upper-standard schools existing at both dates have increased from 417 to 2,380. It was felt, however, that London still failed to furnish adequate opportunities in its board schools for those scholars whose parents wished them to make the best use of their school life, and this board has taken steps to secure further development for these and similar schools. The appointment of their staff has been intrusted to the school-management committee. It has been determined, in suitable districts, to provide schools for about 700 or 800 children each, admitting none below standard 5, and independent of junior departments; and in these districts all suitable scholars, on entering the work of standard 5, will be transferred to these schools from

neighboring schools. These buildings are to be planned with class rooms suitable in size for the smaller classes which are required in such schools. In some cases these schools will be organized as "schools of science;" in others the school course will have regard to commercial exigencies. Steps have been taken in many of the existing upper-standard schools to provide suitable rooms. The existing schools so improved, and the new ones now projected, with adequate accommodation and equipment, will do much to put the people of London in as good a position as the inhabitants of most of our great towns, where school boards have already taken action. These schools, available as a rule for the instruction of the junior scholars of the London county council, will furnish a two or three years' course of instruction for scholars who have passed through all the standards. The number of children in the upper standards is unsatisfactory. The board has raised the standard for total exemption of children between 11 and 13 from the sixth to the seventh, and for half timers from the fourth to the fifth standard, in order to secure a longer attendance at school.

IMPROVEMENT IN INFANTS' SCHOOLS.

In no department has a greater revolution been effected in recent years than in our infant schools by the development of the Froebel occupations and nature teaching. I can not go into details, but I think we may claim that some of our schools are very successful in the dovetailing of teaching through a judicious blending of play, occupation, and nature lesson. Remarkable skill and originality have been shown by the teachers in our infant schools, in interesting and educating the children in spite of the difficulties inherent in the large size of their classes.

KINDERGARTEN LECTURES.

In order to enable the teachers to obtain the special qualifications represented by the kindergarten certificate, special lectures were given on theory and practice, which commenced in October and ended in June or July. About 600 teachers attended. The decision of the board to bring, as far as possible, all our old schools up to date by the addition of halls will enable concerted games to be made a regular feature of every school curriculum, and with pianos musical drill will become general.

EXTENSION OF WORK IN EVENING-CONTINUATION SCHOOLS.

A most important department of the board's work is that of evening-continuation schools, and the rapid development of these schools is due in a large measure to the energetic initiative of the chairman of the committee, Mr. Stewart Headlam. Fees have been abolished, and I am pleased to find that the applications for entrance exceed by 100 per cent those of last year. The applications in the first week of this session were about 50,000, as compared with about 25,000 in September, 1897. The teaching of gymnastics has been very successful as an experiment at seven centers in the Hackney division, and has been extended to the whole of the metropolis in the present session. Swimming has been taught to over 3,000 pupils, and a large number of these were also instructed in life-saving. In the present session three schools have been set apart for instruction in commercial subjects and five for instruction in science and art subjects. The aim of these schools should be concentration of thought and of work on subjects made attractive, proper guidance in the art of acquiring knowledge by individual study. The danger, of course, is that the pupils in these schools should not be sufficiently in earnest, and look upon them more in the light of recreation than of stubborn effort.

DEFECTIVE CHILDREN.

Former boards, under the guidance of General Moberly, deserve the credit of being the pioneers in England of special and suitable instruction for defective children,

and we may be proud to claim that the recommendations of the departmental committee follow almost exactly on the lines which the London school board had laid down. We have in this board hastened to adopt and incorporate in our resolutions the recommendations of that committee. We have accepted as a rule accordingly what was already our practice, that a class of these children should not exceed 20. We have also adopted the rules of planning recommended for such schools, and ours are now planned with 20 feet of floor space per child and with ample half corridors. We also acquiesce in the calculation that about 1 per cent of the elementary schools' population are fit inmates for these schools. We have made a tentative scheme of school provision on this basis for London, and we are rapidly providing and extending this school provision. We endeavor, by a liberal scale of payments, to attract the best teachers to this difficult and responsible work, and we shall probably find it desirable still further to increase their efficiency by special instruction in psychology and in the observation of the physical concomitants of mental deficiency. The two medical officers appointed to assist our principal medical officer in this work will be of the greatest value. We look forward to securing for society as useful and self-reliant members many who might have otherwise been failures in life, and we are confident that, in doing this, we shall erect a lasting and worthy monument to the memory of our late respected colleague, General Moberly.

NUMBER OF CHILDREN OF SCHOOL AGE REDUCED.

For the first time in the history of the school board the number of children scheduled last Easter shows a reduction. This year it was 833,008 against 839,737 last year. I am not prepared to state the causes which have led to this reduction; but I may at once say that no argument can be derived from it to show that we have built schools in excess of our requirements. The decrease is in central London, but in the divisions of West Lambeth and Greenwich there are large areas at present undeveloped, where new centers of artisan population may have to be provided for. Besides, the education department is more exacting in its rules as regards overcrowding of class rooms, and the fact that the percentage of average attendance this year is the highest that has ever been attained in our board schools (81.4 per cent) makes it imperative that we should not be remiss in providing accommodation. The crown court school in Westminster was closed, which indicates that no unnecessary schools are maintained.

IRREGULAR ATTENDANCE AND COMPULSION.

I can not lay sufficient stress on the evil of irregular attendance. The legislature has wisely given compulsory powers and made free education possible. The London school board spends a large amount on the machinery necessary to enforce attendance. The parents, first of all, receive a gentle reminder, followed by a special notice to appear before a committee if the reminder fails, and the final notice in peremptory terms is only sent out after this double appeal fails. It is only after this careful procedure that summonses are issued to appear before a magistrate. It may be confidently asserted that no prosecution is instituted by the board except in those cases which fully warrant it. The next step should be a rapid and summary disposal of these cases. What happens, however, is exactly the reverse. First of all, in some districts, in consequence of pressure of other business before the courts, there is a restriction imposed on the number of summonses which can be issued. In one court during the past summer no summonses at all could be issued for four weeks; in others a second summons can not be obtained until the fine on the former one has been paid; and, as time is given to pay the fine, in many cases, owing to the disappearance of the defendant, it can not be collected. The fine is often a mere trifle as compared with the substantial wage earned by the child. The great majority of the children make a thoroughly good attendance—90 per cent and upward. In many cases the parents make great self-sacrifices. It is a small but appreciable proportion which make a thoroughly bad attendance of from 10 to 25 per cent.

EFFECT OF NON-ENFORCEMENT OF THE LAW.

This serious hindrance of the work of the by-laws department of the board, on which for the year ended Lady Day, 1898, £48,404 was spent, encourages this small proportion of parents to defy the law, to neglect their children, and is the direct cause of increase of pauperism and crime. For these children the ratepayers have to provide the same educational machinery as for those who attend regularly, and it is obvious that for these children the school discipline is the only discipline which will restrain them from entering upon evil courses. I need not point out that the irregularity of these children seriously hinders the work of the teacher and places difficulties in the way of proper and continuous education of the children who do attend regularly. Unless regular attendance is enforced, the ratepayers do not receive full value for their outlay. To remove this very great scandal, which is felt equally by board and voluntary schools, it is a pressing need that these parents should be dealt with firmly. After a few months of resolute treatment, of strict enforcement of the by-laws, of immediate collection of fines, the ranks of these law-breaking parents would soon be broken and the children rescued. The board has laid this very serious state of things before the home secretary, and I have not the slightest doubt that means will be found to vindicate the law.

EMPLOYMENT OF CHILDREN OUT OF SCHOOL HOURS.

The education department has instituted an inquiry into the extent to which children are employed out of school hours. I find from a return, which is not yet complete, that 829 children work from nineteen to twenty-nine hours per week; 548 from thirty to thirty-nine hours, and 221 forty hours and above. Of these, 207 children are employed at housework and domestic work for 5,473 hours per week, and receive a total sum of £14 19s. 3½d., which is an average of twenty-six hours for each child, at ¾d. per hour; 520 children are employed at newspaper and milk delivery for 15,882 hours per week, and receive £65 10s. 7d., which is an average of thirty-one hours for each child, at 1d. per hour; 808 children are employed at shop and factory work and errands for 24,442 hours per week, and receive £91 4s. 7d., which is an average of thirty hours for each child at 1d. per hour; 63 children are employed at various other employments for 1,799 hours per week and receive a total sum of £8 6s. 11d., which is an average of twenty-nine hours for each child, at ¼d. per hour. In some cases meals are allowed in addition to the payment. It is quite evident that steps will have to be taken to put a stop to this flagrant abuse.

RELIGIOUS INSTRUCTION.

Concerned as we are with educational problems, we do not lose sight of the more important problem of the formation of character. The hostility or indifference which undoubtedly exists in some quarters toward education is due, I believe, to a latent suspicion that character is of greater importance than knowledge. Neither can it be denied that very striking instances might be given of great intellectual capacity with a marked infirmity of purpose. In the struggle for life we are aware that strength of character will count for more than mere culture. If our educational system were open to the criticism that it did not turn out boys and girls able to hold their own when they are cast on their own resources, we should have labored in vain. Education would then have a deteriorating effect. A skeptical, if not cynical, generation would arise, and we should have lost a characteristic which is the first cause of our greatness as a nation. The main point is that the children should be under a religious influence. Religious influence can be exercised in many ways. The selection of means must be left to the individual teacher, and I am confident that a thoroughly religious teacher will know how to impress the children. There is nothing in the education act, nothing in the school board system to handicap a teacher,

and the best evidence of this is to be found in the fact that a great number of our teachers have been trained in denominational colleges. It is inconceivable that the religious training they have received should not influence their teaching. I am perfectly satisfied that a Christian teacher in a board school need not have any conscientious scruples that in his daily work he will not be able to impart to the children what is most needful. I am not reopening a controversy, but I am vindicating the position in our board schools of teachers, who are a powerful influence for good. The religious character of a school does not depend upon the code regulations; it depends upon the religious influence exercised by the teachers as a living force.

UNIFORMITY OF SUCH INSTRUCTION IMPOSSIBLE.

Religious instruction, perhaps in a higher degree than any other instruction, depends on the individual teacher, and we are entitled to suppose that teachers, trained as ours have been, will reflect in their own teaching what they themselves have been taught. The religious teaching will not be uniform, but here I would ask: Is it uniform in voluntary schools of the same denomination? Does it not vary even within the fold of the same church? I do not regret it. I believe uniformity to be undesirable even if it were attainable, and in our country it is unattainable, and the country would not be more but less religious if there were a dead level of uniformity. The efficiency of the various churches is increased by the absence of a monopoly. In countries where there is practical uniformity, you will find much less religious vitality than that which happily makes itself felt in various directions among us. As far as I am aware, there are no complaints made by the parents with regard to the religious instruction given in our schools. Neither are there any from our inspectors, and as regards the syllabus of Bible instruction, it has created no division among the members of the board. It is my personal conviction that the religious education given in the day schools fully carries out what was intended by the Education Act, and what the parents desire for their children. And in their industrial schools the board has given every guaranty that the strictest attention should be paid to the children receiving such religious education as is in accordance with the tenets of the denomination to which they belong. We have gone out of our way to give more guaranties than the Industrial Schools' Act requires. I think the majority of this board may fairly claim to have shown a spirit of absolute and scrupulous respect for the religious opinions of the minority.

CLERICAL REPRESENTATION ON THE BOARD.

The constitution of this board is certainly not deficient in clerical representatives. I can not turn my eyes to the right, to the left, or to the center without meeting the glance of a divine. But I can not help feeling that the ratepayers have been very wise in sending these representatives of various churches. In the first place, because it gives a guaranty to the parents that Christianity will be taught in the schools, and that it will be taught in such a way that no offense is given to any denominational opinion. In the next place, because in the diversity of opinions held, conscientiously and sincerely, an amount of toleration and of charity has been shown, which I attribute to the consciousness of the clerical members of the board that it is their duty to cooperate in the endeavor to make the children in the board schools familiar with the fundamental truths of Christianity. This most satisfactory result has been attained by showing a scrupulous regard for the opinions of others, and I trust I may also attribute it to the fact that what unites us is of far greater importance than what divides us. There is a further advantage in the presence of clerical members on the board, that they have a more intimate knowledge of the homes from which the children are taken. But knowing what the cares and harassing labor of the London clergy are, I wish to state frankly how much I have been impressed by the manner in which they have discharged their duties on this board.

ADMINISTRATIVE WORK OF THE BOARD.

I may, perhaps, allude to the administrative work of the board. In all administration you want a sense of responsibility and of continuity, and you have to avoid inaccessibility to new ideas. I confess that to those who, like Sir C. Elliott and myself, have been associated with Indian administration, the thought must occur occasionally whether a representative body exposed to recurrent triennial elections is exactly the proper authority for the exercise of such administrative power as the London school board wields. I admit that on a closer acquaintance with the nature and the magnitude of the work my doubts increased. But a year's experience has satisfied me that there is no ground for this apprehension. And it may be as well that the reasons should be given, because the nature of our organization is, I find, not generally known, and is even obscured by the publicity given to our weekly proceedings. These form only a very slight part of our labors.

COMMITTEE WORK.

It is in the committees that the real work is done, and it is on the chairmen of these committees that the greater part of the burden falls. On the knowledge, on the energy, on the tact of these chairmen the success of our operations mainly depends. But the duties of the board could not be adequately discharged unless every member of the board made himself acquainted with the details of the work in his division, and were assisted by managers, whose cooperation is most valuable. And I must be permitted to state that the way in which individual members discharge these arduous duties is beyond all praise. I do not think that in any other country you will be able to find persons sufficiently public-spirited to undergo this severe ordeal of constant work which is imposed on members of the London school board. And this applies to the ladies in a marked degree. I think we are all agreed that there are aspects of our work which are dealt with, and can only be dealt with, by them. I believe I am right in saying that it is not unusual for them to devote more than eight hours a day to the work in which they put their heart and soul. And unless the work was done unobtrusively, and with a minimum of talk, it could not be cleared off. The test of the efficiency of a board is in the absence of controversial discussions at our weekly meetings, because the work having been threshed out in the committees, revision of that work ought, as a rule, to be superfluous. And, as far as this board is concerned, I only wish that in parliamentary assemblies the speeches were compressed within the limits which are accepted here. We are an administrative body, we have to carry out duties prescribed by act of Parliament, and there are only rare occasions which justify acute controversy, because administrative and executive functions are essentially different from those with which a legislative body deals. And it is quite clear that our efficiency as administrators must be impaired by infusing into our discussions party spirit, for which I have very seldom found any excuse. I am not sure that it might not be wise to grant a gold medal annually to the member who had made the shortest and most business-like speeches. Probably the board would have voted it unanimously to Miss Morten, whose incisive rhetoric would almost preclude all possibility of calling her to order before she resumed her seat. The triennial elections prevent the board from running into a groove, secure the infusion of new blood, compel us to give an account of our proceedings, and keep up the interest of the public in educational affairs.

VOLUNTARY SCHOOLS.

I do not see why the London school board should entertain the slightest hostility to voluntary schools. Anyone knowing the constant expansion of the work of the board can not but welcome every effort to give us auxiliary aid. Such a school as

the Jews' Free School,[1] for instance, doing such excellent work, securing such a high percentage of attendance, is an institution of which the success can only inspire a grateful feeling of admiration. I am convinced that this board has not the slightest desire to interfere with the supply of schools for which there is a bona fide demand. If voluntary schools are what their name represents them to be, really voluntary and educationally efficient, they may be very beneficial in answering special needs of certain sections of the London population. In London there is plenty of scope for the work of various educational agencies.

Medical inspection.—The London school board has agreed upon the appointment for one year of two medical practitioners (one a man and one a woman) to take charge of the work in connection with the examination of defective children and children alleged to be defective, each to give an equivalent of at least half time, at a salary in each case not exceeding $250 per annum, and that the woman practitioner shall also, as part of her duties, examine and report to the board as to female applicants who may desire to be examined by her, and that the "general purposes committee" be authorized to nominate two persons for appointment by the board accordingly.

The London School Nurses' Society.—The London School Nurses' Society has been formed with the object of supplying visiting nurses to elementary schools in poor districts. Already these nurses visit some of the poorest schools and attend to the small ills of the scholars, such as sore heels and inflamed eyes. Excellent results follow their ministrations. Each is able to visit five schools in a day and see about 100 children, who are sent to her one by one by the teachers.

Schools for the blind and deaf.—The official report with regard to the schools for the blind and deaf, under the "Elementary education (blind and deaf children) act, 1893," for the year ending August 31, 1897, states that the number of schools recognized by the department increased during the year from 91 to 95, and the accommodation provided in these schools increased from 1,476 to 1,616 for blind children, and from 3,004 to 3,123 for deaf children. The number of scholars on the books of these schools increased in the case of blind scholars from 1,226 to 1,280 and in the case of deaf scholars from 2,459 to 2,566. The number of blind or deaf scholars boarded out under the superintendence of boarding-out committees increased from 16 to 25. The total grants paid for the year under the minute of April 2, 1894, increased from £15,629 to £16,727 7s. 6d. A satisfactory advance was made during the period in question, both in the work of supplying places in certified schools (that is, schools accredited by the depart-

[1] This school, situated in the midst of the district where the poorer Jewish immigrants congregate, has accommodation for 2,250 boys and 1,250 girls. It is one of the most efficient schools in London, as shown by the large annual grant which it secures upon the results of the Government examination. Besides tuition, breakfasts are provided every morning, and each child is given a suit of clothes and two pairs of shoes yearly. A savings bank is connected with the school, which pays the pupils 10 per cent on small deposits.

ment) for these classes of children, and also in the efficiency of the instruction and training given in the schools. The second Queen's scholarship examination for blind students proposing to enter the Norwood (Smith) Training College was held July, 1897, when four candidates passed out of five presented. The first certificate examination for blind candidates was held at the same time, when ten candidates passed their first year's examination, of whom eight were students and two acting teachers.

SECONDARY EDUCATION.

Secondary education has become a topic of absorbing interest in England, and the need of Government action in this matter is urged with scarcely less earnestness than was shown three decades ago in respect to elementary education.

The royal commission of 1896 advised immediate legislation, with a view to systematizing the work in this department, economizing the public money available for secondary schools, and equalizing their advantage throughout the country.

Up to a recent date secondary education in England was left entirely to private and endowed schools, which are independent of public control, excepting so far as regards the administration of endowments. This interest was committed by the "endowed schools act of 1874" to the charity commission.

Other public agencies, which under recent laws have come into relation with secondary education, are (1) the science and art department; (2) the school boards; (3) the county councils (including county boroughs), which are empowered to appropriate the funds from the surplus liquor duties (customs and excise act of 1890) to technical schools and classes.

The department of science and art.—The science and art department was established to foster the knowledge of the arts and the principles of design among the people, especially the manufacturing population. At the time of the formal organization of the department, which took place in 1853, or 18 years after the Government began to move in the matter, the original scope was extended to include science, especially in its practical application.

The department has had the disbursement of an annual grant, which amounted to $3,960,229 in 1897–98. It has exercised a powerful influence, not only through the direct application of the money, but in shaping educational ideals through the standards for examination which it has maintained and the equipments which it has required in schools receiving the grant.

For the year under review the department distributed to science schools $838,325 in the form of grants for pupils passing its examination and grants for attendance, and to schools of art on the same basis $387,419.

The number of students under instruction in science[1] was 197,796 and in art 146,720. Of the latter, 142,293 were pursuing some branch of industrial art.

This gives a total of 344,516 students in secondary schools fostered by this department. The amount distributed to them, $1,225,744, is 31 per cent of the whole amount expended by the department. The remaining two-thirds was appropriated to pupils in elementary schools on account of drawing and manual instruction; to the teachers' training colleges for free-hand and model drawing; to the Royal College of Arts and Science, and to the geological surveys, which are supported by the department.

The school boards.—As regards the work of secondary education under the school boards no complete view can be given, as in the reports this division is not distinguished from the elementary grade. The reports, however, make it clear that about 200,000 pupils are in secondary courses of study, and many of these in schools admirably equipped for instruction in science and the modern languages.

County councils.—The action of the local authorities with respect to the disposition of the surplus from the liquor duties placed at their disposal is set forth in a return prepared in accordance with an order of the House of Commons and covering the two years ending March 31, 1897. The summarized report is as follows:

In England, excepting the county of Monmouth, the councils of 37 counties out of 49 are applying the whole of the residue and 12 a part of it to technical education. The councils of 54 county boroughs out of 61 are applying the whole of the residue and 7 a part to the same purpose, while 15 are also making grants out of the rates (local taxes) under the technical instruction acts. The councils of 71 boroughs and 126 urban districts are making grants out of the rates under the technical instruction acts. In several cases local authorities are also devoting funds to technical education out of the rates under the public libraries acts.

In Wales and Monmouth the councils of the 13 counties and 3 county boroughs are devoting the whole of the residue to intermediate and technical education, chiefly under the Welsh intermediate education act, 1889; and the councils of 10 counties and county boroughs and 11 boroughs and urban districts are making grants out of

[1] The development of the science division of the work is shown by the following decennial table:

Year.	Science.		Students under instruction in schools eligible for grants.
	Schools.	Classes.	
1888	1,952	6,759	112,808
1889	2,195	7,475	131,313
1890	2,063	7,756	133,821
1891	2,164	8,568	148,408
1892	2,553	10,352	180,410
1893	2,754	10,341	193,431
1894	2,602	9,433	183,120
1895	2,673	9,545	193,404
1896	2,583	10,500	194,354
1897	2,424	9,102	197,796

the rates under the technical instruction acts, while one local authority is devoting a part of the public libraries' rate (that is, local tax for public libraries) to technical education.

In England and Wales the total amount expended on technical education during the year 1895–96 was $3,629,426, and the estimated total expenditure during the year 1896–97 was $3,931,265. In addition, the amount raised by loan on the security of the local rate under the technical instruction act, 1889, mainly for the erection of technical and science and art schools was in 1895–96 $872,377 and in 1896–97 $637,447.

In Wales and Monmouth the estimated total amount devoted annually to intermediate and technical education, under the "Welsh intermediate education act," 1889, is $208,304.

Since the passage of the technical instruction act, 1889, empowering local authorities to levy a rate not exceeding a penny in the pound in aid of technical instruction, 239 municipal schools[1] have been established.

It appears then that public funds, including Government grants, the surplus liquor duties, and local taxes, are supplying nearly $5,000,000 annually for scientific and technical training in secondary schools, not including higher grade board schools.

It is interesting to note in this connection that the land-grant colleges of the United States have an annual income but little below this sum ($4,293,199 in 1897) from State and Federal sources.

The city and guilds of London, although a private corporation, is national as regards the extent and importance of its educational work.

The report for 1897–98 shows a very satisfactory progress in technical instruction, as provided by the institute and attested by its examinations. The number of distinct subjects in which classes have been at work is no less than 67, the number of classes being 1,569. As many as 32,899 students have attended the different courses of instruction, 13,062 presented themselves for examination, and 7,553 have obtained certificates. Of these successes, 1,673 are accounted for by the London classes, 625 by Manchester, 240 by Bolton, 200 by Leeds, 164 by Birmingham.

The efforts of the public agencies, whose work has been reviewed, have been exerted to increase the provision for secondary education available for the artisan and laboring classes and to equalize the provision in different parts of the country. Their influence has combined with the increasing industrial pressure to confound technical with secondary education, a relation which was favored by the report of the royal commission of 1894. In fact, since this report was issued, secondary and technical education have been united in current discussion and in legislative measures. It is therefore not surprising that the sudden purpose to distinguish between the two, as indicated in the bill for creating a new central authority for the general charge of public education (board of education bill) now pending, should have caused much excitement and criticism. This change of purpose is due to the

[1] These schools are distributed as follows: (*a*) In 47 boroughs, 71 schools; (*b*) in 130 noncounty boroughs and urban districts, 132 schools; (*c*) in 30 counties, 36 schools. The capital expenditure upon technical schools since 1889 has been in round numbers $11,700,000.

efforts of the advocates of traditional secondary schools, who fear that secondary education in the time-honored sense of an education based upon the humanities will be starved out in many places because of grants for technical subjects or for education supposed to be based on handicraft skill.

The bill, which is the second measure submitted to Parliament as a solution of the conflicting interests in education, is appended.

Before passing to this, it will be interesting to consider the private agencies by which secondary education in England is chiefly maintained. A special inquiry has recently been instituted by the Government with reference to these. The returns thus secured, which were officially published, though incomplete, furnish the only recent information respecting the great body of secondary schools in England. The following particulars are cited from this report. Monmouthshire, which has the benefits of the Welsh intermediate education law, was omitted in the inquiry.

REPORT ON SECONDARY SCHOOLS.

The schools comprised in the inquiry are classed under three heads—"public" (excluding public elementary schools), endowed, and proprietary or private.

No pupils were counted for whom grants were claimed from the education department, and it was decided to exclude from the return any pupils who might only be receiving instruction in occasional classes or in evening schools. Students at universities, university colleges, and technical institutes (except so far as regarded secondary day schools conducted in the buildings otherwise devoted to technical instruction) were also excluded from the return.

It was clear, says the report, that the large and important class of schools which prepare boys for the great public schools, and form, in effect, an integral part of that grade of school supply, fell strictly within the range of secondary education. Though the ages of the pupils range from 9 or thereabouts to 14 or thereabouts, these schools are in reality the preparatory section of one department of secondary education. Some of the great secondary schools possess a preparatory division of their own, and if this be included (as must necessarily be the case) the corresponding preparatory schools under independent management must obviously not be omitted. At the same time it should be pointed out that a mere return of the age of the pupils does not enable us to distinguish (so far as those statistics go) between these truly secondary schools and other schools having much the same age limits which are little less than alternatives to the public elementary schools, and at which the pupils complete the education they receive without proceeding afterwards to a higher school.

Owing to differences in curriculum and other causes, the education of boys and girls who are destined by their parents to proceed to secondary schools is often distinct from a very early age from that received by boys and girls in the public elementary schools. The latter are not, under present conditions in England, the common basis of secondary education; nor, though an increasing number of pupils proceed from them to secondary schools, are the public elementary schools the sole or, indeed, the chief channel through which pupils proceed in this country to day or boarding schools of the second grade.

The ages of pupils in the public elementary schools are recorded in the statistics of the education department. They vary from 2 and under 3 years to 14 and under 15 years. (Report of Education Department, 1896–97, p. 23.) But parallel with these there are large numbers of other schools, distinctly of a secondary character, which

also possess kindergarten and preparatory departments. Strictly speaking, from the point of view of educational organization, the younger scholars in the latter ought to be enumerated among those receiving primary education. But the annual official statistics of elementary education refer only to schools inspected under the elementary education acts, and therefore do not include the pupils receiving instruction in the kindergarten and preparatory departments of secondary schools. Thus it is impossible to take age as a criterion between elementary and secondary education.

A converse difficulty arises in respect of the older children in public elementary schools. Large numbers of them are of the same age as some of those in secondary schools. Some are receiving instruction in many or all of the same subjects as are taught to pupils of the same age in some of the schools included in this inquiry. But, as the former are already included in the annual official statistics for public elementary education, they are omitted from this return in order that the same pupil may not be counted twice over.

A further difficulty arises in the case of those higher grade elementary schools to which is attached, as part of the school, an organized science school (or, as it is now called, a school of science) in connection with the science and art department. This organized science school portion is, in fact, not a separate school (except for administrative reasons in the eyes of the departments concerned), but the top of a school. Just as the upper division of a secondary school is recruited by boys prepared in lower forms under the same roof, and by means of a curriculum specifically directed to secure their appropriate preparation, so is the "organized science" portion of most higher grade elementary schools recruited mainly by boys who have been prepared under the same roof in the "standards" of the elementary day school code. Educationally speaking, therefore, this "organized science school," at the top of the school, and the lower classes or "standards" in which pupils are so taught as to be fitly prepared for the organized science portion form one unit. In such a case both portions of the school are housed in the same building. But from the point of view of Government supervision, the two portions of the school are wholly separate, and, as the pupils in the "standards" in the school have already been reckoned in the annual official statistics for public elementary education, this return only takes account of the pupils in the organized science school portion. This line of division, however, is dictated in the present case by reasons of statistical accuracy, and does not correspond to any strictly educational demarcation between different parts of the same school.

Evening continuation schools and classes (though many of them impart instruction which is secondary rather than elementary in character) are excluded from this return because the statistics concerning them are actually given in the reports of the education department.

Technical schools and classes do not fall within the scope of this return, but day secondary schools with a complete curriculum (i. e., not merely isolated day classes), conducted in the buildings of technical institutes, are included.

Special schools (e. g., those for the blind and deaf), occasional classes (e. g., university extension classes), have not been included in this return. The preparatory classes of university colleges have also been excluded, though some part of the work done in them would appear to be less advanced than that done in some higher secondary schools.

A good deal of private tuition is on the border line between secondary and university instruction. In some cases private tuition is organized in well-known institutions, but in the majority of cases it is given under more domestic conditions. As the aim of this return is to give, as far as possible, a statistical summary of that part of secondary education which is given in schools, private tuition in its various forms has been excluded from the tables. But no clear line can be drawn

between the case of a gentleman who takes a number of private pupils into his house and that of one who teaches a similar number of pupils, but calls his establishment a school. Secondary schools fall, so far as the sex of the pupils is concerned, into three main categories, according as they are for boys, for girls, or for pupils of both sexes. But even this classification has to be qualified in some cases. A large number of secondary schools for girls admit little boys into their kindergarten department; but it would be misleading to reckon these schools as if they were "mixed schools for boys and girls" from top to bottom. Throughout their principal part they are exclusively for girls. The classification, for example, of the girls' high schools, in which the lowest classes often contain little boys, among the mixed schools for boys and girls would convey a false impression as to the extent, in this country, of coinstruction of boys and girls other than those of tender age. A different case arises when one or two girls (probably the master's daughters) are taught in the classes of a school otherwise exclusively for boys. But here also it would be misleading to classify such a school among the mixed schools, strictly so called. Those tables, therefore, which refer to "mixed schools" include those only which appeared from the returns to be open under all circumstances to boys and girls alike. Every now and again this has involved a somewhat arbitrary distinction, but it is believed that the classification as given in the tables will not convey a false impression of the facts.

Boarding schools form a very important and characteristic element in English secondary education, but a very large proportion of these schools admit a comparatively small contingent of day pupils. The number of schools which have none but boarders is relatively small. It is, however, the "boarding" element which chiefly determines the character of the education given in many of the schools where a few day boys (often the sons of masters) are admitted as well.

With these preliminary explanations the following details will be intelligible:

1. The statistics in this return are based on information received from 6,209 schools; of these, 1,958 are entered in the return as boys' schools, 3,173 as girls' schools, and 1,078 as mixed schools.

NOTE.—(*a*) A school has been entered in the return as a mixed school when the boys and the girls in it are practically within the same upper and lower age limits.

(*b*) A school having both sexes, but in which practically all the boys leave at a much younger age than is the average age of the girls in the school, is entered as a girls' school.

(*c*) Among the 1,958 schools entered as boys' schools there are 16 in which there are a few girls; but the number of girls in each is so small that it would have been misleading to enter them as mixed schools.

(*d*) Schools entered as mixed schools are very often not places of coeducation. The boys in very many of them are taught quite separately from the girls; but as the details were not furnished for each portion of the school separately, it has been impossible to enter them otherwise than in the list of mixed schools.

2. (1) In the schools comprised in the return there were 291,544 pupils on June 1, 1897. Of these, 158,502 were boys and 133,042 were girls, distributed thus: 122,313 boys in boys' schools, 21,252 boys in mixed schools; there were also 14,937 boys in 2,116 schools entered as girls' schools as explained in (*b*) above, making a total of 158,502 boys; 114,239 girls in girls' schools, 18,740 girls in mixed schools, and 63 girls in 16 schools entered as boys' schools as explained in (*c*) above, making a total of 133,042 girls.

(2) It may be noted that, taking the population of England (excluding Monmouthshire) at 29,140,945, as estimated to the middle of 1897 in the register-general's quarterly returns, the total number of boys in the schools entered in this return amount to 5.4 per thousand of the whole population of the country and the girls to 4.5 per thousand.

3. The following table shows the classification of the pupils by age periods:

Ages.	Boys.	Girls.	Percentage of total.	
			Boys.	Girls.
Under 12	64,339	60,866	40.6	45.7
Between 12 and 16	79,359	57,040	50	42.9
Over 16	14,804	15,136	9.3	11.3
Total	158,502	133,042	.....	.....

4. For the purposes of this return the head masters and head mistresses of schools were asked to enter their schools under one of the following categories, according to the constitution of the authority which controls them:

A. Controlled by a private individual or by partners in private enterprise.

B. Controlled by a committee representing a body of subscribers, but not registered under the companies' acts.

C. Controlled by a company formed under articles of association with limited liability, the dividend being limited by (1) the constitution of the company, or (2) resolution of the shareholders.

D. Regulated by (1) royal charter; (2) act of Parliament; (3) scheme of the court of chancery; (4) scheme under the endowed schools acts; (5) scheme under the charitable trusts acts; (6) scheme under section 75 of the elementary education act of 1870; (7) some other legal instrument.

E. Controlled by a local public authority.

5. (1) For the purpose of arranging and tabulating the final statistics these various subdivisions have been grouped, except in section 12, simply under five categories, viz, private enterprise, subscribers', companies', endowed, under local authority, as the tables would have been too cumbrous if presented under each of the thirteen heads separately.

(2) It may be noted that schools supported by religious communities have been included under subscribers' schools, as also those supported by city companies which are not for profit and also have no fixed endowment for maintenance.

(3) The difference between schools of the first category and subscribers' and companies' schools may be said to be that in the private schools the administration, the direction, and generally a part of the teaching is in the hands of the owner or owners. In subscribers' and companies' schools this is not so.

(4) The following table shows the total number of schools in the return, and of the pupils in them, as distributed among these five categories of control:

Form of control.	Schools for boys.		Schools for girls.		Mixed schools.	
	Number of schools.	Boys in them.	Number of schools.	Girls in them.	Number of schools.	Pupils in them.
Private enterprise	1,311	46,617	2,886	80,286	970	26,027
Subscribers	70	8,719	99	6,321	28	3,626
Companies	48	5,188	99	13,238	3	308
Endowed, etc	502	59,517	86	14,119	31	3,035
Local authority	27	2,272	3	275	46	6,996

(5) The above table may also be given in percentages.

	Percentage of total.		Percentage of total.		Percentage of total.	
	Number of schools.	Number of boys.	Number of schools.	Number of girls.	Number of schools.	Number of pupils.
Private enterprise	66.9	38.1	91	70.3	90.1	65.3
Subscribers	3.6	7.1	3.1	5.5	2.6	9
Companies	2.5	4.2	3.1	11.6	.3	.7
Endowed, etc	25.6	48.6	2.7	12.3	2.7	7.5
Local authority	1.4	1.8	.1	.2	4.1	17.4

The general leaving age of the individual schools may be shown thus

	Number of schools—								Percentage of schools—						
	Having no pupils over the age of—						Some pupils over 18.	Total.	Having no pupils over the age of—						Some pupils over 18.
	10.	12.	14.	16.	17.	18.			10.	12.	14.	16.	17.	18.	
Boys' schools	32	65	224	553	391	256	437	1,958	1.6	3.3	11.4	28.2	19.9	13	22.2
Girls' schools	26	75	394	898	483	540	757	3,173	.8	2.3	12.4	28.3	15.2	17	23.8
Mixed schools	100	204	303	266	107	50	48	1,078	9.2	18.9	28.2	24.8	10	4.6	4.4
Total	158	344	921	1,717	981	846	1,242	6,209	2.5	5.5	14.8	27.6	15.8	13.5	20

The left-hand column in this table clearly shows that this return can not be taken to represent exclusively secondary schools. Many of these 158 schools are really private elementary schools, not essentially different in character from the public elementary schools, but as, in the absence of inspection, they can not be identified in character in the list of private schools in any given place, they could not be excluded from this return; moreover, their statistics are not included as are those of the public elementary schools in the annual report of the education department, which deals with elementary school provision.

The size of the individual schools on the return may thus be shown:

	Number of schools having—						Total number of schools.	Percentage of schools having—					
	Under 31 pupils.	Between 31 and 50.	Between 51 and 100.	Between 101 and 200.	Between 201 and 500.	Over 500 pupils.		Under 31 pupils.	Between 31 and 50.	Between 51 and 100.	Between 101 and 200.	Between 201 and 500.	Over 500 pupils.
Boys' school	846	430	396	184	84	18	1,958	43.2	21.9	20.2	9.3	4.2	.9
Girls' schools	1,628	894	469	131	48	3	3,173	51.3	28.1	14.8	4	1.5	.1
Mixed schools	702	201	110	45	19	1	1,078	65	18.6	10.3	4	1.7	.1
Total	3,176	1,525	975	360	151	22	6,200	51.1	24.5	15.7	5.7	2.4	.3

The following table gives the number and proportion of boarders and day pupils in the schools on the return:

	Boarders.	Day pupils.	Total.	Boarders are per cent of whole number.
Boys' schools	43,692	78,621	122,313	35.7
Girls' schools	20,670	93,569	114,239	18
Mixed schools:				
Boys	2,771	18,481	21,252	13
Girls	1,652	17,088	18,740	9

Out of the total number of 6,209 schools in the return, 343 have no day pupils, viz, 224 boys' schools containing 13,268 pupils, all of whom are boarders; 101 girls' schools containing 3,864 pupils, all of whom are boarders; 18 mixed schools containing 2,147 pupils, all of whom are boarders.

The following table shows the numbers and the proportions of graduates and of

nongraduates on the staffs of the various schools, inclusive of the head master or head mistress:

	Men teachers.						Women teachers.					
	Exclusively attached.			Visiting staff.			Exclusively attached.			Visiting staff.		
	Graduates.	Nongraduates.	Graduates are per cent of whole.	Graduates.	Nongraduates.	Graduates are per cent of whole.	Graduates.	Nongraduates.	Graduates are per cent of whole.	Graduates.	Nongraduates.	Graduates are per cent of whole.
Boys' schools	4,165	3,285	55.9	545	2,410	18.5	117	925	11.3	107	471	18.5
Girls' schools	35	85	29.2	829	2,590	24.2	1,534	10,472	12.7	491	3,885	19.3
Mixed schools	205	587	25.8	42	358	10.5	150	1,762	7.8	14	326	4.1

Taking the seven subdivisions of category D, on page 40 above, i. e., endowed schools, etc., we find that the 619 schools coming under this head in the return group themselves thus:

	Boys' schools, No. of—		Girls' schools, No. of—		Mixed schools, No. of—		Total No. of—	
	Schools.	Pupils.	Schools.	Pupils.	Schools.	Pupils.	Schools.	Pupils.
I. Royal charter	33	6,152	6	752	4	375	43	7,279
II. Act of Parliament	22	5,295	2	294	.....	.....	24	5,589
III. Scheme of the court of chancery	22	2,968	1	33	2	114	25	3,115
IV. Scheme under the endowed schools acts	346	38,819	65	11,817	11	849	422	51,485
V. Scheme under the charitable trusts act	44	4,166	2	434	5	746	51	5,346
VI. Scheme under sec. 75 of the elementary act, 1870	1	100	2	119	.....	.....	3	219
VII. Some other legal instrument	34	2,017	8	670	9	951	51	3,638
Total	502	59,517	86	14,119	31	3,035	619	76,671

THE BOARD OF EDUCATION BILL.

The board of education bill was submitted to the House of Lords by the Duke of Devonshire in August, 1898, just at the close of the session, merely, as was announced by the author, to secure public discussion of its provisions. It was reintroduced with modifications on the 14th of March, and was explained at that time in full by its author, the president of the education department. Although the measure is pending only,[1] the text of the same and the speech of the Duke of Devonshire on its second presentation are given here for the light they throw upon the administrative problem. After rehearsing the points in the speech he made the last session, the Duke proceeded as follows:

That speech had invited discussion and criticism upon the bill of August 1 last, and he was glad to say that both the board of education bill and the teachers' registration bill had received public attention. He went on to insist that the organiza-

[1] The bill has just passed (August 9) with slight modification, as this matter goes to press.

tion of the central authority must precede the constitution of the local authority, toward which he thought he now saw some progress toward agreement in the localities themselves. The question had been pretty fully discussed between the associations of county councils, county boroughs, and borough councils, and we do not see that any insuperable difficulty prevents agreement between these bodies. He still had to make some reservation as to school boards. From causes for which they were not responsible school boards had been constrained to enter to so considerable an extent upon the field of secondary education that many of them were most naturally unwilling to surrender the position they now occupy. Though he conceived that very few of them would contend that the school board as now constituted would be the proper secondary education authority for the future, yet he apprehended that many of them would be disposed to claim a larger share of representation on, and influence over, these local bodies which will be set up in future than it might be possible for the Government to concede. But, under any circumstances, if the differences as to the constitution of the local authorities disappeared, he still thought it would be a mistake to create those local authorities and call upon them to undertake the important duties it was proposed to assign to them in the absence of any central organization which would be in a position to give them all the information, advice, and assistance they had a right to expect.

The dual administration under the education department and the science and art department had never been in all respects satisfactory. It was the intention of the Government to reorganize these departments, and when the secretaryship of the science and art department became vacant it would, of course, not be at present filled up. There must ensue a period of transition in which the defects of this dual administration would necessarily for a time be accentuated. The Duke went on to describe in what respects the bill now introduced differed from that of last August. He said:

"The constitution of the board of education provided in that bill has been criticised, I think not without some justice, as being somewhat awkward and clumsy. It provided in certain cases for the retention as a member of the board of the vice-president of the council. In other contingencies there would have been no vice-president. We propose in the present bill to constitute a board of the same character as the board of trade or board of agriculture. Like the board of trade, but unlike the board of agriculture, it will have a parliamentary secretary as well as a president, and the office of vice-president will cease to exist. We have, however, followed the precedent of the board of trade act, 1867, introduced a temporary provision that during the tenure of office of the vice-president he will continue to be a member of the board. In justice to the present vice-president, I ought to state that this provision has not been introduced in any way on his initiative, and that he himself entertains doubts as to its expediency. We have, however, considered that the experience and knowledge of the subject possessed by the vice-president will be of great value, not only in the conduct of the bill through the other house of Parliament, but in organizing the department. Therefore we have thought it desirable to follow the precedent of the course taken under the board of trade act of 1867. The present bill will give more elastic powers of transfer of the educational functions of the charity commissioners to the new department. It will give power to the Queen in council to order the transfer to the education board of such powers as may appear to relate to education. The question of whether a trust is of an educational or other character, and the apportioning of endowments for educational or other purposes will, however, as in the bill of last year, be reserved to the charity commissioners. Our intention is that this transfer shall only come gradually into operation, and the only power which at present will be transferred from the charity commissioners to the board of education will be that of the inspection of schools which are under schemes framed by the endowed schools commissioners.

"The question of inspection and examination of schools by the new board is one of such importance that it will be dealt with in the present bill in a separate clause instead of in a subsection of a clause, as in the former bill. That subsection conferred considerably larger powers of inspection than were intended by us, and I am advised that under the bill introduced last year all public schools would have been liable to inspection, except Eton and Winchester. I have endeavored to ascertain from the governing bodies and head masters of public schools how far they are of opinion that it is desirable that the inspection of public schools by an educational board should be general, and how far they would themselves be willing to come under it. The result of these inquiries had been to me somewhat unexpected, and I think in a sense eminently satisfactory. Most of them, the largest and most important public schools included, have, through their head masters, expressed the opinion that they are so impressed with the public advantage of a general inspection of secondary schools by some competent authority that they would be willing, on certain conditions, although they might have little or nothing to gain by it themselves, to come under such a system of inspection. But some of the conditions which they very properly lay down are conditions which, at present, it is very difficult to satisfy. The head masters indicate a great dread of any attempt to impose upon them uniformity of instruction or curriculum. They therefore attach great importance to the permanent existence of a consultative committee in which they see a guaranty against any attempt on the part of a Government department. They also require that university inspection should be recognized as alternative to State inspection. These are conditions which may be satisfied without great difficulty, but there are others which will be less easily met. They attach the greatest importance to the selection of inspectors, whose competence for such responsible and difficult duties would be generally recognized. I need not say that such men do not exist in very great numbers, that such men can not easily be found, and that, if they can be found, their services will have to be very highly remunerated. And they, further, generally express the opinion that, if inspection by the State were to be made compulsory, it ought also to be gratuitous. It would be impossible to draw an exact line of demarcation between those schools in which it would be desirable that inspection should be compulsory and those in which it should be optional; and, therefore, we propose that inspection in all cases should be optional, except in the case of those schools which are being conducted under schemes of the endowed school commissioners, in whose case the new department will inherit the powers of inspection which are already possessed by the charity commissioners. We recognize that the conditions which will be required for the higher and more important schools ought, in their due degree, to be applied to the case of the smaller local public schools, and that, in the first place, no attempt should be made to impose upon them anything like uniformity in their course of instruction; that the inspection should be conducted on the advice of, and in consultation with, the consultative committee formed under the bill; that due care should be taken in the selection of the inspectors; that university or other competent organizations shall be admitted as equivalent to give inspection; and, though we are unable to ask Parliament to devote funds to provide for the inspection of schools which are mainly for the benefit of the upper or middle classes, we recognize that in the case of the poorer schools the cost of inspection may properly form a charge upon funds placed at the disposal of the counties for educational purposes.

"The registration of teachers was provided for last year in a separate measure. We now consider that this is unnecessary. We consider that the register of both elementary and secondary teachers may be most properly kept by the department itself, and we provide that the regulations under which these registers are formed shall be framed in consultations with and on the advice of the consultative committee. The composition of that committee will not be stereotyped by the terms of the bill further than it will be provided that it shall be as two-thirds representative

of the universities or other teaching bodies, and endowed, as it will be, with the permanent functions to which I have referred. I hope that any doubt which has been felt as to the intention of the Government to make the consultative committee a permanent institution under the board will be removed.

"I stated," continued the Duke, "last year that certain changes might be necessary in the educational departments.

"The science and art department has grown up, as I pointed out last year, almost imperceptibly from very small beginnings, so that it is probable that in its case a very searching and complete examination will be necessary. That department has a character distinct and differing from anything in the State, and, I think, differing from anything which exists in any other country. Through its colleges of science and schools of art it is itself a teaching institution. It distributes a large sum in aid of instruction in certain subjects, and, therefore, it exercises a considerable control over the course of study throughout the country. It is also an examining body whose certificates possess a value of the same character as that of a university degree. It also directs great museums at South Kensington, Bethnal-green, Edinburgh, and Dublin. Its internal arrangements are also of a peculiar character, having, as it has, directors of science and art who possess no executive authority, and whose functions and responsibilities I have always found it rather difficult to understand. The intention expressed in the bill of making this department a branch of a larger education department, and also the pending vacancy in the secretaryship of the science and art department will obviously make a thorough revision of this department necessary. That revision will be undertaken by a departmental committee, and as soon as the principle of amalgamation of the two departments has been approved by Parliament, that committee will be appointed and the revision commenced. It will extend to both the science and art sides of the department, and also to the administration of the museums. It is an inquiry which will necessarily occupy a certain amount of time and entail a great deal of labor, and we therefore propose that the bill shall not come into force until the 1st of April of next year, which will certainly not allow more than the necessary time for conducting this very difficult inquiry." (Schoolmaster, March 18, 1899.)

TEXT OF THE BOARD OF EDUCATION BILL.

The following is the text of the board of education bill reintroduced into the House of Lords March 14, 1899:

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. (1) There shall be established a board of education charged with the superintendence of matters relating to education in England and Wales.

(2) The board shall consist of a president, and of the lord president of the council (unless he is appointed president of the board), Her Majesty's principal secretaries of state, the first commissioner of Her Majesty's treasury, and the chancellor of Her Majesty's exchequer.

(3) The existing vice-president of the committee of the privy council on education shall also be a member of the board, but on the next vacancy in his office the office shall be abolished, and the education department act, 1856, shall be repealed.

(4) The president of the board shall be appointed by Her Majesty, and shall hold office during Her Majesty's pleasure.

(5) The board shall be deemed to be established on the appointment of the president thereof.

2. (1) The board of education shall take the place of the education department (including the department of science and art), and all enactments and documents shall be construed accordingly.

(2) It shall be lawful for Her Majesty in council, from time to time, by order, to transfer to, or make exercisable by, the board of education any of the powers of the charity commissioners in matters appearing to Her Majesty to relate to education, and the order may make such provision as appears necessary for applying to the exercise of those powers by the board of education the enactments relating to the charity commissioners: *Provided*, That any question as to whether an endowment or

any part of an endowment is held for or ought to be applied to educational purposes shall be determined by the charity commissioners.

3. (1) The board of education may, by their officers or by any university or other organization approved in that behalf by the board, after taking the advice of the consultative committee hereinafter mentioned, inspect any school supplying secondary education and desiring to be so inspected, for the purpose of ascertaining the character of the teaching in the school and the nature of the provisions made for the teaching and health of the scholars, and may so inspect the school on such terms as may be fixed by the board of education with the consent of the treasury.

(2) The council of any county or county borough may, out of any money applicable for the purposes of technical education, pay or contribute to the expenses of inspecting, under this section, any school within their county or borough.

4. It shall be lawful for Her Majesty in council, by order, to establish a consultative committee consisting, as to not less than two-thirds, of persons representing universities and bodies interested in education, for the purpose of—

(*a*) Framing, with the approval of the board of education, regulations for the formation of a register of teachers; and

(*b*) Advising the board of education on any matter referred to the committee by the board.

5. The draft of any order proposed to be made under this act shall be laid before each House of Parliament for not less than four weeks during which that House is sitting, before it is submitted to Her Majesty in council.

6. (1) The board of education may appoint such secretaries, officers, and servants as the board may, with the sanction of the treasury, determine.

(2) There shall be paid, out of moneys provided by Parliament, to the president of the board, unless he holds another salaried office, such annual salary not exceeding £2,000, and to the secretaries, officers, and servants of the board such salaries or remuneration as the treasury may determine.

7. (1) The board of education may sue and be sued, and may for all purposes be described by that name.

(2) The board shall have an official seal, which shall be officially and judicially noticed, and that seal shall be authenticated by the signature of the president or some member of the board, or of a secretary, or of some person authorized by the president or some member of the board to act on behalf of a secretary.

(3) Every document purporting to be an instrument issued by the board of education, and to be sealed with the seal of the board, authenticated in manner provided by this act, or to be signed by a secretary or any person authorized by the president or some member of the board to act on behalf of a secretary, shall be received in evidence, and be deemed to be such an instrument without further proof, unless the contrary is shown.

(4) A certificate signed by the president or any member of the board of education that any instrument purporting to be made or issued by the president or some member of the board is so made or issued shall be conclusive evidence of the fact.

8. (1) The office of president of the board of education shall not render the person holding it incapable of being elected to, or of voting in, the Commons House of Parliament, and shall be deemed to be an office included in Schedule H of the representation of the people act, 1867; in Schedule H of the representation of the people (Scotland) act, 1868; in Schedule E of the representation of the people (Ireland) act, 1868; and in Part I of the schedule of the promissory oaths act, 1868.

(2) After the abolition of the office of the vice-president of the committee of the privy council on education, one of the secretaries of the board of education shall not, by reason of his office, be incapable of being elected to or of voting in the Commons House of Parliament; but the president of the board and a secretary of the board shall not at the same time be members of that House.

9. (1) This act shall not extend to Scotland or Ireland.

(2) This act shall come into operation on the first day of April, one thousand nine hundred.

(3) This act may be cited as the board of education act, 1899.

At the annual conference of the National Union of Elementary Teachers Professor Zebb, member of Parliament, made an address heartily commending the bill, especially as tending to unify the educational work of the country. He said:

The board of education bill, which will certainly pass, has some features which claim a brief notice in connection with our subject. It is a bill which forms the first step, and a most important step, toward the organizing of secondary education. But it possesses also a significance of a still wider kind, inasmuch as some of its

provisions or its consequences will tend to the proper correlation of primary with secondary teaching, and to a clearer recognition of the manner in which their interests are connected. As we have been told by the lord president, it is contemplated that in the new education office there shall be three departments—one for primary, one for secondary, and one for technical education. The separateness of these departments is of less moment than the fact that all three will be brought under the cognizance of a single board. Such an arrangement can not fail to facilitate the provisions of the requisite links between the different grades and kinds of schools. Continuity and unity of system will be more easily secured, while at the same time due regard will be had to those circumstances in which primary and secondary schools require different modes of treatment. Then the bill provides for a consultative committee, which is to advise upon such matters as are referred to it by the board of education. This committee will consist, as regards two-thirds of its members, of persons nominated by the universities and by "other bodies interested in education." The expression "other bodies interested in education" is a comprehensive one, which leaves no room for doubt that the interests of primary education will be duly represented on the consultative committee. This committee will also, with the approval of the board of education, frame regulations for the registration of teachers. It has thus become unnecessary to reintroduce the teachers' registration bill of last year. Under the provisions of that bill the register was to contain primary and secondary teachers in one common list, while, in addition to this list, it might give also separate catalogues of the two classes. A similar plan, it may be expected, will be adopted under the new bill, and the unity of the teaching profession will thus receive an express recognition. It might be premature to discuss the probable constitution of the local authorities which are to be established at no distant date, and it would plainly be inappropriate on the present occasion to enter on the discussion of details connected with that subject. It may, however, be regarded as certain that primary education will find adequate representation on those bodies. Altogether, then, it appears reasonable to hope that the coming legislation, of which we are to have an important installment this year, will lead to beneficial results for our whole system of education, primary and secondary alike. It will be not the least of those benefits if the actual and visible unity of the new education board should serve to impress upon teachers of every kind the unity of the cause in which they are engaged, the demand which that cause makes upon them for unity of endeavor, even at some sacrifice of personal predilection or convenience, and the greatness of the reward which will be theirs who, in a country which is still too little alive to the supreme importance of education, shall yet succeed, by unity of effort and by unity of spirit, in securing for the kingdom and for the empire an indispensable safeguard—one not less needful, in the long run, than ships or swords—the safeguard of intellectual and moral competence to hold our own in every field with the most progressive nations of the civilized world.

THE WELSH LAW OF 1889.

The Welsh intermediate education law, passed in 1889, is of great importance, not only because of its immediate effects in Wales, but because of the suggestions it offers to guide similar efforts in England. Briefly outlined, it may be said that the law constitutes every county of Wales a district for educational administration under a local authority called the joint education committee of the county council, and consisting of five persons, three of whom are to be nominated by the county (a county borough) council and two by the lord president of Her Majesty's privy council. Nominees of the county council are not

required to be members of that body. Nominees of the lord president are required to be "persons well acquainted with the conditions of Wales and the wants of the people," preference being given to residents within the county for which the committee is appointed. The joint education committee has the duty of reporting to the county council, but its acts and proceedings are not required to be submitted to that body for approval.

The county organizations are unified through a central board (central Welsh board of intermediate education) created in 1896, whose most important functions are the examination and inspection of schools. The law is administered under the general oversight of the charity commission, which has the relation of a Government authority.

Under the operations of this law, adequate provision for secondary education has been made throughout the province. The public funds available for the work are, besides existing endowments, local taxes, supplemented by a grant from the treasury equal in each district to the income from the tax.

The proceeds of the liquor duties have also been almost entirely applied to immediate education in Wales. In 1897–98 88 county schools were reported as in operation, and provision had been made for 8 other public secondary schools.

The schools had a force of 410 permanent teachers, mostly university graduates, and 130 visiting teachers. Their pupils numbered 7,000, equal to 35 for every thousand inhabitants.

The annual income of the schools from the public sources above specified was about $420,000. Tuition fees are charged in these schools, ranging from £2 to £12 ($10 to $60) per annum. About 10 per cent of the pupils hold free scholarships, and another 10 per cent half scholarships.

The average annual expenditure per capita is about $70 a year.

NEW SCHEME OF CLASSIFICATION FOR SCHOOLS OF SCOTLAND.

In Scotland the general conception of education approaches much more nearly that maintained in the United States than the English idea.

In the northern division of the Kingdom there is little trace of those educational distinctions based upon social caste, which color all the discussions of the subject in the southern division.

The latest regulations for day schools issued by the Scotch department have swept away at one stroke all cast-iron limits and provided for flexible classification, national tests of attainment, and regular progression from the elementary schools to the secondary. These regulations, which embody the most advanced idea of popular education which has thus far been officially promulgated in Great Britain, are here briefly epitomized.

They provide that—

After April 1, 1900, the six standards, with their distinctive limits, shall disappear. Along with them goes the formal yearly inspection, as well as the many and varied grants fixed for optional subjects. In future, elementary public schools will have three divisions: (*a*) infants, (*b*) junior, (*c*) senior, and the arrangement of work in each division is to be such as shall secure the attainment of the education department's merit certificate by the completion of the elementary course of instruction. The classification of work is to be such as to afford every opportunity for progress. Promotion in one subject is not to be hampered by lack of proficiency in another. The scheme of education must provide principally for the instruction of the pupils in reading, writing, and arithmetic, amplified by the teaching of English, geography, history, and nature knowledge, together with adequate physical exercise, singing, and, for girls, needlework.

In each class a record of work in every subject is to be kept by the teacher with sufficient detail to show the previous course of instruction at any time throughout the year, and any examination of a class which the inspector shall make at any time of his visits, in order to satisfy himself as to the efficiency of the teaching, is to be based on this record. The grants to be earned will be determined by the scheme of work approved by the department and the general efficiency and thoroughness of the instruction given. Subject to conditions securing satisfactory staffing, there is to be paid on the average number of children in attendance throughout the year, (*a*) under 7 years of age a normal grant of 18s., (*b*) from 7 to 10 years of age a normal grant of 20s., and (*c*) over 10 years of age, who have not obtained the merit certificate, a normal grant of 22s. These grants may be increased, on the recommendation of the inspector, by 6d. a head for meritorious work, or diminished by the same sum for defects in instruction, and by 1s. for any omission of essential requirements.

Where efficient instruction in drawing is given for at least 1½ hours per week, an addition of 1s. 6d. in the junior division and 1s. 9d. in the senior division will be paid, with 3d. more if exercises in simple forms of manual occupation are given.

Scholars who have obtained the merit certificate pass into the advanced department of the school or enter a higher grade school. The so-called secondary departments of elementary schools have hitherto been encouraged or in great measure provided for out of a grant paid to committees in counties, and the larger burghs in Scotland for the purposes of secondary education. They will now have their definite name and place given to them. In the advanced departments managers must arrange for the continuance of adequate instruction in English, geography, history, arithmetic, and drawing; also for instruction in such subjects as the department, having regard to the circumstances of the school, shall determine—viz, languages, mathematics, science, practical instruction in experimental science. Laundry work and dressmaking are to be encouraged by special grants.

A distinct class of schools, to be called higher grade (science) schools, finds its place in the code. To it has been added also a higher-grade commercial course, in which modern languages are given an important place, along with bookkeeping, shorthand, and knowledge of commercial products. The first year of these science and commercial courses may be made identical, provided that it includes instruction both in experimental science and a modern language. In the second year of the commercial course at least eight hours, and in the third year ten hours, a week must, as a rule, be devoted to the study of modern languages. These courses are designed for pupils leaving school to begin the work of life at thirteen or fourteen years of age, and their chief value lies in their constituting, if effectively carried out, a sound general education of a distinctly modern type, and preparatory to the commercial, scientific, or technical training to be obtained in the evening classes of a technical institute or college.

UNIVERSITY NOTES.

Special study and research at Oxford.—In 1891 the University of Oxford instituted the degrees of bachelor of letters and bachelor of science, which are intended to promote and recognize the value of study and research.

A candidate for either degree must be of the age of 21 years, and (1) must either be a bachelor of arts in the University of Oxford or give evidence of a good general education; (2) must give evidence (to the board of faculty or studies to which the course of study or research on which he proposes to enter belongs) of his fitness to enter on it, as well as that it is such as may profitably be pursued within the university.

If his application is approved, his name will be registered and he will pay a fee of $15.

If he is not already a member of the university, he must be admitted to some college or hall, or as a noncollegiate student and be matriculated. He will be held to be admitted as a candidate for the degree at the time when his notice was first received if he was then a matriculated member of the university, or, if not, at the time of his matriculation.

No one is allowed to take the degree until he has kept at least eight terms of residence, but the terms will be reckoned from matriculation, so that anyone who has kept two years as an undergraduate will be qualified by residence. Leave may be obtained to substitute in any one year forty-two (not necessarily consecutive) days in vacation for a term's residence.

Every candidate's work is under the direction and supervision of the board of the faculty to which his subject belongs or of a committee appointed by that board. When a candidate has completed his course and applies for leave to proceed to the degree, the board of the faculty must satisfy itself of his merit and proficiency, either by examination simply or by requiring a dissertation or report of work done and also by examination. The boards are directed to give certificates only to those candidates who have attained a high standard of merit, and the grounds on which the certificates are granted must be stated in the University Gazette. The certificates are to be signed by two professors or readers, or by a professor or reader and two persons appointed by the board. They are registered by the secretary of the board of faculties.

Unlike degrees in arts, degrees in letters or in science do not carry with them any share in the government of the university, nor is a bachelor of letters or of science allowed to proceed to the degree of M. A. unless he has at some time qualified himself for and taken the degree of bachelor of arts. * * *

The statute establishing the examination in English language and literature, first held in 1896, directs that as far as possible equal weight is to be assigned to language and literature, provided that candidates who offer special subjects shall be at liberty to choose subjects connected either with language or with literature or with both.

The subjects of examinations are:

1. Portions of English authors to be studied with reference to the forms of the language, as examples of literature, and in their relation to the history and thought of the period to which they belong.

2. History of the English language.

3. History of English literature, including the history of criticism and of style in prose and verse.

4. Special subjects (one must be taken by candidates who aim at a place in the first or second class). Among those are old English, middle English, old French philology,

Scandinavian philology, French literature to 1400 A. D., Italian literature to the death of Milton, German literature from 1500 A. D. to the death of Goethe, these last three in their bearing on English literature.—[Student's Handbook to the University and Colleges of Oxford. 1895. pp. 183, 218.]

Advanced students at Cambridge.—The University of Cambridge admits persons as advanced students under the following conditions:

Each applicant must submit (1) a diploma or other certificate of graduation; (2) a statement as to the course or courses of (*a*) advanced study or (*b*) research which he desires to pursue, with such evidence of qualification, attainments, and previous study as he may be able to submit; (3) a certificate or declaration that he has attained the age of 21 years.

In exceptional cases persons who do not present a diploma or certificate of graduation may be admitted as advanced students, provided they give such evidence of special qualification as may be approved by the degree committee of the special board of studies with which the proposed course of advanced study or research is most nearly connected.

When the application has been approved by the special board connected with the applicant's studies, he must be admitted a member of a college or a noncollegiate student. An advanced student who has kept by residence at least six terms and has obeyed the regulations as to examinations, etc., may proceed to the degree of B. A., as also may an advanced student who has obtained a certificate of research. [Ordinances of the University of Cambridge, 1896.]

Chair of political economy at Owens College.—The city of Manchester, which has given its name to a special school of economists, is found wanting in adequate provision for the teaching of political economy.

A few students of economics may be found at the evening classes of the Owens College, but until recently there has been no chair of political economy. By the generosity of a member of the city council, Mr. W. F. Rothwell, this defect is now to be remedied. He has presented to the college a permanent endowment of $1,000 per annum, which will enable the authorities to raise the lectureship of political economy at Owens to the rank of a full professorship.—Educational Times. August 1, 1898, p. 307.

Laboratories of physiology and pathology.—The new laboratories of physiology and pathology at the University College, Liverpool, were formally opened on October 8. The laboratories have been erected and equipped in the most adequate way for study and research by the Rev. Thompson Yates, at a cost of £25,000.

Owens College has received benefactions from the Whitworth estate and otherwise, amounting to over £65,000 ($325,000).

Women students at Owens College.—The following retrospect of the education of women at Owens during the past fourteen years is from the Manchester Guardian:

In 1883 only two women, the first to take up work for a Victoria degree, attended classes in college, but gradually one class after another has been opened and now almost all the work, except some elementary classes, is done as it should be, in the college itself. The gradual manner in which the change was carried out has enabled the experiment to justify itself at every step. For some time there was a difficulty about instruction in science, laboratories as well as class rooms being necessary, but that has now been overcome, and the women students have full access to the excellent chemical, physical, and biological laboratories. The evening classes, too,

are open to women. Further, almost all prizes, scholarships, and fellowships connected with the college have been generously offered for the competition of the women students. Women graduates take their place among the associates of the college, thus sharing indirectly in the government of the college. In lighter matters, too, they take part in the corporate life of the institution, for though the women have their own debating and other societies, apart from the men's, joint meetings are not infrequently held by invitation, of one side or the other, and the subject of the moment is debated by the united societies. The change in academic arrangements has been accompanied by a change in the character of the students. Though there were always a few who gave their whole time to study, the majority attended one or perhaps two classes only. Now, out of 102 students last session, 67 were studying for the degrees of the Victoria University, and a few for London degrees. Thus the majority are now serious students. (Ed. Times, November 1, 1897, p. 446.)

University examinations for women.—In an address at the opening of the session at Bedford College, Mrs. Fawcett said, in regard to the refusal of Cambridge to remove the disabilities of women at Cambridge:

Notwithstanding this defeat, she was certain that the general drift of opinion was in favor of the removal of the educational disabilities of women. As to the proposal for a separate university for women, she regarded it not only as useless, but distinctly mischievous. Separate colleges, however, they must have. It was represented at Cambridge that they desired young men and women to live together in the same colleges. They desired nothing of the kind, but that was no reason for the creation of separate machinery for testing the knowledge which a university afforded. A separate university would involve waste of time, money, and energy. In the whole of the United Kingdom there were nine universities which opened their degrees entirely to women—in England, London, Victoria, and Durham; in Scotland, the four ancient Scottish universities; in Wales, the Welsh University; and in Ireland, the Royal Irish University. Did those who advocated a separate university want different subjects taught, or the same subjects taught differently? She remembered that one professor, on being asked if he would admit ladies to his classes, replied, "Yes, they may come, but I can't make my subjects amusing for ladies." They did not want that kind of thing. They wanted to be taught seriously and in the best manner. Teaching might be adapted for varying needs, but the cleavage line was not sex, but individuality. (Ed. Times, November 1, 1897, p. 447.)

London School of Medicine for Women.—The trustees of the Reid trust for the education of women have decided to offer a scholarship at the London School of Medicine for Women in memory of their cotrustee, the late Miss Bostock, of Penmaen, Glamorganshire. The value of the scholarship will be £60 a year, tenable for two or four years, and awarded on the result of the preliminary scientific examination of the University of London. The Bostock scholar must read for the London medical degree. (Nature, February 23, 1899, p. 404.)

The Library Association, through its education committee, has just completed a provisional scheme for classes in library economy, which it is hoped may eventually provide a thorough course of technical training. For the last five or six years a summer school has been held in London and has proved a great success, the present classes being the outcome of a demand for additional means of professional education. The first session is inaugurated this week at the Museum of Practical Geology, Jermyn street, W. (Public circular, February 26, 1898, p. 233.)

University of London.—The bill for the reconstruction of the University of London which was passed in August, 1898, just at the close of the session of Parliament, brings to a close efforts and agitations

extending over twenty years. The bill provided for the creation of a statutory commission whose advice will determine the ultimate character of the new university, which it is settled shall be a teaching university. The commission has already entered upon its duties, and the reports of its investigations promise a very complete view of the agencies for higher education that exist in London. Many of these will eventually be included in the new university.

It appears certain that higher commercial instruction will find place in the university curriculum. Even a faculty of commerce is proposed, and there is already talk of a preparatory course in commerce in some secondary school, as the City of London College, which shall lead to the university course. It is also probable that the London School of Economics and Political Science, recently established, will be added to the list of institutions to be recognized as schools of the university.

New university for Ireland.—The question of a Catholic university for Ireland has been prominently before Parliament during the present session, but no satisfactory measure has been yet submitted.

APPENDIX I.

THE PROPOSED UNIVERSITY FOR BIRMINGHAM.[1]

The movement started in Birmingham fifteen years ago for the establishment of a university in the Midlands has been growing so steadily in energy and in volume that the promoters feel justified in taking definite steps for the accomplishment of their object. The first stage of operations was reached last year, when the college founded by Sir Josiah Mason in 1880 was incorporated by act of Parliament under a new constitution and received the new name of "Mason University College." An important step forward was taken last week, July 4, 1898, when the first public meeting in favor of the proposal to create a university was held in the Council House under the chairmanship of the lord mayor of Birmingham and was attended by Mr. Joseph Chamberlain, M. P., and an influential gathering. The proceedings must have been in the highest degree satisfactory to the promoters, for not only were some interesting speeches delivered and much enthusiasm displayed but a very substantial proof of the earnestness with which the scheme is being taken up by the inhabitants was afforded by the announcement of promised donations to the requisite funds of about £96,000 ($480,000). The next step will be the issue of a public appeal for further donations, and it is confidently expected that the sum of £250,000 ($1,250,000), which it is estimated is necessary to complete the equipment of the college, to found new chairs, to supply additional buildings, and to provide for the administrative machinery of the university, will before long be subscribed.

The proceedings at the recent meeting included the resolution: "That in the opinion of this meeting it is essential that in the interest of the city and the Midland district generally a university shall be forthwith established in Birmingham." Mr. G. H. Kenrick, who moved this resolution, is a manufacturer at West Bromwich employing a large number of men, and is himself a donor of £10,000 to the fund. He has for many years taken a prominent and honorable part in promoting elementary and technical education in the city, and his opinion on such a question,

[1] From Nature, July 7, 1898, p. 227.

whether as a man of business or as a school manager, is entitled to respectful attention from his fellow-citizens. After referring to the influence which the existence of the university would have upon the training and education of teachers, Mr. Kirkpatrick went on to give his view as to the intimate relation which must be established between the university and the industries of the district, and it is hoped that both parties, the professors on the one hand and manufacturers on the other, will be careful to note the very sensible observations of the speaker upon this topic.

No man can now stand up and say that industry can get on very well without science. That idea has been almost given up, but a more dangerous one has arisen in its place. Some manufacturers know quite well that their industries are dependent upon scientific knowledge but they have got into the way of saying that they do not want people around them knowing too much, and that when they want a scientific man they can send for him. But a man of science called in on such occasions is not always able to prescribe the exact remedy for the particular disease concerning which he is consulted. This is not to be wondered at, considering that industry has done her best so long to keep science at a distance that science has pursued her own path independently, with small direct reference to the needs of industry.

Professor Tilden seconded the resolution, and took the opportunity of pointing out that, though in the past there had been much prejudice in the minds of British manufacturers against a university training, because they had been disposed to regard it as all very well for clergymen and schoolmasters, but useless in practical affairs, nevertheless a university rightly organized and rightly conducted might be made a most practical kind of thing.

He urged upon the meeting the importance of noting what is being done in other countries, especially the United States of America and Germany, and pointed to the fact that in these countries not only are universities numerous, but are influential and richly endowed, while the directors, managers, and even foremen in manufacturing concerns are almost entirely men who have received a complete scientific education and have taken a degree in one of the universities, or if not in the university in one of the polytechnics or technical schools. The polytechnics of London and the municipal technical schools in this country are institutions which have done and are doing good service; but there are indications that the public do not realize how different they are from their prototypes on the Continent, partly in consequence of the inferior quality of the teaching staff, and partly by reason of the fact that the instruction given in such institutions in this country is only partial, and does not demand the devotion of the whole time and energy of the student. As to the influence of the universities in England, it was obvious that the ancient universities, though perhaps partly alive to the question, are incapable of providing what is wanted by industry. A great opportunity is now at hand for creating a university of a new type, in which all that is best of the old and the new can be associated together; not merely a large public school, but a place for men and women, a place for study, and also eminently a place for research, and a place where that predominance of examinations which unfortunately prevails so generally in most British universities would be got rid of. In constituting her university Birmingham would do well to emphasize the claims of science in its application to industry by establishing a faculty of "technics," in which "applied science" should be put on an equality, so far as honors and rewards are concerned, with the faculties of arts and of pure science.

Mr. Chamberlain supported the motion in a speech which passed in review the course of events that had led up to the movement then inaugurated. He made a strong and effective appeal to local patriotism, which had done so much in the past, which had made Birmingham what it was, and which he believed would now set the crown upon their educational work.

The bishop of Hereford, in moving for the formation of a general committee, made

an interesting speech, which was listened to with all the more attention that the bishop of the diocese had endeavored to throw cold water on the scheme by pointing to the spiritual destitution of the district, and indicating his opinion that this ought to be remedied before other schemes were brought forward. The bishop of Hereford, however, pointed out that not only was it impossible to put a stop to a great tidal movement, which arose out of civic patriotism, but that the work in which they were engaged was actually more likely than any other to keep the growth of that spirit in every denomination in the city which would never rest till the spirtual needs of the community were adequately supplied. The bishop in concluding referred to Bristol and its University College, of which he is president.

At one time it seemed probable that the Birmingham project would take the shape of a federation of colleges, among which Bristol would be included. That idea seems now to be abandoned. But the success of movements of this kind seems to be dependent chiefly upon financial support, and if Birmingham brings her scheme to completion it may be hoped that this will serve as a stimulus to other cities to follow her example, so that at some future, not far distant, time not only will London have a university worthy of her great position, but every large center of population will be occupied by a seat of learning at once the guide and helper of local industry and a focus of the light and culture of the world.

APPENDIX II.

THE UNIVERSITY OF WALES.[1]

For the present, and until such time as Birmingham shall achieve a university, "Wales" stands in the position of Britain's youngest university. The three constituent colleges had been at work some years before the university was constituted, in 1893. Of these colleges, the University College of Wales, at Aberystwyth, was opened in 1872; the University College of South Wales and Monmouthshire, at Cardiff, in 1883, and the University College of North Wales, at Bangor, in 1884. Aberystwyth is the pioneer and premier college. It has the handsomest buildings, the longest stretch of history behind it, the largest number of university students, although in this last respect Cardiff runs very close. When Aberystwyth college had been ten or twelve years in existence, a commission was appointed to inquire into the question of university colleges for Wales. The commission recommended that there should be two colleges, for North and South Wales, respectively; that the college then at Aberystwyth be removed to Bangor; that a new one be founded at Cardiff, and that £4,000 per annum of the public money be allotted to each institution. But Aberystwyth clung to its college. It preferred to support the institution rather than dispense with it. As a result of many and strenuous efforts, an additional grant of £4,000 was allotted to Aberystwyth, and in this way Wales has one college more than some might think strictly necessary, especially when one considers her population. Each of the three colleges has a training department for men and women, thus bringing the elementary school teachers into close touch with the university. Cardiff has schools for mining and civil engineering; Bangor and Aberystwyth have departments of agriculture and rural economy. In all, in this small country of one and a half million inhabitants, there are now more than a thousand students at work. They are, however, by no means all Welsh; a very large majority of the men are Welsh; among the women there is a considerable number of students who belong to the "adjacent peninsula."

If primogeniture counts for anything, Aberystwyth has a natural right to take precedence, and a brief description of the college may not be out of place. It is

[1] By C. C. Bremer. Reprinted from the Educational Times, May 1, 1899.

built on the south side of the town, with a great number of class rooms and lecture halls overlooking the sea. The north or main building, with two towers, which somewhat recall the tower of Pisa to those who know Italy, is now the oldest part; the science wing on the south side is decorated with mosaics more curious than admirable. This wing and the main building were long connected by an ancient and inconvenient block, which was pulled down a short time ago and replaced by the new central block, formally opened in the autumn of 1898. The block cost £15,000, exclusive of furniture and equipment. It is not as handsome and distinctive in its architecture as the buildings it connects, but is doubtless light, convenient, and, above all, necessary for the expansion of the work. The main building contains what the students call "The Quad," but what is really a handsome covered hall, affording a meeting ground for professors and students. A few photos, three small Turners and other pictures, some by Lord Leighton, Dante Rossetti, Sir E. Burne-Jones, adorn the walls, and some cases of pottery and so forth run down the center of the hall. It is surrounded by an inner balcony, on which a large number of professors' class rooms open. Other notable features are the library, with a fine sea view and beautiful fixtures, presented to the college by American Welshmen and Welshwomen; and the examination hall, with a small stage, which suggests that the drama is not unknown at Aberystwyth. The college is built on a very small space, close to the pier and sea front; indeed, it intercepts the right of way along the sea front. At the back it leaves a pavement of shabby width and a narrow roadway. After the fire of 1884 the question was discussed whether it might not be advisable to remove the college farther from the town and obtain a larger space; but proximity has also its advantages, and these were considered to outweigh the disadvantages.

The town numbers 8,000 inhabitants. It is a fashionable watering place during the summer and early autumn months. The method of disposing of the students is convenient for lodging-house keepers, a class with which Aberystwyth abounds. All the women—to wit, 177—are gathered into a hall of residence, Alexandra Hall, at the extreme north of Marine Terrace; men students, on the other hand, live in lodgings. Five shillings a week is not an uncommon figure for lodging, and two men together pay 4s. each. A professor assured me that the weekly bill of one of his students came to 11s. 6d., and on this sum he was in the habit of entertaining friends. Fifteen shillings or 18s. a week is quite a common sum for board and lodging, and, as the tuition fee for the college is £10 per annum, it is evident that at least there is a chance at Aberystwyth of reaching a different class from the general run of undergraduates at Cambridge or Oxford. Where a man enters for a scientific course requiring a great deal of chemical paraphernalia, a laboratory fee might make his expenses mount to £15, inclusive, but it never exceeds this sum unless special coaching be necessary. The number of students at the beginning of the 1898-99 session was 407, and of these 190 were women.

It is interesting, at a time when such fierce attacks are being made on the classics as a branch of study, to note how many students devote their time to them. The figures are as follows: Greek, 154; Latin, 287; English, 245; history, 187; Welsh, 48; French, 138; German, 13; Hebrew, 16; elementary logic, 129; philosophy, 29; mathematics, 231; chemistry, 95; physics, 63; general biology, 24; botany, 35; zoology, 6; geology, 13; agriculture, 8; agricultural chemistry, 8; political economy, 2; education, 5; veterinary science, 8; together with some other subjects with smaller figures attached. It is thus evident that even in a college of yesterday the classics do more than hold their own.

Wales is the most democratic university that the mind of any man, except, perhaps, an American, has yet conceived. It is more democratic than the Scottish universities.

Each university college has a court of governors. Out of these is selected a council. Moreover, each college has a senate, mainly composed of the teaching staff.

The senate has charge of all academic matters, such as the framing of schemes, discipline, and so forth; the court must sanction everything; the council is greatly concerned with finance.

The university also possesses a university court, including 12 representatives from each college; a university senate, composed of the heads of the departments of the three colleges, and the guild of graduates, composed of all the graduates and the three staffs. Members of the guild become so two years after graduation.

After matriculation the student must take up a minimum of 10 subjects, including elementary logic. Of these five may be carried to the intermediate stage, and in one a student must specialize. If a student passes in honors, this is allowed to count as two. The degree course is different from London, in that a student of the latter may take the course in two years, whereas Wales, approving slow assimilation, demands three years.

The university is too young to have specialized; its aim so far is general culture. But, though it offers no speciality, the circumstances already referred to have developed two departments which are of first-class importance—the training department and agriculture.

The former is mainly for elementary teachers, although a few secondary students are pursuing their studies at Aberystwyth, practising in the elementary schools just as the elementary students do. The Government course in a training college is for two years, but the education department now looks with a more favorable eye on general culture for teachers, and grants encouragement and money aid to all who will work for a third year. This fits in admirably with the degree course, so that a vast majority of the students are working for the degree whether or not they complete their third year. The great difficulty in this department is that a number of students have matriculated before coming to the university, and others are only ready to matriculate after a year's work. University colleges, from financial and other considerations, can not always pursue the wisest policy, which in this case would be to accept no student below the matriculation standard. The training department numbers 110 students, of whom 50 are women. Of the first year only 2 out of 20 men students had not matriculated; out of 28 women 12 had not matriculated. The reason why the women fall below the standard is that the Queen's scholarship does not require mathematics, and women devote much time to domestic economy and sewing. Two years ago it would have been impossible to find so many as 12 matriculated women, so that the standard is rising.

As regards the degree, for which many students are working, men incline to classics, mathematics, natural science; women to English, French, German, history. The love of science receives a fillip from the grants which teachers earn from South Kensington. A degree in English history and literature is an admirable foundation for the elementary school teacher to erect his structure upon; and, perhaps, to Wales, as much as to any other university, is due the idea that the degree is not only for the secondary teacher. Moreover, it is highly useful for elementary teachers to rub shoulders with a world outside the narrow one of the training college, one of the worst features of which is the development of a self-satisfaction that can not be shaken, and a poor, mean ideal too soon reached and rarely disturbed by comparison with greater attainment. The Queen's scholars often enter college after four years of pupil teaching, dull, dazed, mechanical, overworked. Happily the recuperative power of the mind is great, and, at the end of the course, many students have been mentally remade, their horizon widened, their ideal altered. Most of the men are Welsh, and some have a pretty strong accent, since they come from rural districts. The women, on the other hand, are urban, and, generally speaking, come from a higher social class than the men.

The agricultural section is of more recent date than the training department, and can not boast such large figures, but it is a solid and practical development which has proceeded from the people's necessities. It is associated with six county coun-

cils, which subscribe £1,200 per annum toward its maintenance. In a recent report Principal Roberts claimed for it that it is effecting a silent revolution in Welsh agriculture. The board of agriculture has also come to its aid, granting at first a subsidy of £250, now increased to £800 per annum. Landowners and farmers are cooperating, and, at great expense, test practically the methods expounded in class rooms. Theorists, that is, unpractical theorists, would need to tread warily when tests are applied in this way. Farmers can now get access to scientific information and guidance in a way undreamed of before. The department works in four ways, determined to cast the seed into all sorts of soil. It would be many years before anything could be achieved if Wales waited until farmers could go through the agricultural-degree course. There are, therefore, four courses of instruction provided: (1) An elementary seven weeks' course is provided for farmers during the winter months. (2) An advanced course lasting sixteen weeks, and mainly for those who have profited by the first course, begins in October. Both these short courses deal with the essentials of agriculture, and are intended for those who have already practical knowledge of the subject. In both courses students take agricultural chemistry, since it is the basal science of modern agriculture. (3) The diploma course lasts for two full sessions, and is chiefly for boys who have left school and who have had a good preliminary education. Such subjects are studied as botany, physics, mathematics, zoology, in the first year; agricultural engineering, surveying, geology, entomology, veterinary science, in the second. The diploma a student earns is "associate in agriculture." (4) The fourth is the degree of B. Sc. in the University of Wales, lasting three sessions, with specialization in agricultural science during the last two sessions, as well as in two or three branches of pure science. Thus agriculture is as well provided for in Wales as anywhere in the kingdom. This is the Aberystwyth College programme in agriculture. Come there, and you will be served with a course. Numbers of people, however, will not do this, and Aberystwyth sends out an extension lecturer and dairy instructors to catch the farmers in highways and hedges and compel them to learn. Seven hundred lectures have been given in this way between 1891 and 1897 to audiences of 50,000 persons. The traveling dairy schools have had 1,900 pupils. During the summer months 150 women have come to Aberystwyth to get instruction in butter and cheese making, and though practically Welsh visitors only get bad and very salt butter, there is always the hope that the leaven will yet leaven the lump. During the 1897-98 session 51 men were agricultural students; 44 took short courses and 7 the full course. Young Welshmen are likely to benefit by the agricultural department. They are enterprising and go-ahead, like the Scotch, not so much rooted and grounded in their ancestors' methods as the average English farmer. It is significant that a chair of agriculture was founded at Edinburgh University in 1790; in Wales, 1890-91.

Space fails to tell of the pleasant social life of the college, shared by both sexes, and including debates, lectures, concerts, dramatics, and other social entertainments. The staff may be said to be mixed, since one lady has a post in the training department and another teaches needlework. The sexes are almost on an equality, and attend the same classes without distinction or difference. Saving a few students who reside with parents or relatives in the town, the women are all resident in Alexandra Hall, under the care of Miss E. A. Carpenter, of whom it is only fair to say that the great expansion of the college on the women's side is due to her. When she assumed the post of superintendent in 1887 there were 11 women students. House was added to house under her able management until, in 1896, Alexandra Hall, a handsome structure facing the sea at the north end of the parade, was opened, accommodating 150 students. Even this has not proved sufficient, and in 1898 a new wing was added, so that the entire building can now hold 207. At present the number is 177.

General studies, used by those who have cubicles, face the "melancholy ocean," as do a large number of study-bedrooms, the dining room, and library. Students

obtain board and lodging for a sum varying from 30 guineas per annum for a cubicle to 40 guineas for a study-bedroom. The completeness of the service arrangements, the excellence of the food, the large amount of liberty accorded, would require an article to themselves. Most people know the unbending rigidity of life in an institution, yet the tired student (not a sick person) at Alexandra Hall may have any meal except dinner in her own room, if a student will carry the meal upstairs. If the reader add 30 guineas and the college tuition fee of £10, it becomes evident that a young woman can obtain an excellent education for a little less than £42 per annum. This explains why so many Englishwomen flock to the Welsh colleges. It only remains to be said that Aberystwyth air is as fine as the scenery, so that even a pretty severe course of study does not injure, but rather improves, the health of the students.

APPENDIX III.

SOME NOTES ON THE MEDIÆVAL UNIVERSITIES OF SCOTLAND IN RELATION TO THEIR CONTINENTAL MODELS.[1]

[By D. G. RITCHIE, Professor in the University of St. Andrews.]

The origins of those universities and colleges to which we are proud to belong should be of some interest to all of us, and especially to a society such as this, which seeks to restore the ancient links that bound the students of one country to those of another. I must begin by apologizing for trespass on the province of the historian, and I should state that my materials are mostly collected at second-hand from such sources as Mr. Rashdall's recent work on the mediæval universities.[2] Only in a few small points am I able to supplement Mr. Rashdall's scholarly researches; yet possibly these points may interest you.

Three of our Scottish universities were founded in the fifteenth century—St. Andrews in 1413, Glasgow in 1450, and Aberdeen in 1494. [3] (Edinburgh was founded nearly a century later, in 1582, after the Protestant Reformation.) In earlier days Scottish students had resorted to Oxford in considerable numbers; but the frequent wars with England, and the fact that in papal schisms Scotland and England generally adhered to different popes, made Scottish students find Oxford a somewhat uncomfortable place of residence. The feeling of Oxford toward Scottish students is curiously illustrated by the fact that the principal of an Oxford hall insisted on being allowed to take a solemn oath that he was not a Scotsman![4]

Numbers of Scotsmen resorted to Paris (where the Scots College had been founded in 1326, and was specially encouraged by the Bruces as a rival to Balliol College, Oxford), and they formed one of the "tribes" of the German nation there. They constituted one of the student nations at Orleans and also at Padua, and the wandering Scot was to be found at most of the universities of continental Europe. But in the beginning of the fifteenth century Scotland came to desire a university of its own. The dangers of travel by sea and land, the risk from wars and brigandage, the impediments put in the way of Scotch students by "schismatics their enemies," are recited in the papal bull of August 28, 1413, as reasons for founding a university in Scotland; and the inconveniences suffered by Scotch students had then probably reached their maximum, for the pope, Benedict III (Peter de Luna), who issued this

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[1] Reprinted from the Transactions of the Franco-Scottish Society (Scottish Branch).

[2] "The Universities of Europe in the Middle Ages," by Hastings Rashdall, M. A., 2 vols., Oxford, 1895.

[3] The dates here given are those of the papal bulls.

[4] Rashdall, II, p. 417.

bull, was a pope acknowledged by Spain and by Scotland alone. The first Scottish university was thus founded by a pope whom only two countries acknowledged, and with no royal charter, for the king of Scots, the poet-king, James I, was then a prisoner in England. We can assign a definite date to the foundation of St. Andrews, as of all the later universities of Europe; but even before the papal bull was issued or asked for by the bishop, the seeds of the university had been planted. In the summer of 1410 (as Mr. Maitland Anderson tells us[1]) a number of enlightened Scotch ecclesiastics formed a society for the instruction of all who chose to attend their lectures. The abbot of Scone, Lawrence of Lindores, expounded the great philosophical text-book of the Middle Ages, the "Sentences" of Petrus Lombardus; others gave lectures on theology, on logic, on canon and civil law; and this society of lecturers and students assumed the title of a "university" (in its mediæval sense), even before the bishop's charter (of 1411) was granted conferring on this society of masters and scholars the customary privileges and immunities. If we go further back, to the rise of the oldest universities, we can point to no definite date for the foundation of Bologna or Paris, of Oxford or Cambridge. They were not made, but grew; and Oxford never even obtained a papal bull at all to define or secure its privileges, but maintained them simply in virtue of unquestioned custom. That the University of Bologna was founded by the Emperor Theodosius II, that the University of Oxford was founded by Alfred the Great, and the University of Paris by Charlemagne, are myths of the same kind and of comparatively late origin.

Universities are a distinctively mediæval product. Writers on Greek and Roman history sometimes, in an endeavor to vivify the past, speak of the "University of Athens," or the "University of Rhodes" or "of Alexandria;" and it is true that the young Roman of Cicero's time, for instance, resorted to Athens to carry on his education in the same spirit as that in which students flocked from all parts of Europe to Bologna, or to Paris, or to Oxford in the twelfth and thirteenth centuries. But to speak of the "University of Athens" or "of Alexandria" is strictly an historical anachronism. The teachers of philosophy and of rhetoric in the ancient world taught quite independently of one another. They came so far to perform the function of a university, but they did not constitute a university. If I may borrow a distinction from zoology, the schools of Athens and our universities are "analogous," but not "homologous" structures. "Universitas," in its original sense, means a "society," a "guild," a "corporation." And the mediæval universities are the product of the same spirit of voluntary association which produced the trade guilds. This mediæval habit of voluntary association was rendered necessary by the weakness of the State for the maintenance of law and order. The "university" of Bologna originally meant nothing more than the society formed by the foreigners who had come to Bologna to study civil and canon law, and who bound themselves together for mutual help and protection against the citizens. The notion is still current in some quarters that a "university" means an institution where all subjects are studied. Historically, this is a complete delusion. Some of the greatest mediæval universities never had all the faculties. Thus at Paris there was no faculty of civil law,[2] at Bologna there was no proper faculty of theology. A mediæval "university," if we look for the truest parallel in the modern world, was a trade union of scholars, or of teachers, or of both; and the method by which these associations sought to enforce their demands was, as with modern trade unions, the method of a "strike"—a "suspension of lectures" on the part of a university of masters, the threat to migrate and leave the town on the part of a university of scholars.

In modern times universities, at least in Europe, have come in varying degrees to be more directly under the governments of the countries in which they are situated—

[1] "The University of St. Andrews: an Historical Sketch" (Cupar, 1878), p. 2; a sketch which, it is to be hoped, may some day be worked up into a complete picture.

[2] See Rashdall, I, page 323, note 4.

more so in France and Germany than in Scotland, more so in Scotland than in England. We may, perhaps, find the first germs of this later stage of academical evolution in the constitution which Bishop Elphinston framed for the University of Aberdeen; the power of making statutes was intrusted to the chancellor, rector, resident doctors, etc., but along with them were put at least two privy councillors of Scotland.[1] We can thus distinguish three distinct stages in the evolution of the higher education of Europe—first, the isolated "sophist," "philosopher," or "rhetorician," who might become the founder of a school or sect, which in course of time might be endowed by private or public munificence, but who was quite independent of the other and generally rival teachers of the same place; secondly, the association or guild of teachers or scholars, or of both, which constitutes the mediæval university, and out of which has been developed the third stage, our modern systematically organized universities, more or less directly under state control.

In the papal bull for the foundation of St. Andrew's a term is used as convertible with universitas studii, which originally had a distinct meaning—studium generale. (The bull of Alexander VI, for the formation of Aberdeen, speaks of universitas studii generalis.) This term contains more of the meaning we usually connect with a university, but it is likewise often misunderstood. It does not mean an institution for the study of all sorts of subjects, but an institution for students from all quarters of the world, as distinct from a merely local school. It was this cosmopolitan character of the mediæval universities which brought the pope into special connection with them. It came to be recognized that only the pope, or the holy Roman emperor (in those countries which acknowledged his authority) could confer the necessary privileges; and thus even studia, which had arisen and acquired a more than local reputation independently of papal and imperial authority, came to apply for papal bulls and imperial charters. It is this, also, which explains the way in which the universities of one country came to influence the type of those in another, irrespective of neighborhood or of political ties—how, e. g., the universities of Scotland bear more resemblance to those of Italy and of Germany and of the Low Countries than to those of England, or even of Scotland's ancient political ally, France. The bull of foundation of Glasgow (Nicholas V, 1450), conferred on it the privileges of Bologna, and the statutes of its arts faculty make frequent reference to the customs of the University of Cologne. Bishop Elphinston, however, in his statutes for Aberdeen, enjoins the regents in arts to lecture after the manner of those of Paris; the professor of canon law was to take Paris, and the professor of civil law was to take Orleans, as his model.

There are some respects in which the Scottish universities retain more distinct survivals from (or revivals of) mediæval institutions than any other universities.[2] One of these is the election of the rector by the students, including those who have not yet taken any degree and who may never take any. Some of the students, if asked, might perhaps say that they have this right because of the eternal fitness of things, students being always wise and professors foolish. A lawyer, if consulted, might be content to say that they have this right because it has been conferred on them by the act of Parliament of 1858. A historian requires some further explanation of a practice so unlike what exists elsewhere; and for a historical explanation we must go back to the Italian law school of Bologna in the twelfth century. When the study of Roman law, which had never died out in Italy, revived in Bologna, the fame of some of the teachers of that city attracted students from all parts of Christendom. The foreign students found it necessary to form themselves into a society, a guild, a "students' union." That, as already explained, is the original meaning of "universitas scholarium." The teachers or students, who were citizens of Bologna,

[1] Rashdall, II, page 310.

[2] This was clearly pointed out by Prof. S. S. Laurie, in his "Lectures on the Rise and Early Constitution of Universities" (1886), p. 193.

had the protection of their own municipality and did not feel the need of special organization; the "universitas," or students' union, was an attempt on the part of the foreigners "to create for themselves an artificial citizenship."[1] This guild, or union, elected its own president, who was called by a title which had come to be used as the Latin equivalent of the Italian podestà (the elected chief magistrate of a Lombard town), and that title was "rector." (In Oxford and Cambridge we find the words rector and procurator or "proctor" used as convertible terms.) These law students of Bologna were, as a rule, much older than the arts students of mediæval Paris or Oxford, or than the arts students of the Scottish universities either in mediæval or modern times. Many of them were beneficed clergy, who had obtained leave of absence in order to study canon or civil law. At Bologna the rector had to be a secular clerk (i. e., of the clerical order, but not under monastic vows), at least twenty-four years of age. The real modern analogue of the original mediæval rector would be the president of the students' representative council.

There can be no doubt that it was from the Italian student universities that the election of the rector by the students was transferred to the Scottish universities when they were founded. In Paris, where the rector of the arts students became the chief authority in the university, he was elected by the masters of arts, and not by undergraduates. (Similarly, in Oxford, the two proctors were elected by the masters of the northern and southern "nations," respectively.)

The position of the rector in the Italian universities became somewhat burdensome, except to very wealthy men. Thus, at the inauguration of the rector of Padua, a tournament was held, at which he had to provide 200 spears and 200 pairs of gloves for the combatants. In the sixteenth century, at Bologna, it was the established custom for the students to set upon the newly elected rector, tear his clothes off his back, and then require him to buy back the fragments at high prices. The statute of 1552 was passed in order to restrain "the too horrid and petulant mirth" of the occasion; but it only prohibits the demand for money, and expressly says: "We do not forbid the pulling off and tearing in pieces of the raiment, provided that those who have torn the clothes may not exact any payment therefor."[2] Such was the moderation of university reform in those days. Quite lately, at St. Andrews, the rector, instead of giving the customary address, provided at considerable expense a dinner and a dance. I do not know how far this is to be interpreted as a reversion to mediæval practices.

The Scottish universities are peculiar in having at their head, alongside of a rector elected for short periods, a chancellor holding office for life. (Elsewhere one or other of those offices has disappeared, or, as with the proctors at Oxford and Cambridge, its functions have become practically different.) It is the chancellor, or in his absence the vice-chancellor, who alone confers degrees. For an explanation of the office of chancellor we must turn, not to Bologna, but to Paris and Oxford. The chancellor in Paris was not an officer of the university at all, but the chancellor of the cathedral church of Paris. Before the rise of the universities the cathedral schools had been the most important educational institutions in northern Europe—far more important than the monasteries, which did not care to train those who were not going to become monks. The custom had grown up that anyone wishing to exercise the profession of teacher must obtain the license of the chancellor; and a university degree in its original meaning is simply a teacher's certificate. The University of Oxford, whether or not it came into existence (as Mr. Rashdall argues[3]) through Henry II's recall of English students from Paris in 1167, certainly grew up on the model of that great theological and philosophical school. But Oxford was not in mediæval times a cathedral city. It was in the diocese of Lincoln. The bishop was far away. So that the chancellor was from the first an officer of the

[1] Rashdall, I., p. 152. [2] Ibid, I, pp. 187, 188. [3] II, p. 329.

university, and came to combine the functions of a continental chancellor with those of a continental rector. When the Scottish universities were founded we find, alongside of the temporary rector, on the model of Bologna, the permanent chancellor to a large extent on the model of Oxford. In each of the three mediæval Scottish universities (all of them being in cathedral towns) the bishop was himself the chancellor. And this practice was followed in St. Andrews, Glasgow, and Aberdeen during the periods of restored episcopacy in the seventeenth century.

The academic degree is, as I have already said, a license to teach. Our degree of artium magister is identical in its meaning with the doctor philosophiæ which survives in Germany and which has been borrowed from Germany by many of the American universities. German diplomas, it may be mentioned, often confer the degree in the style doctor philosophiæ et magister artium. In their original mediæval use the names magister, doctor, professor, were all convertible. We have a survival of this last identification in the English use of S. T. P. (sacræ theologiæ professor) as the equivalent of D. D. Originally every master (or doctor) might be compelled to teach at his university for a short period after receiving his degree. There is a formal survival of this in Oxford; for two years after taking the M. A. degree a graduate is a magister necessarie regens, and may be compelled to attend the "Ancient house of congregation," which exists for the purpose of conferring degrees. The B. A. was only a preliminary stage. The word baccalarius simply means an apprentice. The bachelor is the "pupil teacher," who has to do some teaching while continuing his studies. The old Oxford form of admission to the B. A. degree ran: "Domine A. B., ego admitto te ad lectionem [i. e., dictating and expounding] cujuslibet libri Logices Aristotelis et insuper earum artium quas et quatenus per statuta audivisse teneris." The "ethics" and the "metaphysics" could only be taught by masters, the logic was intrusted to the apprentices.

Only gradually did a definite class of university teachers come to be differentiated from the other graduates. The process in Scotland was rendered much more rapid by the formation of colleges, which are now distinguishable from the university in St. Andrews alone. The Scottish colleges were not, like those of Paris and Oxford, primarily houses of residence for students, but were mainly endowments for teachers, with provision for only a small number of resident scholars, as in Germany and the low countries. The professors of the Scottish universities are the lineal successors of those magistri regentes for whom a salaried post as a teacher was provided by the foundation of a college. For a long time the practice of "regenting" survived in Scotland—i. e., the masters or regents (as they are called) were not teachers of one particular subject, but of all in turn, like the tutors of an Oxford college until quite lately. Only by gradual steps the specialized professor was developed, and first of all in subjects like "the humanities" (Latin and Greek), which did not enter into the mediæval curriculum, or like mathematics, which made such great advances in the seventeenth century. The specialized professorships were not completely realized till the early part of last century; not till the middle of it in Aberdeen.

What has just been said will serve to explain some of the ancient forms which survive in our ceremonies of conferring degrees. The Scottish ceremony of capping (birettatio) is a survival of the original ceremony of "inception"—i. e., the admission of a new member to the guild of teachers. The ceremony still used at Oxford may seem to the eye of the onlooker somewhat more elaborate, but is in reality not the ceremony of inception, which has died out, but only the giving of a license to incept. Scotland has retained the actual "capping." The academic cap was in old days only worn by duly licensed teachers, and they used to keep it on their heads while lecturing, as some Oxford and Cambridge professors do still, and precisely as a Roman priest wears his biretta in the pulpit. The ceremony by which professors are still inducted at St. Andrews seems to me the most complete survival of the old form of inception. It includes the handing over to the person admitted of a book as a symbol of office, and in his "incepting"—i. e., beginning the exercise of his

functions by having to give a lecture. When degrees in grammar were conferred, as, e. g., at Cambridge in the Middle Ages (i. e., a license to teach Latin to boys, for Latin was not taught at the university, but a knowledge of it was presupposed), the ceremony consisted in the person incepting having a birch rod handed to him as a symbol of his office, and straightway proceeding to flog a "shrewd [i. e., naughty] boy." The boy was purveyed by the bedel, and received a groat "for his labor."[1]

Universities differ greatly in the ceremonies by which they confer degrees. They differ in the kinds of examinations which are a preliminary to these ceremonies. They all agree in one thing—they require (except in the case of purely honorary degrees) the payment of fees. Very good reasons of finance can be given why fees should be paid. But what is the origin of the practice? It is simply the newcomer paying his footing. Originally a master incepting had to "stand a drink" to the others of his nation. After a time the money, or some of it, came to be set aside pro bono communi, and thus a regular system of fees grew up. The earliest custom was no doubt to send presents of robes to the doctors, bedels, and other officials; but these came to be commuted into money payments, though there were still also certain customary presents—e. g., at Bologna, a cap, gloves, and a present of sweetmeats to each of the doctors and to the archdeacon. At Bologna, also, the new doctor had to give a banquet to his colleagues and university friends. Even tilts and tournaments were sometimes provided by the wealthier students, though this was forbidden. In Spanish universities a bull fight was given at the expense of the inceptor. As late as 1626 banquets on such occasions were suppressed in King's College, Aberdeen; but it was permitted "to bestow upoune the maisteris and examinatouris ane drinke upoune fute for recreatioun allanerlie without anie forder addition."[2] Among the students at St. Andrews there still lingers on a custom, though it is not, I believe, so rigidly observed as of old, which seems to me undoubtedly a survival of those usages in which graduation or matriculation fees originated. The day of a certain fair in November is known as "Raisinday," and on that day any fourth-year man may exact from any freshman one pound of raisins, giving in exchange a certificate, which till lately was always in Latin. This certificate was the bearer's proof that he was now a duly admitted member of the society of students. I have seen one of these certificates, but it was unmistakably modern English turned into dog Latin. I have been told of an older formula, which ran somewhat as follows: "Ego A. B. Magistrandus accipio a te C. D. Bejauno [i. e. beejaune, "freshman"] unum pondus racemorum."

Three of the Scottish universities are mediæval in origin. They are the three in which an academic dress is still worn by the students, at least by the arts-students, or some of them—red gowns, such as were worn by the German nation at Bologna, of which the Scotch students there would form a part. The fourth, the University of Edinburgh, is the offspring of the Reformation and the Renaissance. It was founded in the name of the king, with no sanction given or asked of the pope. It is not officially described as "universitas" or "studium generale;" it is the Academia Jacobi VI. Academies had begun with the Italian Renaissance, with the Academy of Florence, which renewed the name of Plato's school. In accordance with the Renaissance character of Edinburgh University is its dedication, still to be read on an old stone built into the present building, "Christo et Musis"—a mode of expressing "true religion and sound learning," which one is tempted to think may have been suggested by George Buchanan, who wrote classical dramas on Jephthah and John the Baptist, and turned the Psalms into the meters of Horace. But there is no evidence to connect Buchanan with Edinburgh University, which claims, indeed, to possess his skull, but may only be indirectly indebted to his brains.

From the first, Edinburgh University, unlike the other Scottish universities, had

[1] Mullinger, History of University of Cambridge, I., p. 345; Laurie, Universities, p. 71.

[2] R. S. Rait, The Universities of Aberdeen (1895), p. 133.

a close connection with the city. It was "the town's college," and the town council of Edinburgh were its patrons and rulers, sometimes enlightened and sometimes not. The model for Edinburgh was not Paris nor Bologna, not Orleans nor Cologne, but Geneva. Geneva, however, was a sovereign republic, and the relations of the government of this city republic to its academy were transferred to the case of Edinburgh.[1] It was historically fitting that when the constitution of Edinburgh University was reorganized by government in 1858 the town council should be represented in its ruling body (the court); but there were no reasons of historical fitness why the provosts of the other university towns should have been accorded a similar position in connection with the three older universities, which were never in any sense municipal institutions.[2]

These are only a few miscellaneous notes. But it is perhaps worth while to try to see some present usages in the light of their far-back origins. Of course, to know what universities originally were does not of itself settle the question of what they ought to be now. Different times have different needs. But it is always worth knowing the past life of the institutions under which we live. There is great gain in the continuity of sentiment that links distant generations together. It is a pity to drop old traditions when they are harmless; it is worth reviving some things that are not merely venerable, but useful.

The immediate effect of the ecclesiastical revolutions of the sixteenth century was to destroy, to a great extent, the international character of universities and to make them merely national institutions. Scotland was, indeed, in some respects less cut off from the Continent than England. Scottish students, after the Reformation, resorted to Leyden and Utrecht, as in older days they went to Paris or Bologna. In this century we are recovering a little of the international academic sentiment between students of different countries; and it is a most valuable sentiment, which may make more for peace and civilization than much of the work of statesmen and ambassadors.

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[1] Cf. Grant, Story of the University of Edinburgh, I., p. 126, etc.

[2] Cf. the remarks of Prof. S. S. Laurie, "The rise and constitution of universities," p. 194.

CHAPTER II.

EDUCATION IN AUSTRALASIA.

[For previous articles in the Reports of the Commissioner of Education see: Secondary Education in New Zealand, by Sir Robert Stout, K. C. M. G., Report for 1890-91, Vol. 1, pp. 45-94.—Education in New Zealand, Report for 1892-93, Vol. 1, pp. 258-261.—Systems of Public Education in Australia, New Zealand, and Tasmania, Report for 1897-98, Vol. 1, pp. 189-214.]

TOPICAL OUTLINE.

Australia: Population and leading industries of the five divisions.—Proposed federation.—Educational statistics, current and comparative.—The systems of education: Control; sources of support; completeness of school provision; compulsion; secular character of the schools.—Historic survey.—Particulars from current reports: New South Wales; Queensland; South Australia; Victoria; West Australia.

New Zealand: Provisions of the school law and statistical summaries: Education, free, secular, and compulsory; local control; sources of school fund; course of study and classification of pupils; qualifications and salaries of teachers.—Provision for special classes: Schools for the deaf-mute; for the blind; for the natives; for vicious and unruly children.—Manual training and technical instruction.—Secondary schools.—Superior schools.—Libraries and learned societies.—Statistics of illiteracy.

Tasmania: Summary of latest official report.

AUSTRALIA.

Area and population.—The five colonies of Australia comprise a total area of 2,946,691 square miles and a population of 3,476,439, as estimated June, 1897. The importance of these particulars in a survey of the educational systems of the colonies will be better understood by the separate statement for each colony, as shown below:

	Area, square miles.	Population, June 30, 1897.	Population per square mile.
1. New South Wales	310,700	1,311,400	4.22
2. Queensland	668,497	422,941	.70
3. South Australia	903,690	356,835	.39
4. Victoria	87,844	1,177,444	13.4
5. West Australia	975,920	157,819	.16

The leading industries of the colonies—agriculture, grazing, and mining—imply for a large proportion of the population all the conditions that pertain to rural life. The increase of the urban population is, however, noticeable. In New South Wales more than one-third the people (37 per cent) are in towns of above 9,000 inhabitants; Sydney,

the capital, has 410,000. Of the population of Victoria 47 per cent are in towns having each more than 20,000 inhabitants; the capital, Melbourne, has 451,110.

The ratio of the population of the capital to the total population of each colony is as follows:

Capital.	Population, 1897.	Ratio to total population.
		Per cent.
Melbourne (Victoria)	451,110	38.3
Sydney (New South Wales)	410,000	31.2
Adelaide (South Australia)	144,350	40.4
Brisbane (Queensland)	100,913	21.1
Perth (West Australia)	25,000	15.8

Under the conditions of population here indicated the difference between urban and rural schools is very marked. The standards expressed in the law are only attainable in the large centers, and this is so clearly recognized that special adjustments are authorized by law for isolated communities and pioneer settlements. The present year promises to be made memorable in the history of these colonies by the final adoption of articles of federation and the establishment of a common capital in New South Wales. The federation, if accomplished, will naturally have a tendency to unify still further the educational systems of the separate colonies, which are already alike in many essentials.

The principal facts in the current record of the public school systems, and also a comparative view for the period 1890 to 1897, are here presented. To complete the summary the statistics of private schools and universities are also given.

Statistics of public day schools, 1897.

	Year.	Total enrollment.	Average attendance.		Teachers.			Expenditure.		
			Number.	Per cent of enrollment.	Men.	Women.	Total.	Total.	Per capita of enrollment.	Per capita of population.
New South Wales.	1897	226,157	148,381	65.6	*a* 2,332	*b* 2,110	4,442	*c* 3,365,042	$14.87	$2.56
Queensland	1897	85,229	59,748	70.1	*d* 825	*e* 1,000	1,825	1,035,742	12.15	2.44
South Australia	1897	61,643	41,560	67.45	*f* 404	*g* 797	1,201	657,920	10.67	1.84
Victoria	1897	210,951	140,463	69.5	*h* 1,802	*i* 2,815	4,617	*k* 2,915,690	13.82	2.47
West Australia	1897	12,262	8,976	73	*l* 142	*m* 234	367	279,352	22.78	1.77

a Includes 299 pupils.
b Includes 660 pupil teachers and 67 industrial teachers.
c Includes for sites, buildings, etc., $412,659.
d Includes 165 pupil teachers.
e Includes 281 pupil teachers.
f Includes 18 pupil teachers and 8 monitors.
g Includes 128 pupil teachers and 140 monitors.
h Includes 372 pupil teachers and 72 monitors.
i Includes 175 pupil teachers and 403 sewing mistresses.
k Includes for permanent improvements, $63,674.50.
l Includes 5 pupil teachers and 5 monitors.
m Includes 44 pupil teachers, 22 monitors, 43 sewing mistresses.

Comparative view of school enrollment, 1890–1897.

	Enrollment.				Average attendance.			
	1890.		1897.		1890.		1897.	
	Number.	Per cent of population.	Number.	Per cent of population.	Number.	Per cent of enrollment.	Number.	Per cent of enrollment.
New South Wales	195,241	17.24	226,157	17.24	116,665	59.75	148,381	65.6
Queensland	72,375	18.38	85,229	18.02	40,836	56.5	59,748	70.1
South Australia	44,804	13.98	61,643	17.27	27,552	61.49	41,560	67.4
Victoria	204,497	17.5	210,951	17.9	133,768	65.4	140,463	66.49
West Australia	5,014	10.07	12,262	7.76	3,818	76.14	8,976	73

Tabular view of private schools, universities, and colleges.

Province.	Private schools.		Teachers.	Universities.		Affiliated schools or colleges.
	Number.	Enrollment.	Number.	Number.	Students.	Number.
New South Wales	893	55,000	3,057	*a* 1	454	.....
Queensland	175	10,570	553	.....	.....	.....
South Australia	232	11,458	.....	1	.....	.....
Victoria	1,157	63,270	3,084	1	*b* 129	3

a Also three theological colleges and one college for women.
b Also 668 students attending lectures. Three colleges or schools are affiliated.

THE SYSTEMS OF PUBLIC EDUCATION.

Control of the systems.—The control of education in each of the colonies is vested in a minister appointed for this particular interest or combining it with some closely allied interest; thus in New South Wales the minister of education has charge also of industry; in South Australia education and agriculture are combined. To the chief officer is consigned not only the general administration of the system but also its local direction. He decides as to the establishment of school districts and schools and controls the school funds and properties. In Victoria and New South Wales appointments of teachers and inspectors emanate from a civil service board; in the other colonies they are made by the minister.

Local boards of advice are constituted by election (in Queensland appointed by the Governor), and their representatives carry great weight in respect to the school affairs of their several districts, but the authority remains in every case with the minister.

Sources of support.—In all the colonies the schools are supported by appropriations from the public treasury; instruction is gratuitous excepting in New South Wales, where a weekly fee is required of 3d. per child, but not to exceed 1s. in all for the children of one family. Power is given, however, to the minister or the local board to remit the fees in cases where the parents are unable to bear the charge.

Completeness of school provision.—The classes of schools recognized in the several laws give evidence of the widely different conditions

under which the schools of different districts are maintained and also the efforts to adjust the school provision to these varying conditions.

The typical school is called simply the public or State school. It must maintain a certain average enrollment and must be kept in session the full time. There are also provisional schools, that is, schools which may be kept open for the full time annually, but whose average enrollment is below the standard, and half-time schools in districts where the number of children is too small to justify the expense of a full-time school. In such cases a teacher is appointed for two or more districts, and holds the school in each on alternate days or for a half session each day, according to the distance to be traveled. House-to-house schools have also been recognized as a temporary expedient. The plan of conveying children at public expense from isolated districts to a central school has been recently adopted and is gradually superseding that of special and half-time schools. In Victoria this plan is extensively employed and has virtually eliminated the half-time schools. Night schools, and in some of the colonies infant schools, complete the public provision for popular education.

Compulsory attendance.—Attendance upon school is compulsory for all children of legal school age (this varies in the several colonies, as shown in the detailed statements) unless they are educated privately or exempt by law.

Secular character of the schools.—In Victoria and Queensland the public schools are strictly secular; in South Australia unsectarian religious instruction is allowed; in New South Wales and West Australia provision is made for religious instruction in the schools at an hour when children may be withdrawn if their parents object to their presence.

Historic stages.—In their development up to the present state the systems of education in these colonies have passed through the same phases as that of England, but they have more easily thrown off the restraints of the earlier stage. The first attempts to establish schools were made by religious denominations and the first public effort in this direction was in the form of appropriations to the managers of such schools. New South Wales, whose history as a colony begins with a penal settlement in 1788, had increased its white population to 6,000 by 1800. For fifty years the Government did nothing in respect to popular education. In 1834, the year after the English Parliament made its first appropriation for elementary schools, the government of New South Wales allowed a grant for the same purpose. The money was to be distributed to the heads of the religious bodies in the proportion of the amounts they were expending for education. In 1839 a grant was made to provide undenominational schools for those who preferred them. The first school law, passed in 1848, made equal provision for State and denominational schools and constituted separate boards of control for each. The school law of 1866 abolished the dual control, placing all the schools under a single board called the council of education.

It was not until 1880 that State aid to denominational schools was discontinued. The education law of that year constituted the system as it is now operating, created a minister of education, and gave him full authority in respect to the schools. In the colonies that have been formed from the original area of New South Wales, Victoria (1851), Queensland (1854), there has been a similar transition from denominational to State schools.

In Victoria a State system was established as early as 1873. The present law, which created a ministry of education, was passed in 1890. In Queensland the dual system of national and denominational schools continued until 1875, when the present law was passed. This law created a department of public instruction, to be controlled by one of the Crown ministers, and provided that State aid to denominational schools should not continue after December 31, 1880. Since that date parochial schools, excepting those belonging to the Roman Catholic Church, have ceased to exist.

South Australia was declared a colony in 1836, and in 1847 the first school law was passed. It was followed by the law of 1851, which laid the foundation of a State system by grants-in-aid for the erection of school buildings and for the salaries of teachers. The law of 1875 organized a secular compulsory school system to be controlled by a responsible minister of education. The amending act of 1878 extended the authority of the minister, and that of 1891 abolished fees in all State schools.

The settlement of West Australia began in 1829, but its growth was very slow until 1850, at which date the colony numbered about 6,000 inhabitants. The census of 1859 showed great increase, the population having risen to 14,837. The earliest schools, as in the other colonies, were established by the churches, and the school law passed in 1871 provided that both government and denominational schools should receive public grants upon specified conditions. The amending law of 1893 vested the control of the system in a minister; that of 1894 made school attendance compulsory upon all children, unless they receive efficient instruction at home or live more than 3 miles distant from a school; the amending law of 1895 provided for the discontinuance of grants to denominational schools after the 1st day of January, 1896.

PARTICULARS FROM CURRENT REPORTS.

Considering each colony separately, the following details from the latest official reports, covering the year 1897, are of interest.

NEW SOUTH WALES.

School attendance.—In addition to the enrollment in public elementary schools (226,157), there were 1,558 pupils in attendance at other state schools, classified as follows:

The Sydney Grammar School	532
The industrial schools	737
The school for the deaf and dumb and the blind	118
The reformatory schools	171
Total	1,558

From the returns of private schools it is estimated that they enrolled 55,000 pupils. Thus of 347,044 children in the colony between the ages of 4 and 15 years 227,713 attended State schools and 55,000 attended private schools, while the remainder, 64,331, received instruction at home, had completed their education, or were untaught.

It appears further that 61,727 children between the ages of 6 and 14 years failed to complete the minimum attendance of seventy days required by law during the first half of the year, but in 738 cases only was the law set in motion. The parents of 3,554 were cautioned, while in the remaining cases satisfactory explanations were furnished or the circumstances were not such as to render any action necessary. In a large number of instances pupils had obtained certificates by examination, and were thus legally exempt.

For the second half year the number between the compulsory ages who did not attend seventy days was 45,560. In 856 cases legal action was taken and cautions were sent to parents in 2,543 cases.

The enrollment in public schools includes 577 pupils in the five public high schools, whose course is preparatory to the university. The expenditure for these schools was $31,091, of which the state provided $21,090, the balance being met by fees. The state provides a certain number of scholarship funds to be competed for by students who have completed the course of the high schools. These are available in secondary schools of higher grade or in the university.

The progress in technical education in the colony is summarized as follows:

Technical education in public schools—drawing.—One hundred and fifty-two thousand four hundred and eighty pupils were examined in this subject, of whom 124,208, or 81 per cent, satisfied the standard. In 203 departments in the metropolitan and submetropolitan districts visited by the superintendent of drawing 45,746 pupils were present at examination; 80.4 per cent of these were found to reach the standard.

Manual training.—Eight workshops were in existence in 1897, which afforded instruction to the pupils of 24 schools. The total enrollment of these classes, including students in training for teachers' places, was 634. Of these 415 presented themselves for examination and 375 passed.

Cookery.—The number of schools in operation in 1897 was 12, with an enrollment of 880 pupils. Of this number 773 presented themselves for examination, of whom 748, or 97 per cent, were successful.

Needlework.—Fifty-five thousand eight hundred and ninety-one girls were examined in needlework, of whom 49,926, or 89 per cent, passed the standard. In the Metropolitan district 99 schools, representing 14,539 children, were examined by the directress, who reported satisfactory progress.

Scientific and technical education.—A comparative statement of the total enrollment of students of the colleges and branch schools for the years 1896 and 1897 is given below:

	1896.	1897.
Sydney Technical College	3,302	3,678
Suburban classes	578	726
County classes	2,285	2,342
Classes connected with public schools	954	912
Total	7,119	7,658

Deducting from this enrollment all cases where students were members of more than one class, the number of individuals attending the classes was 5,848, as against 5,396 for last year. The average weekly attendance was 3,983, giving an increase over 1896 of 265.

The students examined at the end of the year numbered 2,702, of whom 1,923, or 71.1 per cent, were successful; in 1896 there were 2,576 examined, 1,822 of whom, or 70.7 per cent, passed. At the technological examinations of "The City and Guild of London Institute," held in April last, 35 students of the technical colleges were examined, of whom 28 passed. Two candidates in plumbing and one in telegraphy obtained first-class honors, whilst two in plumbing, one in telegraphy, and one in electric lighting obtained second-class honors. Seven of the candidates also passed the practical examination in plumbers' work.

The teaching staff comprises 85 persons, viz, 13 lecturers in charge of departments, 5 resident masters in charge of branch schools, 36 teachers, 12 assistant teachers, and 19 teachers in charge of classes remunerated by pupils' fees only. As in former years, lectures upon technical subjects have been delivered by the officers of the department in the various centers of population.

The new buildings at Bathurst are rapidly approaching completion, and it is expected that the college will be ready for the reception of students very shortly.

The superintendent states that much original and important economic work was done during the year in connection with the technological museum, which, it is anticipated, will lead to the opening up of new commercial avenues by the utilization of indigenous vegetable products.

Great interest continues to be taken in the country museums, as is shown by the large number of specimens received locally. In May last a new museum at Albury was formally opened.

The Technological Museum was visited by 224,984 persons. The total expenditure on technical education during 1897 amounted to $19,435.

QUEENSLAND.

School attendance.—With respect to the enforcement of the compulsory attendance law, the report states that 1,637 children between the ages of 6 and 15 and living within reach of a school are not educated up to the standard required by the law and are not attending any school. This is 66 less than the number reported in 1896.

The number of children reported as not attending school the minimum number of days required by the education act—that is to say, 60 in the half year—was 9,422 in the half year ending June, and 7,968 in the half year ending December—a decrease of 388 defaulters in the first half year and of 652 in the second half year. Besides the enrollment in public schools (85,229) there were 1,616 children supported by the State in orphanages. The State makes some provision by scholarship funds for the continued education in secondary schools of pupils from the public schools. The number holding such scholarships in 1897 was 257.

SOUTH AUSTRALIA.

School attendance.—Effects of compulsion. From the official report it appears that of the children subject to the compulsory law (ages between 7 and 13), 86.5 per cent attended in 1897 the thirty-five days required by law, 11.62 per cent were excused for satisfactory reasons, and 1.88 per cent were cases of neglect.

State scholarships.—The Government makes a limited provision for the continued education of elementary pupils in secondary schools and the university by means of scholarship funds open to competition. For the years reviewed there were 19 holders of State scholarships in the advanced school for girls and 9 pursuing university courses.

Schools of agriculture and of domestic industry.—The establishment of a secondary school of agriculture is an interesting fact in the year's record.

Arrangements are being made for other schools of this class, and in course of time a complete system of practical secondary education for boys will be formed on these lines throughout the colony. A housekeeping school for girls of secondary school age has also been organized in connection with one of the city schools, which will serve as a model for other similar institutions.

General advance is noted in drawing, manual training, and agricultural teaching.

Woman inspector.—The experiment was made during the year of appointing a woman on the staff of inspectors.

VICTORIA.

School attendance.—In addition to the attendance upon public day schools, as shown in the tables, the returns of private schools give an enrollment of 47,651 pupils. There were also 293 children in the reformatories and schools for neglected children.

It appears that of the total number of children of the compulsory age (6–13), 60.4 per cent fulfilled the requirements by attendance upon public or private schools, and 9.7 per cent were exempt. Of the remainder, one-fourth were dealt with according to the law, and as to the balance, no specific information was obtained.

Provision for conveying children to central schools.—With respect to the plan of conveying children from remote districts to central schools, the report says:

Under the system of conveyance 253 schools have been closed up to the 30th of June last. There are besides several instances where, instead of establishing new schools, the educational requirements have been met by conveyance.

In the case of closed schools the saving, after allowing for those schools which would of necessity have been closed in consequence of paucity of attendance, after deducting the cost of conveyance, amounts to about $74,000.

The attendance of the children whom this system provides for continues to be characterized by remarkable regularity, and the system has become so popular that applications are constantly being received to be brought under its provisions.

The payments for conveyance are restricted as hitherto to (*a*) cases where schools are closed through low average attendance and (*b*) applications where the number of children would warrant the department in establishing a school. Under the plan of combining schools, no fewer than 81 schools have been made adjuncts of more central and more important schools in the neighborhood.

The actual saving realized in connection with the schools that have thus been dealt with amounted for the year to $185,000.

Industrial and technical education.—Movements are in progress for the introduction of cookery into the schools for girls and for courses of instruction in the higher classes of the elementary schools for pupils who propose to enter mining schools or agricultural colleges. Grants in aid were continued during the past year to the 18 schools of mines and technical schools. The total expenditure for these schools amounted to $60,000.

WESTERN AUSTRALIA.

Efforts to improve school attendance—the compulsory law.—The official report of Western Australia says with respect to compulsion that an attempt has been made during the year to enforce the law more fairly and uniformly throughout the settled parts of the colony, and in the

latter the staff has been strengthened, and consequently more inspection work has been carried out. In a young country there must be many small schools in distant and expensive places, and the fact that these are necessarily very costly must always be remembered. The most expensive of all the schools are the half-time schools, where the cost per head of average attendance is $30. The next are the little provisional schools, where the cost is $26.50; and then come the goldfields and other special schools, where the cost is $20.36. In the ordinary State schools the average cost is only $16.08. As a set-off against the increased cost of these smaller schools, it is satisfactory to note that the attendance in the half-time and provisional schools is better than in the State schools and special schools, being 89 per cent in the half-time schools and 82 per cent in the provisional schools, compared with 74 per cent in the State schools and 68 per cent in the special schools. The low attendance in special schools—which are, as shown above, costly to the department—would seem to point to the necessity of compulsory officers on the gold fields so that the department may, by a little further expenditure, get more value for its money.

Defects in the law.—The Inspector-General points out the following defects in the compulsory law: (*a*) There is no provision for scheduling or taking a census frequently of children of school age, so that with a very fluctuating population many children do not come under the compulsory officer's notice at all. (*b*) There is no right of entry into private schools to see if children are attending and no return of attendance furnished by them. This enables parents to withdraw their children from Government schools and nominally enroll them in private schools with the intention of breaking the law. Returns of attendance ought to be furnished, and the Government should also have the right of inspecting all private schools to see that they are efficient and sanitary. (*c*) There are no provisions for preventing juvenile labor. Factories are springing up and there should at once be legislation preventing the employment of children under 14. (*d*) Prosecutions are beset with difficulties: (1) Some magistrates insist on the teacher being present to prove attendances—a most unnecessary requirement. (2) The officers have to wait for the quarterly returns before prosecuting, though they may know the parent is defying the law. With some parents the only course is to prosecute repeatedly until the child is regularly sent. (3) No doctor's certificate or even parent's written statement of illness to the teacher is required. A parent may, therefore, send word that the child is ill and plead this message as a reason for absence to the magistrate when there has been no foundation in fact for the excuse. A bill embodying his suggestions has been presented to Parliament.

The teaching force.—With respect to the teaching service, the report says further: Larger attendances in the schools, bringing with them larger classes under individual teachers, should eventually effect a considerable economy; but with this enlargement of classes arises the

necessity to insist on higher qualifications for the teaching staff. It is needful, therefore, to offer more adequate salaries. In the present regulations the salaries range for head teachers from $450 to $1,400 male and from $300 to $1,120 female (though in the central boys' and girls' schools in Perth this amount is exceeded, as the circumstances are exceptional). In provisional schools lower salaries may be paid. The salaries of assistants range from $450 to $875 male and $300 to $700 female. There are many more in the lower grades than in the higher, and the average salary of adult teachers is $575. It will be seen that in a country where the cost of living is so high the salary is, in many cases, too small. The difficulty that this department has in preparing its estimates for the coming year is evidenced by this item alone; for, supposing, as last year, the children increased by 3,000, allowing 50 children to a teacher (which is the outside number that can be given to an individual), at the average salary named, an increase of $35,000 will be required upon the estimates for salaries alone. It is, however, necessary, if a sound education is to be given that the best men and women that can be found should be chosen. As has been said, good education is a wise national investment. The State must therefore be prepared to see that the quality of the education given is as high as possible. It has become essential that there should be greater facilities given to the teachers for self-improvement, and the training college, so long promised, should be established as soon as possible. Only in this way will it be possible for the young western Australians who are growing up, to qualify themselves for taking part in school teaching, while those who have been in the service for a long time need further opportunities for learning the latest methods.

Teachers' association.—The teachers' association, formed early in the year, is welcomed by the Department as a very valuable auxiliary, and that body should help, by the practical experience of its members, to greatly improve the general efficiency of the teaching staff. In this work the inspectors must also take a large part; and to insure a greater continuity in their work, by enabling a better comparison of one year's results with another, the colony has now been divided into four districts, for which the four inspectors will be responsible.

EDUCATION IN NEW ZEALAND.

Population (census 1896) 754,016, or, excluding 39,854 natives, 714,162.

Public schools and school attendance.—Under the school law, or, as the title reads, "Education act" of 1877, the public schools of New Zealand are free and secular. The compulsory clauses of this law were repealed by the school attendance law of 1894, which made the requirements as to school attendance more stringent, extended them to the children of the aboriginal Maoris, and empowered the education boards to appoint truant officers for the more complete enforcement of the law.

The law also authorizes the issuing of good attendance certificates.

These certificates are of two classes—the higest is issued to all pupils of the public schools who for a period of twelve months are present at every session of the school in their respective districts; the lower class certificate is issued to all pupils who for a like period are not absent more than five times.

The official report for 1898 shows that for the year ending December 31, 1897, there were in operation 1,585 public schools, an increase of 53 over the preceding year. It appears that the increase in the number of schools is more rapid than in the number of pupils.

The average number of pupils to a school was less than 70, and the number of schools with less than 25 pupils was increased during the year by 55, or more than the total increase in the number of schools.

The enrollment in these schools for the year was 132,197, an increase of 1,160 over 1896, and comprising 18.5 per cent of the white population. The average attendance was for boys, 57,504; for girls, 53,019; total, 110,993, an increase of 2,017 over the preceding year. This average was 83.9 per cent of the enrollment. These numbers indicate a high degree of success in enforcing school attendance. The teaching staff numbered 3,628, of whom 1,456 were men and 2,172 women. There were also 183 sewing mistresses employed.

The enrollment above given includes 2,260 Maori children in attendance upon the ordinary schools. In addition there were 74 village schools for natives, attended by 2,864 pupils and maintaining an average attendance of 77½ per cent, and in the four boarding schools for Maoris 263 pupils, of whom 73 were Government pupils maintained at public expense.

The expenditure for public education amounted to $2,400,182.

Administration of the system.—The control of the system of education is centralized in one of the Crown ministers who is designated by the governor of the colony to the special duties of the education department. The governor also appoints a secretary for the department and school inspectors.

The colony is divided into thirteen educational districts, in each of which an education board of nine members is constituted.

These boards have the power to form school districts in their respective divisions, to establish and maintain schools, appoint and remove teachers and school officers, and to receive and disburse the school income of their respective areas.

In each local school district there is a school committee of five to nine persons elected by the householders. These local committees elect the members of the district boards.

Thus while the unit of local control is the area included under a district board, the local school committees have great power, as they virtually determine the composition of the boards. The number of school districts is increased as conditions require. In 1893 they numbered 1,075 and the local committees included 7,525 members; thus of the male

population above 25 years of age one in every twenty was a member of a school committee. Objection is made to this system because a committee representing a very small or sparsely settled school district has just the same voice in the election as a committee representing a larger district. The following criticism of the system by the president of the Otago Educational Institute makes this weakness very clear. He says:

To elect the 117 members of our 13 education boards is, perhaps, the most important duty these local bodies have to discharge. Each committee, representing generally one school, has the right to give one vote to each or any of three candidates for the positions vacated by three members of the boards retiring annually. At once this places an enormous power in the hands of school committees. When it is remembered that of 1,302 schools in New Zealand no fewer than 840 have an average attendance of under 50 pupils, it will readily be understood that the choice of men to serve as members of our education boards may really be in the hands of a very small section of the community. To illustrate my meaning, I may state that of 202 schools in Otago 122 have an average attendance of under 50 pupils, 57 under 25, 39 under 20, and 21 under 15. Taking the 21 smallest schools, I find that they average 11.6 pupils each. Now, any four such schools with a total average attendance of 46 pupils possess the same voting power in electing members to our education boards as, say, George street, Albany street, Kaikorai, and High street schools with a total average attendance of 2,696, or nearly 60 times as many children. This is manifestly unfair, and has led to such abuses, especially in the smaller education districts, as establishing schools where there is no absolute necessity for them, pulling down old schools to be replaced by new ones, when the old ones might last for years, making unnecessary additions to schools and residences, and other extravagances. As three members of each board retire annually, and they are at the mercy of the committees, they dare not, if they wish to be reelected, move in the direction of any reform, if such reform be not agreeable to the committees of these very small schools. This is not a desirable state of things, and any plan to remedy this defect in our act should be welcomed.

The local committees have the management of educational matters within the school district, subject to the general supervision and control of the board and to inspection by a Government inspector. The law provides that—

Every committee may, with the sanction of the board of the district within which the school district is, previously obtained, provide, by building or otherwise, schoolhouses, and may improve, enlarge, and fit up any such schoolhouses, and supply apparatus and everything necessary for the efficiency of the schools provided by them, and such proportion of the cost of providing, fitting up, improving, and keeping in repair such schoolhouses as may be prescribed by such board shall be defrayed by the committee out of the school fund, and the remainder (if any) of such cost shall be defrayed by the board of the district within which the school is situated, by and out of any moneys at their disposal.

The committee may from time to time, with the approval of the board, appoint teachers of sewing for any school under its control.

On the application of the committee, the board of the district may select, purchase, lease, or acquire a suitable site or sites for a schoolhouse, and the board, if it shall so think fit, shall require that the whole or any portion of the cost of such purchase shall be defrayed by the school committee out of the school fund.

The committee, with the approval of the board, may establish savings banks for the use of children attending the school.

Public school funds.—The funds available for the public schools consist of the board fund and the school fund. The former comprises (1) grants from the consolidated fund, (2) rents and profits derived from property or endowments vested in the board, (3) special endowments or grants for particular purposes, (4) special fees for higher education, (5) any other moneys which the board may receive from donations, subscriptions, or otherwise.

The school fund, which is at the disposal of the school committees, consists of:

(1) Moneys granted out of the board fund.

(2) Donations, subscriptions, and all other moneys which may be granted to the committee for the purposes of this act.

The two funds are paid into such bank as the district board appoints to an account called "The education board account," and no moneys are drawn out of the bank except by authority of the board. The moneys are paid out by check, signed by the treasurer and by such other members of the board as that body may authorize.

The accounts of the boards therefore comprise the whole expenditure for the schools.

The expenditure for 1897 will be found tabulated below.

Studies and classification of pupils.—The subjects of instruction in the public schools, as required by the law, are:

Reading, writing, arithmetic, English grammar and composition, geography, history, elementary science and drawing, object lessons, vocal music, and (in the case of girls) sewing and needlework and the principles of domestic economy. Provision must also be made for the instruction in military drill of all boys in the schools.

The course is arranged for six grades (standards); the number of pupils in each grade in 1897 was as follows:

Standards.	Classification of pupils by grades.		
	Boys.	Girls.	Total.
Preparatory class	17,361	15,134	32,495
Class for standard—			
I	8,437	7,818	16,255
II	8,786	8,196	16,982
III	9,793	9,108	18,904
IV	9,514	9,124	18,638
V	7,185	7,224	14,409
VI	4,934	4,667	9,601
Passed standard VI	2,446	2,467	4,913
Total	68,459	63,738	132,197

By comparison with the corresponding statistics for the past four years it appears that in all grades above the third the proportional number of pupils is constantly increasing; that in the classes preparing for grades III and IV the change in this respect is intermittent, and in all the lower classes the proportional number of pupils is diminishing. This is regarded as quite satisfactory, assuming, as may be fairly assumed, that the standard of examination is maintained if not advanced.

Teachers' qualifications and salaries.—The law requires that all teachers, saving pupil teachers (numbering 1,076, or 29½ per cent of the entire force in 1897), shall be certificated. At the same time recognizing the peculiar difficulty of enforcing this requirement in the more sparsely settled districts, it allows some latitude to the education boards in this matter. The number of teachers holding rank in 1897 which properly requires a certificate was 2,549, and of these 2,244, or 88 per cent, actually held certificates; of the remainder 2 had passed the required examinations, but had not served the full probationary period.

The average salary, including in the estimate all classes of teachers, was £94 6s. 8d. ($459).

The following table shows the attendance on the public schools at the beginning and close of the decades 1877–1887, 1887–1897:

Year.	Number of pupils.	Average attendance.		Ratio of average attendance to enrollment.
		Fourth quarter.	Whole year.	
1877	55,688	.....	.....	.....
1887	110,919	87,386	85,637	77.0
1897	132,197	110,523	110,993	82.9

The expenditure for 1897 was as follows:

For management by boards	$60,928
For inspection and examination	61,308
For maintenance of schools	1,981,844
For school buildings	239,961
Interest	997
Refunds and advances	1,141
Total	2,346,179

PROVISION FOR SPECIAL CLASSES.

An interesting feature of the public school provision in New Zealand is its extension to the defective classes and to the native Maoris. The following citations from the report show the status of these divisions of the work during the year 1897:

School for deaf-mutes.—The well-known school at Sumner, where even congenital deaf-mutes are taught actually to speak and to understand the vocal speech of others, continues its beneficent operations with little variation and with few incidents fitted to give rise to any comment. Three boys and 5 girls left at the end of 1896, and 4 boys and 3 girls were admitted in 1897. The attendance at the end of the year was 27 boys and 20 girls. The director in his work of instruction has the assistance of 5 teachers. The household arrangements are supervised by a steward and matron. The expenditure for the year was $15,928.

The amount contributed by parents is $755.

Institute for the blind.—The Jubilee Institute for the Blind at Auckland receives some pupils for whose tuition the education department is reponsible. The number of such pupils declined in the year 1897 from 19 to 14. The payments made by the department on their behalf to the institute amounted to $2,242, toward which a sum of $196 was contributed by parents.

Native schools.—The number of native village schools was the same (74) at the end of the year as at the beginning. The number of children on the roll at the end of 1897 was 2,864, greater by only 2 than the corresponding number for the previous year. The mean of the weekly returns of pupils on the roll was 2,955, greater by 81 than at the end of the preceding year, and the strict average attendance was 2,291, showing an increase of 71 in the year. The average daily attendance for the year was equal to 77½ per cent of the roll number for the time being. Four schools were finally closed in 1897, and one was transferred to the care of an education board; four new schools were opened, and one school has reopened after having been closed for some years.

The closing of the schools is due either to the apathy of the natives or to the decline of native population; in one case, to both causes. One native school, recently transferred to the local education board, "had for years contained a preponderating number of European pupils, and the Maori people had long lived in European fashion."

The four boarding schools for Maoris had at the end of the year 236 pupils, of whom 73 were Government scholars. There were 10 boys holding industrial scholarships, apprenticed as follows: Three to farmers, 3 to saddlers, 2 to carpenters, 1 to a blacksmith, and 1 to a printer. Scholarships for $200 a year each were enjoyed by two young men studying, one at University College, Auckland, and the other at Canterbury College, Christ Church.

The following table summarises the statistics of native schools for a period of years:

Provision for the education of natives.

Year.	Village schools.									Boarding schools.	
	Population.	Total number of schools.	Number of new schools opened during the year.	Number of schools discontinued during the year.	Enrollment.	Average attendance.	Teachers.			Number of schools.	Enrollment.
							Men.	Women.	Total.		
1888	.....	67	.....	2	[a] 2,512	2,070	65	[b] 75	140	.....	.....
1891	41,993	72	.....	[c] 4	2,259	1,877	59	[d] 76	135	4	[e] 180
1893	.....	62	5	4	2,220	1,585	51	[f] 55	106	4	197
1896	39,805	74	.....	.....	2,862	2,220	62	[g] 90	152	4	214
1897	.....	74	5	5	2,955	2,291	60	88	148	4	236

[a] 1,412 boys, 1,100 girls.
[b] Includes 41 sewing mistresses.
[c] Two for boys two for girls.
[d] Includes 11 sewing mistresses.
[e] 111 boys, 86 girls.
[f] Includes 16 sewing mistresses.
[g] Includes 14 sewing mistresses.

Industrial schools.—Public provision for the training of vicious, unruly and neglected children is made in both State and private industrial schools.

Great care is taken to avoid an undue commingling of different classes of children in the Government schools, so that, although there are 1,099 nominal inmates of these schools, the number actually resident is only 199—only 18 per cent. The rest are accounted for as follows: Three hundred and eighty-five are boarded out, 85 are living with their friends, 371 are in service, 41 in institutions better suited to their condition, and 18 absent without leave.

The policy of boarding out the children who are for the time wards of the State is extensively employed, and with excellent results. Careful watch is kept over the children thus provided for by trusted agents of the Government. The following table summarizes the principal statistics relative to this class of schools for the years 1896 and 1897:

	Boarded out.				In residence.				At service, etc.				Total.			
	December, 1896.	Increase.	Decrease.	December, 1897.	December, 1896.	Increase.	Decrease.	December, 1897.	1896.	Increase.	Decrease.	1897.	1896.	Increase.	Decrease.	1897.
Government schools:																
Auckland	30	...	....	30	10	1	...	11	41	....	4	37	81	....	3	78
Burnham	176	...	11	165	105	....	5	100	243	21	...	264	524	5	...	529
Caversham	211	...	21	190	76	12	...	88	195	19	...	214	482	10	...	492
Private schools:																
St. Marys, Auckland	.....	...	....	.....	46	16	...	62	20	....	3	17	66	13	...	79
St. Josephs, Wellington	4	...	....	4	66	....	4	62	10	2	...	12	80	....	2	78
St. Marys, Nelson	7	...	...	7	253	5	...	258	66	1	...	67	326	6	...	332
Total	428	...	32	396	556	34	9	581	575	43	7	611	1,559	34	5	1,588

MANUAL TRAINING AND TECHNICAL INSTRUCTION.

With regard to recent measures for fostering manual training in the public schools of New Zealand, the minister states in his report for 1897 that the local education boards have not manifested great activity in the development of that kind of elementary manual training which, under the operation of the act of 1895, is now recognized as being part of the proper educative work of the primary schools and which, while including kindergarten occupations and sloid, is capable of wide development in cardboard work and in the construction of models in wood and metal as illustrations of many subjects of scientific instruction. He adds further:

With respect to another form of manual instruction, a form in which it constitutes, through the handling of tools and materials, a more direct preparation for manual trades, the act of 1895 contemplates a measure of cooperation between the department and the boards, since any serious treatment of the subject from this point of view seems to require a workshop and some expenditure on tools, and to have its proper place outside of the time properly devoted to such mental development and equipment as is generally comprehended under the word "schooling." It has been deemed a great gain to have secured in our time this "schooling" for the children of all classes, and it ought not to be proposed now to encroach upon its hours in the interests of that kind of serious preparation for a trade or a business which naturally begins when school days are over. For manual instruction out of school hours the boards receive subsidies at the same rate as for any classes they may institute outside of the schools for technical training.

The total payments to education boards in respect of manual training and technical classes conducted outside of the regular school hours were $5,999.

SECONDARY SCHOOLS.

The New Zealand school law makes provision for continuing the education of youth beyond the elementary branches, by means of public scholarships to be competed for by the pupils attending any public school, and also of scholarships open to all children of school age under special conditions to be determined from time to time. It is also provided that any board on receiving an application in writing from the committee may, with the express sanction of the minister previously obtained, convert any public school in the district into and establish the same as a district high school.

All the branches of a liberal education, comprising Latin and Greek classics, French and other modern languages, mathematics, and such other branches of science as the advancement of the colony and the increase of the population may from time to time require, may be taught in such school. For such higher education fees shall be paid by the pupils at such rates as shall be fixed by regulations.

The number of such public high schools is not specified. The amount expended from public funds for scholarships was $39,415.

The summarized statistics of 24 secondary schools that receive state aid show an attendance of 2,709 pupils, of whom 166, or 6 per cent, were under 12 years of age. The current income of these schools for 1897 from school fees, exclusive of fees for boarders, was $118,850; from rents and interest, $122,310; from endowments under public administration, $11,515; total, $252,875. The amount paid out for salaries, estimated at the rates prevailing at the end of the year, was $157,145.

SUPERIOR SCHOOLS.

The oversight of the minister of instruction extends also to the University of New Zealand, which is an examining body empowered to confer degrees. Undergraduates pursue their studies generally at one or the other of the following affiliated institutions: The Auckland University College, the Canterbury College, and the University of Otago, each of which has a staff of professors and lecturers.

The chancellor of the university reports for 1897 that the number of graduates admitted on examination now amounts to 603. The number of degrees conferred have been as follows: Number who have received the degree of M. A., 162; B. A., 343; B. Sc., 40; LL. B., 47; M. B., 23; D. Sc., 3; LL. D., 5; M. D., 4.

The number of degrees conferred after the examination of 1897 was 66; B. A., 48; B. Sc., 4; LL. B., 4; M. B., 5; M. A., 5. The number of candidates at the entrance examination for 1897 was 730. Three hundred and sixteen sat at examinations for degrees, and 152 for professional qualifications not academical, making a total of 1,198.

The income accrued under the "University endowment act, 1868," and applicable to purposes of higher education yet to be determined by Parliament, amounted, at the end of 1897, to $19,290.

Superior scientific and technical instruction is fostered in the university colleges and in the higher secondary schools by examinations held in the colony by committees of the English science and art department and the city and guilds of London Institute, the expenses of these institutions being met by the colonial government. Mining schools are conducted under the auspices of the department of mines, and the department of agriculture fosters technical instruction in connection with public agricultural experiment stations, fruit farms, and dairy schools.

AUXILIARY AGENCIES.

The public school system is supplemented by private and denominational schools, of which there were 283 in 1896, attended by 13,947 pupils. The Sunday schools of the colony were attended the same year by 116,045 pupils.

The following statistics show the number of public libraries and other literary and scientific institutions in the colony:

PUBLIC LIBRARIES AND OTHER LITERARY AND SCIENTIFIC INSTITUTIONS.

Although the number of these institutions only increased from 298 to 304 between the years 1891 and 1896, according to the census returns, it is found that the membership increased from 14,489 to 17,638, or at the rate of 21.73 per cent. There was also a large increase of books (23.83 per cent), which numbered 330,770 in 1891 and 409,604 in 1896. In considering these facts it must be borne in mind that the population increased 12.24 per cent in the quinquennium.

STATISTICS OF ILLITERACY.

As to the outcome of these various educational agencies, we may consider the statistics of illiteracy as presented in the census of 1896. The following tabulation shows the conditions at each census period, expressed in percentages:

Year.	Read and write, per cent.			Read only, per cent.			Can not read, per cent.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1878	72.11	66.33	69.52	5.91	7.80	6.76	21.98	25.87	23.72
1881	73.31	68.94	71.32	5.01	6.39	5.63	21.68	24.67	23.05
1886	75.40	72.41	74.01	4.36	5.31	4.80	20.24	22.28	21.19
1891	77.97	76.48	77.27	3.74	4.24	3.97	18.29	19.28	18.76
1896	81.06	80.09	80.60	2.71	3.08	2.89	16.23	16.83	16.51

The statistician, commenting on this showing, says:

Besides the improvement in the degree of education as here indicated, and which is observed in respect of both men and women, it is further noticeable that, whereas the difference in the percentage able to read and write is very considerably in favor of the male sex for the year 1878, the proportions approximate more closely at each successive census year, until in 1896 there are found to have been 80.09 per cent of the female sex who could read and write, against 81.06 of males. * * *

In considering the proportions of the population at different age periods the improvement in education is even more clearly proved. It is found that in 1896, of persons at the age period 10–15 years, 98.73 per cent were able to read and write, while 0.65 per cent could merely read and 0.62 per cent were unable to read. The proportion who could not read increased slowly with each succeeding quinquennial period of age until at 50–55 years it stood at 4.04 per cent. At 75–80 years the proportion was 7.05 and at 80 and upward it advanced to 8.07. Similarly the proportion of persons who could read only increased from 0.65 at 10–15 years to 3.66 at the period 50–55 years and again to 9.74 at 80 and upward. The better education of the people at the earlier ages is thus exhibited.

Further evidences of improved education will be found in the portion of this work relating to marriages, where it is shown that the proportion of persons in every 1,000 married who signed by mark has fallen very greatly since 1881. The figures for the sexes in the year 1881 were 32.04 males and 57.94 females, as against 6.19 males and 7.02 females in 1896.

TASMANIA.

The number of public schools in Tasmania in 1897 was 282, an increase of 12 over the previous year and of 62 in the decade 1887–1897. These were attended by 21,763 pupils, an increase of 937, or 4.3 per cent, in the decade. The increase in average daily attendance has more than kept pace with that of enrollment, being 4.4 per cent from 1896 to 1897, and 37.7 per cent in the decade. These figures show the excellent results of the measures for promoting school attendance. Two inspectors are appointed for the examination of the schools and two truant officers to keep watch over the children of school age who are absent from school. There are also special visitors who visit the schools in a semi-official manner, but whose influence is beneficial in maintaining general interest in the schools. The directors of education, whose duties are chiefly administrative, also from time to time visit individual schools.

The teaching force includes head and assistant teachers. In 1897 the former numbered 244. Of these 170 were men, with average salaries ranging from £55 17s. 3d. ($271.82) to £412 18s. 4d. ($2,006.77), and 74 were women, with average salaries ranging from £36 19s. 10d. ($179.77) to £106 16s. 11d. ($519.26).

The expenditure by the Government in 1897 was £35,569 18s. 10d., equivalent to $10.30 per capita of average enrollment. Fees to the amount of £9,934 2s. 11d. ($48,279.94) were collected in the schools and turned over to the public treasury.

The director of education reports returns from 187 private schools, having a gross enrollment of 8,691 pupils. The need of public provision for secondary education is urged in the report. On this point one of the inspectors says:

What is wanted to secure the full fruition of our elementary school work is some State provision in the way of secondary education, not on mediæval, but on modern lines. There are numbers of parents able to support their children for two or three years after the completion of their State-school course who would rejoice to secure for them at a small fee the opportunity of obtaining advanced instruction. Nor would I disregard the case of those boys and girls who are under the necessity of

"going out to work" at an early age. For such as these similar teaching might be provided in night classes. The oracular dictum one sometimes hears that "the State has fulfilled its duty when it has provided efficient primary schools" can not be regarded as a tenable objection to the plea for higher education. State intervention at all in the matter of education rests simply upon a strong ground of expediency, and this being so, expediency alone can determine how far State education should extend; at all events it is quite arbitrary to draw a line at the elementary school system and say, "Thus far and no farther." But in fact the justification for the State provision of higher education is already conceded virtually by the public endowment of a university, only we are at present in the position of an eccentric person who should spend much money in making a ladder, but who refused to have any middle rungs put into it. Our educational ladder is similarly defective; it has lower rungs, and everyone may mount them; and it has its upper rungs, but they are only of use to those who have their own means and appliances for reaching them. I share the hope expressed by the director of education in his report for 1896, that when funds are available a comprehensive scheme of secondary education of the character he has indicated will be adopted.

The following table summarizes the statistics for 1888 and 1897:

Year.	Number of schools.	Scholars.				Expenditure.		Income from fees.
		Enrollment.	Average monthly enrollment.	Average number in daily attendance.	Percentage of average daily attendance on average enrollment.	Total.	Per capita of average attendance.	
1888	220	17,125	12,002	8,730	72.74	$158,671.03	$13.21	$43,644.50
1897	282	21,763	16,634	12,024	72.28	172,869.90	10.38	43,279.92

CHAPTER III.

EDUCATION IN BELGIUM.

[For previous articles see System of Public Education in Belgium, Report for 1892–93, vol. 1, pp. 157–201. Public Education in Belgium, Report for 1894–95, vol. 1, pp. 313–319.]

Belgium: Constitutional monarchy.—Area, 11,373 square miles; population (census of 1890), 6,069,321.—The executive and legislative powers vested in hereditary King, Senate, and Chamber of Representatives. Senators of two classes: First class, in number equal to half the number of representatives, elected directly by the voters; second class, elected by provincial councils, their number being proportioned to the population of the respective provinces. Representatives elected directly by the voters, number proportioned to the population, but may not exceed 1 for every 40,000 inhabitants.

The divisions of the Kingdom for local government are provinces (9) and communes (2,596. census of 1890), both of which enjoy a large measure of autonomy. The affairs of the former are administered by a governor appointed by the King, a provincial council (elected), and a permanent deputation, consisting of the governor and six members of the council chosen by that body.

Three distinct authorities participate also in the administration of the commune: an elected council, a burgomaster appointed by the King from the members of the council, and a body of aldermen (collège échevinal), consisting of the burgomaster and from two to five members of the council chosen by that body. The council, which represents the people directly, is the principal source of authority in communal affairs (law regulating provincial and communal organization, March 30, 1836, and modifying laws, 1838, 1842, 1848, 1860, 1865; also Les ministres dans les principaux pays d'Europe et d'Amérique, par L. Dupriez, tome 1, pp. 262–266).

The provinces are also divided into arrondissements and these again into cantons. These divisions are intended to facilitate the control of the central authority, and are not strictly speaking divisions for local government.

In three provinces lying along the border of France—i. e., Hainault, Luxembourg, and Namur, and also in Liège, a central province—French or Walloon is the prevailing language. In Antwerp, Brabant, East and West Flanders, and Limbourg, the Flemish or Dutch.

The population of Belgium, as shown by the census of 1890, was 6,069,321, comprised in an area of 11,373 square miles. Further analysis gives 2,894,694 as the population of communes of 5,000 inhabitants or more and 3,174,627 for communes of less than 5,000 inhabitants.

The census, by sex, gives men, 3,026,954; women, 3,042,367. It appears, moreover, that about 36 per cent of the males (1,079,035) and 40 cent of the females (1,204,647), or 38 per cent of the entire population, are unable to read and write. In 1866 illiterates formed 53 per cent and in 1880 42 per cent of the entire population.

Belgium is preeminently a Catholic country. Protestants number only about 10,000 and Jews 4,000. The census of 1890 gives 30,098—men 4,775, women 25,323—members of religious orders in the Kingdom, of whom 24,585 are native Belgians.

The executive affairs of the Government are administered through seven departments. The educational interests are intrusted to the minister of the interior and of public instruction.[1]

TOPICAL OUTLINE.—Brief conspectus of the system of public education—Summarized statistics—Comparative view of school population and school attendance 1846–1890—Effects of successive school laws—Expenditure on primary schools—City of Brussels: Inquiry into the living conditions of children attending the public schools. Secondary schools: Recent changes in curriculum—Technical and industrial schools of Belgium—The Antwerp Congress on commercial education.

BRIEF CONSPECTUS OF THE EDUCATIONAL SYSTEM.

The system of public education in Belgium has changed but little in general form since its organization under the law of 1842.

It comprises three departments, primary, secondary, and superior, under the direction of the minister of the interior, who is also minister of public instruction.

[1] The present incumbent is M. Schollaert.

The principal officers of education below the minister are two general directors, one in charge of the primary department the other of the secondary and superior departments.

Institutions of all grades receive State appropriations, which cover about 38 per cent of the cost of primary schools, about 65 per cent of that of secondary schools, and nearly the entire cost of the State universities. The balance of expenditure is borne by the provinces and communes or by private managers (usually clerical), private schools being also subsidized by the State.

All schools maintained or aided by the State are subject to State inspection. For this service there are three inspectors appointed for secondary instruction (enseignement moyen), namely, one general inspector and two ordinary inspectors, one for the humanities the other for mathematics and the sciences; for primary instruction there are principal inspectors, one or more in each of the nine provinces and subordinate cantonal inspectors.

The minister exercises his authority in advice with the deliberative councils (conseils de perfectionnement). These are three in number, corresponding to the three scholastic departments. They are formed by appointment from the teaching bodies and the officers of education, and deliberate upon the questions submitted by the minister.

The principal secondary schools, Royal Athénées, for boys only, are controlled directly by the minister. He appoints their professors and, in advice with the council, determines their curriculum. Their enrollment, 5,852 students in 1895, is about 20 per cent of the enrollment in all the public secondary schools. In the inferior secondary schools, managed and supported by the communes with some aid from the State, there were enrolled the same year 24,007 pupils, of whom 6,937 were in schools for girls.

The minister also appoints the professors in the State universities and regulates the university programmes. The students in the two State universities, Ghent and Liège, numbered 1,918 in 1895. The attendance in the two private universities, Brussels and Louvain, raised the total number of university students to 5,004.

The control of elementary schools rests largely with the communes. In every commune there must be at least one elementary school. Under the existing law, passed in 1895, this school may be a communal school, supported entirely by public funds, an adopted school, a subsidized private school, or a private school fulfilling the conditions of adoption. The communal council appoints the teacher and arranges the school programme, subject only to the requirement of the school law as to the obligatory branches. The enrollment in all classes of State-aided primary schools in 1895 was 720,191. There was also 142,384 children in infant schools (écoles gardiennes) under public inspection. The detailed statistics of these several classes of schools at the beginning and close of the half decade 1890–1895 were as follows:

Classes of institutions.	Pupils or students.						Teachers or professors.						Current expenditure.	
	1890.			1893.			1890.			1893.				
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	1890.	1893.
Infant schools (écoles gardiennes) (ages 3 to 6 years)			113,172			133,833		1,952	1,952				$413,013	
Primary schools (ages 6 to 14 years):														
Public	366,502	174,144	440,646	(465,921)		652,204	5,438	3,153	8,591	5,697	3,386	9,083		$5,790,880
Subsidized private	68,537	106,858	175,395	(186,283)			1,189	2,015	3,204	1,153	2,234	3,387		
Total	335,039	281,002	616,041			652,204	6,627	5,168	11,795	6,850	5,620	12,470	a 3,870,877	b 5,790,880
Primary normal schools:														
State schools and sections	345	366	711	321	318	639							387,036	
Private	720	1,085	1,805	790	1,217	2,007								
Total	1,065	1,451	2,516	1,111	1,535	2,646								
Schools for adults:														
Public	48,362	13,797	62,159	(63,430)		69,471	2,076	622	2,698					
Subsidized private	3,652	1,864	5,516	(6,041)			146	42	188					
Total	52,014	15,661	67,675			69,471	2,222	664	2,886				195,541	
Secondary schools:														
Royal Athénées	5,726		5,726	5,852		5,852							476,697	
State and communal secondary	(1,223) c 14,521	d 6,958	22,702	15,655	6,859	22,514							740,982	
Total	(1,223) 20,247	6,958	28,428	21,507	6,859	28,366							e 1,217,679	997,234
Secondary normal schools	113	250	363	57	90	147								
Superior instruction:														
State universities—														
Ghent (Gand)			788			672			f 117				g 138,456	j 375,068
Liege			1,383			1,260			h 120				i 155,123	
Private universities—														
Brussels			1,693			1,309								
Louvain			1,800			1,657								
Total			5,664			4,898								

a Not including costs of administration, which pertain to the entire elementary department and are borne by the State exclusively; amount, $115,885; excluding also costs of new buildings, repairs, etc., $527,090.
b Includes infant and primary normal schools.
c 7,231 preparatory.
d 4,506 preparatory.
e Includes repair of buildings and equipment.
f Also 44 officers of administration.
g Includes $85,677 for new buildings.
h Also 68 officers of administration.
i Includes $71,302 for new buildings.
j From public funds, 1892.

1896.

Classes of institutions.	Pupils or students.			Teachers or professors.			Current expenditures.
	Male.	Female.	Total.	Male.	Female.	Total.	
Infant schools (écoles gardiennes; ages, 3 to 6 years)	.....	.....	164,540	.....	.....	.....	.....
Primary schools (ages, 6 to 14 years):							
Public	291,798	183,360	675,158	6,008	3,586	9,594	$6,663,705
Subsidized private	101,040	175,860	276,904	1,687	3,746	5,433	.....
Total	392,838	359,224	752,062	7,695	7,332	15,027	.....
Primary normal schools:							
State schools and sections	337	290	627	.....	.....	.....	.....
Private	929	1,440	2,369	.....	.....	.....	.....
Total	1,266	1,730	2,996	.....	.....	.....	.....
Schools for adults:							
Public Subsidized private	.....	.....	69,270	.....	.....	.....	.....
Total	.....	.....	69,270	.....	.....	.....	.....
Secondary schools:							
Royal Athénées	5,852	.....	5,852	.....	.....	.....	314,722
State and communal secondary	17,070	6,937	24,207	.....	.....	.....	.....
Total	22,922	6,937	29,859	.....	.....	.....	.....
Secondary normal schools	53	85	138	.....	.....	.....	.....
Superior instruction:							
State universities—							
Ghent (Gand)	.....	.....	665	.....	.....	.....	.....
Liége	.....	.....	1,253	.....	.....	.....	.....
Private universities—							
Brussels	.....	.....	1,419	.....	.....	.....	.....
Louvain	.....	.....	1,669	.....	.....	.....	.....
Total	.....	.....	5,144	.....	.....	.....	.....

The following tables show the movement of population as indicated by successive censuses, and also of school population for the same or approximately the same periods:

Movement of school population—ages 6 to 14.

Year.	Total population.	School population.			
		Boys.	Girls.	Total.	Percentage to total population.
1846	4,337,196	363,170	341,284	704,454	16.47
1856	4,529,560	353,366	346,944	700,310	15.46
1866	4,827,833	379,416	376,507	755,923	15.65
1880	5,520,009	466,769	460,019	926,788	16.78
1890	6,069,321	514,915	509,921	1,024,836	16.88
1896	6,495,886	.....	.....	.....	.....

Movement of school population—ages 6 to 14—Continued.

Year.	Enrollment.				Ratio of enrollment in public and subsidized private schools to—	
	Communal schools.	Subsidized private schools.	Total.	Private schools not subsidized.	Population 6 to 14.	Total population.
					Per cent.	*Per cent.*
1845	218,054	108,559	326,613	99,772	45.71	7.53
1857	302,743	96,885	399,628	99,707	57.66	8.82
1869	424,349	69,036	493,385	85,339	65.27	10.21
1881	339,317	801	340,118	.....	36.69	6.16
1885	345,687	325	346,012	.....	(*a*)	(*a*)
1890	440,646	175,445	616,091	.....	60.11	10.15
1894	465,814	229,397	695,211	.....	(*a*)	(*a*)
1895	476,191	244,000	720,191	.....	(*a*)	(*a*)
1896	475,158	276,904	752,062	.....	.....	11.57

a No census.

CHANGES EFFECTED BY SUCCESSIVE LAWS.

The statistics of enrollment in the several classes of primary schools, as shown above, indicate the general progress in school attendance for a period of fifty years, and also in a measure the peculiar disturbances caused by successive laws which, emanating from parties bitterly opposed to each other, have been framed from a political rather than from an educational point of view.

The changes effected by these laws have turned ostensibly upon the question of religious instruction, although their deeper purpose has been that of enlarging or restraining clerical influence in the management of the schools. The latest law, that of 1895, is more extreme in respect to religious instruction than any previous law. Its bearings will be best understood by a brief rehearsal of the main provisions of the successive laws.

The first general law respecting popular education was passed in 1842, twelve years after the separation of Belgium from the Netherlands. The law followed in many essentials Guizot's law of 1833, which forms the basis of the elementary school system of France. It provided that in each commune one primary school at least should be established in an accessible place. The commune was not, however, obliged to establish a public school if its educational needs were fully met by private schools. A commune might also adopt one or more private schools if the provincial authorities so approved. For all indigent children instruction was to be gratuitous.

The commune appointed the teacher and had control of the communal schools, excepting in the matter of religious and moral instruction; this was reserved to the clergy. It was required that a teacher should be paid an annual salary of not less than 200 francs ($40); increased afterwards to 850 francs ($170). The teacher was also to be provided with a house or money equivalent for the same.

State appropriations for the schools were available only when the commune had raised a certain sum and the province had duplicated the amount. A double system of inspection was established—lay and ecclesiastical. The former was exercised by cantonal and provincial inspectors appointed by the Government; the latter was confided to the bishops. Two State normal schools (increased in time to six) were established for the training of primary teachers, and church normal schools were also recognized. The law made religious instruction obligatory, and placed it under the direction of the minister of the denomination to which the majority of the pupils in the school should belong. The children, whose parents so desired, were to be excused from the religious exercise. In like manner religious instruction in each normal school was confided to a clergyman attached to the staff and supervised by church authorities. This law remained in force thirty-seven years.

In 1879, the Liberal party having come into power, a new law, almost revolutionary in its requirements, was passed.

The particulars in which it departed radically from the previous law were as follows: Every commune was obliged to maintain at least one public school, the actual number to be determined in each case by the Government. (As under the previous law, however, two or more communes might be authorized to unite together for the maintenance of a single school.) Moreover, the State could oblige the commune to establish also an infant school and a school for adults (evening school).

For cantonal inspectors appointed by the Government, under advice of the provincial authorities and serving without salary, the law of 1879 substituted two classes of inspectors—provincial inspectors, appointed by the King, and subordinate inspectors, appointed by the central authority. All salaried officials were made responsible directly to the minister or to his representative. Although the right of the communes to control their own schools was respected by the new law, it determined the manner in which this control should be exercised. Moreover, it created a special agency, school committees (comités scolaires), to keep watch over the schools. The members of these bodies were to be appointed by the communal council, excepting where several communes had united to maintain a school, when the appointment went to the minister of public instruction. The minimum salary of teachers was raised to 1,000 francs ($200). The number of State normal schools was raised from 6 to 12.

The law required that teachers should be native Belgians and furnished either with the diploma of a teacher or of a professor in the lower order of secondary schools. It forbade the employment of members of a religious order as teachers, and abolished the ecclesiastical inspection of schools.

The programme of obligatory subjects was greatly extended, and religious instruction was excluded. This was to be left to the care of

the family and the churches, excepting that ministers might be allowed the use of a room in the school building, before or after the school session, to give religious instruction to the children of their respective communions attending the school.

It was also provided that if no clergyman came to give instruction in the school the teacher should be entitled to hear the "repetitions" which were "necessary to engrave on the memory of the child the form of religious instruction prescribed by the communion to which the child belonged." All books used in the schools were to be approved by the Government. The law also withdrew State recognition from private normal schools and the clergyman from the staff of the State normal schools, "assuring to each student complete liberty to perform the religious duties prescribed by the faith to which he belonged."

The law of 1879 was bitterly opposed by the Catholic party, and within eighteen months of its passage the church had opened primary schools in 1,936 communes, which, on December 15, 1880, contained about 450,000 pupils. These efforts continued during the five years of the law's operation, in which period the number of pupils in the communal schools fell from 510,588 to 324,656, a loss of 36 per cent.

In 1884 the Catholic party, having gained a majority in the legislature, a new school law was passed. This provided for the adoption of private schools, restored religious instruction to the programmes as an optional branch, opened the teaching service to naturalized foreigners, and in general gave a large measure of independence to the communes with respect to the conduct of the schools.

The articles respecting these fundamental conditions were as follows:

Every commune must have at least one communal school situated in an accessible place.

The commune may adopt one or more private schools. In this case the King, upon the advice of the "permanent committee," may exempt the commune from the obligation to maintain a communal school. This dispensation can not be accorded if twenty heads of families having children of school age demand the creation or the maintenance of a school for the instruction of their children and the "permanent committee" concurs in this demand.

In case of necessity two or more communes, upon authority from the King, may unite to found and maintain a school. (Art. 1.)

Communal primary schools shall be directed by the communes.

The number of the schools and of the teachers shall be determined by the communal council according to the needs of the locality. The council also controls everything relating to the establishment and organization of infant schools (écoles gardiennes) and of schools for adults. (Art. 2.)

The children of poor parents shall receive gratuitous instruction. The communes must see that all those who do not attend uninspected private schools are provided with instruction either in a communal or adopted school. (Art. 3.)

Primary instruction comprises as obligatory branches reading, writing, elements of arithmetic, the legal system of weights and measures, the elements of the French language, of the Flemish, or the German, according to local requirements, geography, history of Belgium, elements of drawing, singing, and gymnastics. Moreover, it comprises needlework for girls, and for boys in the rural districts notions of agriculture.

Communes have the right to extend the programme as may be possible or desirable. The communes may inscribe religious and moral instruction at the head of the curriculum of all or some of their elementary schools. This instruction must be given at the commencement or at the end of the school hours. Children whose parents so request shall be excused from attending such instruction.

(*a*) In the case of a commune in which twenty heads of families having children of school age ask that their children shall be exempted from assisting at religious instruction, the King can, at the request of the parents, oblige such commune to organize for the use of these children one or more special classes.

(*b*) If, in spite of the request of twenty heads of families having children of school age, the commune refuse to inscribe the teaching of their religion in the school curriculum, or hinder such instruction being given by the ministers of their religion, or by persons approved of by these latter, the Government can, at the request of the parents, adopt one or more private schools, as may be requisite, provided they meet the conditions prescribed for adoption by the commune. (Art. 4.)

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The communes bear the expenses of primary instruction in the communal schools; the provinces also contribute not less than the product of 2 centimes on the amount of the direct tax.

A commune can not obtain subsidies from the State or province for primary instruction unless it contributes at least 4 centimes additional to the direct tax and carries out the present law in all points. (Art. 6.)

Certain provisions of the law with respect to teachers favored church at the expense of secular teachers, or at least they gave authority in respect to the suspension of teachers, which was eventually used to replace the latter class by the former.

Article 7, regulating the appointment, tenure, and salary of teachers, is as follows:

The communal council has the right of appointing, of suspending, of placing *en disponibilité* (out of active service but drawing pay), and of revoking the appointments of teachers. At the same time the teacher's appointment can not be canceled without the approval of the permanent deputation.

The council and the teacher may appeal to the King. The same rules apply to all suspension for more than a month and to all suspension with stoppage of pay or upon reduced pay. Suspension once decreed by the communal council can not be renewed by it on the same facts, nor shall it exceed six months' duration. The King, in accord with the advice of the permanent deputation, both the teacher and the communal council being heard, may suspend or revoke a teacher's appointment. Subject to the same advice, he may place a teacher *en disponibilité.*

The salary of an unattached teacher is paid by the commune if the order depriving him of service is issued by the communal council; by the State, if the order is issued by the King. No place may remain more than a month without a teacher.

The Collège Échevinal (board of aldermen) designates the substitute. The council fixes the minimum of teachers' salaries. The salary can not be less than 1,000 francs ($200) for assistant teachers, and 1,200 francs ($240) for principal teachers. The teacher has besides this the right to be lodged or to receive an allowance for house rent.

The communal council can place a teacher on the unattached list, and so keep him from active employment, in which case he will receive waiting pay, under conditions which will be determined by royal decree. The amount can not be less than half his salary nor less than 750 francs. This pay will be furnished by the State, the province, and the commune in the proportions fixed by law.

Article 8, opening the service to foreigners, was as follows:

The communal schoolmasters are chosen from among those Belgians, either by birth or naturalization, who have gained the diploma of an elementary teacher after

being trained in a public normal school, or who have passed an examination after having attended lectures during at least two years, or who have gained a diploma for secondary teaching (enseignement moyen) of the second degree. They can also be selected from among those persons who have successfully passed the teachers' examination before a jury appointed by the Government.

With respect to adopted private schools, it was further provided that—

(1) The school must be established in a suitable building.

(2) At least half the number of teachers must have received a diploma or have passed the examination for the male or female teachers; but the minister is at liberty to dispense with this condition during the two years following the promulgation of this law. Those who have had charge of communal schools prior to the present law are exempt from examination.

(3) Should religious instruction form a part of the curriculum, such instruction shall be given at the beginning or at the end of the school hours. Children, on the application of their parents, shall be exempted from attending religious instruction.

(4) The curriculum shall comprise the subjects mentioned in section 1 of article 4 of the law.

(5) The adopted school must accept State inspection.

(6) It must admit poor children without requiring other payment than that prescribed in article 3 of the law.

(7) The number of hours of school attendance shall not be less than twenty per week, without including the time devoted to teaching of religion and morals; after deducting the time employed on needlework, this number shall not be less than sixteen. (Art. 9.)

Communal and adopted private schools were subject to State inspection, but this was not to be extended to religious and moral instruction.

Private normal schools were recognized under the law, and might receive State aid if they submitted to State inspection. It was further provided that persons who obtained the diploma of primary teacher from a private normal school between the adoption and the repeal of the law of July 1, 1879, might receive the appointment of communal teacher on condition of obtaining a confirmation of such diploma from a board organized in accordance with the law.

Within three years from the passage of the law 802 communal schools and 492 teachers' places were suppressed and many teachers were placed "en disponibilité." The law proved unsatisfactory, however, to extremists of both parties, and was bitterly opposed by the State teachers. The Catholic party, which was strengthened by the violent demands of the Socialists, complained that the law did not put religious teaching into the right hands. "Practically," they said, "there can be no religious instruction in schools without the help of the clergy." They urged, further, "that in many important towns religious teaching had been added to the curriculum, not from a disinterested desire to provide it, but in order to prevent the Government from stepping in to adopt private schools, and that in such cases the character of the religious instruction left much to be desired; that those who in their anxiety to secure religious instruction between 1879–1884 had founded

private schools which were still continued, but were not as yet subsidized by the State, were paying for education twice, viz, in the schools of their choice and in the communal schools, to which they contributed through central and local taxation."

To meet some of the complaints of those who subscribed to private elementary schools, the Belgian Government provided in 1894 a sum of 3,000,000 francs to be spent in aid of private schools. This encouraged proposals for further expenditure in the same direction, which were eagerly demanded by one party and violently opposed by the other. The whole country became excited over the subject, and finally, in the summer of 1895, the Belgian ministry introduced a new law, which was designed to satisfy the dominant party and to improve the condition of teachers. It provided that religious instruction should be made obligatory and confided to the clergy; that subsidies to private elementary schools should be increased, and it regulated both the salary and tenure of teachers. The general provisions as to the establishment or adoption of schools, free tuition for poor children, and the persons eligible for appointment as teachers, remained as under the law of 1884.

The principal change effected by the law relates to religious instruction. This is made a compulsory subject, to be placed at the head of all primary school programmes. Instruction in the same is confided to the clergy, who must have free access to the schools, either to give or to supervise the religious lessons, as they may decide. The requirement extends to normal schools also.

The articles referring to religious instruction are as follows:

Primary instruction comprises, as obligatory branches, instruction in religion and morals, reading, writing, elements of arithmetic, the legal system of weights and measures, the elements of the French language, of the Flemish or the German, according to local requirements, geography, history of Belgium, elements of drawing, singing, and gymnastics. Moreover, it comprises needlework for girls, and for boys in the rural districts notions of agriculture.

Communes have the right to extend the programme as may be possible or desirable. In the primary schools to which the law is applicable, the ministers of the several denominations shall be asked to give the instruction in religion and morals, or to cause it to be given under their supervision, either by the teacher, if he consents to do so, or by a person approved by the communal council.

The first hour or the last half hour of the morning or of the afternoon session shall be given each day to this instruction. Children whose parents make the request in the following form may be exempt from the religious instruction: The undersigned, in pursuance of the right conferred upon him by article 4 of the law relating to primary instruction, requests that his child be exempt from attending the instruction in religion and morals. (Art. 4.)

The inspection of the instruction in religion and morals shall be exercised by persons delegated by the "chiefs of the confessions." The delegates discharge their duties according to conditions specified in a royal arrêté.

The chiefs of the several confessions notify the minister of the interior and of public instruction of the appointment of their delegates, who, after sanctioning the same, transmits the necessary instructions to the provincial and communal officials, as well as to the inspectors of primary instruction.

Every year, in the month of October, each of the "chiefs of religion" addresses to the minister of the interior and of public instruction a detailed report upon the manner in which the instruction in religion and morals is given in the schools controlled by the law. (Art. 5.)

Teachers must show an equal solicitude for the education and instruction of the children under their charge. They are to neglect no opportunity to inspire in their pupils the sentiments of duty, love of country, respect for national institutions, and attachment to constitutional liberty. They must abstain from any attack upon the religious beliefs of the families whose children are intrusted to them. (Art. 6.)

With regard to the support of elementary schools, the law of 1895 provides, as heretofore, that this shall be at the charge of communes, the provinces, and the State. The commune must take the initiative in establishing the school, whether communal or adopted, providing the building and equipments, and, in order to share in either the State or the provincial appropriation,

Must contribute a sum equal to the product of 4 centimes additional to the direct tax, and must execute the law respecting primary instruction in all particulars.

The province must contribute for school purposes an amount not less than the product of 12 centimes additional to the direct tax. The funds at the disposal of the commune for primary instruction can not be used for another purpose. (Art. 7.)

Article 8 provides for an annual grant from the legislature for elementary education, to be divided among communal schools, adopted schools, and private schools. The conditions for apportionment are the same for all classes of schools. They must submit to inspection and conform to the general regulations as to curriculum, staff, and position, but private schools will not be under the management of any local authority. It is explained in an official circular addressed to the governors of provinces that it is not necessary for a private school to include religious instruction in its programme in order to receive Government aid.

The advocates of the law defend the appropriation for private schools on the ground that if the State and communes had been required to establish and maintain all the elementary schools, public and private, which are now in existence in Belgium, the annual cost would have been 6,500,000 francs ($1,300,000) greater than the present outlay from central, provincial, and communal funds.

As under the previous law, the right of appointing and suspending teachers and of revoking their appointments rests with the communal council, appeal to the "permanent deputation" (provincial committee), and finally to the King, being possible in each case. There is also the same provision for dispensing with the services of public teachers as under the law of 1884.

The new law further provides that no teacher's salary shall be reduced during his tenure of office in any one commune. The position with respect to salaries is slightly improved. As against a minimum annual salary of $200 for assistant teachers and $240 for princi-

pals under the previous law, the present law fixes the following classes and rates:

	Principals.		Assistants.	
	Men.	Women.	Men.	Women.
Fifth class, communes of 1,500 inhabitants or less	$240	$240	$200	$200
Fourth class, communes of 1,501 to 10,000 inhabitants	280	260	220	220
Third class, communes of 10,001 to 40,000 inhabitants	320	280	240	220
Second class, communes of 40,001 to 100,000 inhabitants	360	320	260	240
First class, communes of more than 100,000 inhabitants	480	440	280	240

The teacher must also be provided with a residence or indemnity for the same ranging from $40 to $160. (Art. 13.)

An increment of $20 is allowed for every four years of good service until the total increment amounts to $120. (Art. 15.)

It was earnestly contended by the advocates of the bill that the spread of socialistic doctrines was due to the purely secular character of the teaching in the public schools, and that in order to insure sound public opinion religious instruction must be made compulsory. The socialists urged on the other hand that the law violates the principles of the constitution by requiring parents to make a declaration of their religious faith and by recognizing an official religion. They also maintained that it interfered with communal rights and gave teachers no real security in their positions.

M. Beernaert, the former minister of the interior, expressed the views of the moderate opponents of the law—among whom were many Catholics—in a speech delivered while the bill was pending.

He held that the proposed measure gave too much power to the State in respect to determining the character of religious instruction, and that if it became law it might easily be used by a reactionary party for the destruction of all religious teaching in the schools. He foresaw, as a result, constant change in the educational policy of the country, which would entail great discomfort upon the teachers and greatly weaken the influence of the schools. He desired some more stable settlement of the problem.

The moderate party in the legislature, under the lead of M. Beernaert, urged a measure less stringent than the law of 1879 and giving greater independence to the communes than the proposed law.

They submitted proposals as follows: (1) That the State should, where necessary, subsidize denominational schools not under private management, and that each commune should be free to give religious instruction or not in its own or in adopted schools as it might prefer. (2) That the communes should not be compelled to make religion an obligatory subject in the programme of the communal schools, and to submit to ecclesiastical authority in all matters pertaining to religious instruction. The efforts of the moderates were so far successful that it was proposed in the lower chamber to divide the Government bill into two parts,

treating separately the clauses touching the salaries and position of teachers, upon which all parties seemed agreed. The proposal was, however, lost by a vote of 73 to 61.

EXPENDITURE ON PRIMARY SCHOOLS.

The expenditure for primary instruction in Belgium reached the sum of $6,663,705 (33,318,527 francs) in 1896, equivalent to $1.02 per capita of population and to $8.85 per capita of enrollment. Of the entire sum the State provided 41.6 per cent; the communes, 46.2 per cent; the provinces, 5 per cent; school fees, 4 per cent, and subscriptions, legacies, etc., 3.2 per cent.

The direct maintenance of the infant schools (écoles gardiennes), 1,769 in number, and the primary schools, either public or subsidized, numbering in all 6,546, absorbed 74 per cent of the entire expenditure.

As compared with 1894 this expenditure showed an increase of $620,408, of which the State contributed $225,083. This has gone really to the support of subsidized, private, or, in other words, parochial schools.

CITY OF BRUSSELS—INQUIRY INTO THE CHARACTER OF THE CLOTHING, NOURISHMENT, AND LODGING ACCOMMODATIONS OF THE PUPILS OF THE COMMUNAL SCHOOLS—REPORT OF THE COMMITTEE TO THE CHIEF MAGISTRATE, ALDERMEN, AND COMMON COUNCIL OF BRUSSELS.

The schools of Brussels, which attained a very high degree of efficiency during the supremacy of the Liberal party, have suffered less than those of other communes from the political vicissitudes. The city has long been noted also for efforts in behalf of destitute and neglected children. An investigation was recently made under the order of the municipal council into the living conditions of the children attending public schools. The report of this investigation, which is valuable both as a model and for its valuable results, is here summarized:

In 1888 the Progress Club was authorized by the collège échevinal to provide soup for the needy children of the primary schools on their leaving school at noon. The distribution of soup was at first made in the rooms of the cooperative society called "Les Ateliers Réunis," but after a while, in order to avoid the crowding of the rooms of the society, the distribution took place in the schools themselves, the society continuing in charge of the preparation of the soup, the city furnishing the tables, the Progress Club providing the dishes, while the school servants washed the dishes and cleaned up the rooms. This arrangement was extended to the kindergartens, and the city having placed certain drays at the disposal of the Progress, together with the necessary men, the soup could be carried rapidly and with the necessary regularity, while the considerable expense of transportation was saved the club by this means.

It was upon this rock of the expense of transportation to the different schools that the attempt of 1880 was wrecked. At that time a society for feeding the poor children in the communal schools was founded, under the presidency of M. Buls, alderman in charge of public instruction, by the financial assistance of the late M. Bischoffsheim, whose generosity was never appealed to in vain. It was compelled

to abandon its distribution of food because the expense of transportation absorbed the greater part of its resources.

However, that difficulty being overcome, the "Progress Club" was able to continue its distribution, its work became popular, and sufficient resources from collections, entertainments, and subscriptions even permitted the club to extend its operation.

But other objects soon solicited the generosity of the public, the receipts of the club began to diminish, while new extensions were demanded, and then it was decided to ask for pecuniary assistance from the city.

At the session of the communal council of the 24th of December, 1891, M. Lemonniers proposed to grant a subsidy of 5,000 francs to the "Progress" Club.

The "College échevinal," acting in accord with the section of public instruction, which had deliberated upon this subject in the session of the 9th of December, had come to a conclusion unfavorable to the grant. While acknowledging the philanthropic sentiment which dictated the request and the zeal of the promoters of the work, the collège saw in the grant the beginning of a constantly increasing expenditure which would, before long, result in an enormous charge for the city.

Moreover, notwithstanding the explanations and circumspection with which the vote for the subsidy was surrounded, it was a question of principle whether the feeding of poor children was really an obligation incumbent upon the commune, and whether it was a duty of the city to maintain or develop works of private philanthropy.

Nevertheless the council voted a subsidy of 5,000 francs, specifying that this subsidy was only granted for one year, but the apprehension expressed in the meeting of December 24, 1891, was speedily realized. The official intervention of the city gradually led to the withdrawal of private assistance. The proceeds of collections, gifts, etc., continued to diminish, and public feeling, attracted by other nonsubsidized benevolent undertakings, was diverted from that which official support seemed to guarantee against any unfortunate eventuality.

In the session of December 18, 1893, Councilman Richald proposed to raise the subsidy for the "Progress" Club from 5,000 francs to 10,000 francs for the school soup, and to allot a supplementary subsidy of 5,000 francs for clothing.

The collège restricted its action to repeating the arguments of 1891, and, after discussion, the communal council adopted unanimously the following motion, that a commission be appointed to consist of members of the council and to be elected by it, to examine into the condition of the children who attend communal schools, in regard to their food, lodging, and clothing. Its duty also was to examine into the financial outlay for furnishing soup and clothing for the school children. This proposition having been submitted to the section of public charities, education, and finances, this section, on January 15, 1894, decided that the following method should be followed in carrying out the investigation proposed by the council:

(*a*) A schedule should be forwarded to the principals of the schools, who, with the assistance of the teachers, should make returns upon the character of the clothing, usual quality of food, cleanliness, and attendance of the scholars.

(*b*) The city physicians should be required to report upon the health and the sufficiency or insufficiency of the usual food.

(*c*) The police should report upon the character of the lodgings.

Under (*b*) the physicians were required to classify their answers: 1, as to health, under the heads "good," "medium," "bad"; and, 2, as to nourishment, under the heads "sufficient," "insufficient." As to lodgings, the following schedule was adopted:

What is the number of children sleeping in one bed; having no bed; sleeping in the same room with their parents; sleeping in the same bed with their parents; sleeping with brothers or sisters; brothers sleeping with sisters; sisters sleeping with brothers; sleeping in the kitchen; sleeping in the cellar or basement.

The inquiry extended to 11,904 pupils of the primary schools, and 2,543 pupils of the kindergarten, 14,447 in all. It was found that 2,442 children, or 16.89 per cent, had

insufficient foot wear; 3,620, or 25.04 per cent, were ill-clothed, and 3,663, or 25.35 per cent, were insufficiently fed. The expense necessary to provide for the wants indicated was estimated at 389,000 francs ($77,800) a year.

On November 24, 1894, the results of this inquiry were submitted to the sections, and Alderman André showed not only the magnitude of the obligation which would be imposed upon the city—an obligation out of all proportion to its resources—but also the insufficiency of its resources. Experience shows, unfortunately, that any charitable distribution immediately gives rise to crowds of petitioners whose demands it is impossible to avoid and whose ingenious combinations it is equally impossible to baffle. He also objected to the transformation and extension of the school soup supply, the fear that parents would become by its means indifferent to their children, and that it would conduce to destroying the family sentiments. The real subject for discussion, according to him, was whether the commune ought to be a substitute for parents in clothing and feeding their children. Another member, M. Furnemont, after expressing his opinion that the figures of the report should be verified, requested that an inquiry should be made into similar organizations in Belgium and abroad. After much discussion the question was adjourned until further study of the matter, especially abroad, could be made.

(The schedule of questions sent to foreign countries is given later on in the report.)

We have coordinated the returns, although the differences between the political or charitable organizations of different countries do not allow an absolutely exact comparison. Some general principles, however, are deduced from the inquiry. These are: First. That nowhere is the right to assistance in food and clothing recognized for all pupils. Second. That except in France the organization of assistance for poor pupils is everywhere left to private initiative. At Ghent and Liége the communal distributions are confined to kindergartens. It is difficult to draw any conclusions as far as Brussels is concerned, as may be seen by consulting the column where the expense for each city in proportion to the population is shown. But this is explained by the circumstance that there is no resemblance in the organizations of different cities, each having its own. The inquiry, nevertheless, contains some very interesting information. It shows particularly what private initiative can do when the efforts are concentrated, when the attention and the sympathy of the public are kept constantly awakened, and its generosity is exercised in favor of well organized works whose benefits are tangible, evident, and publicly known, and directed to those natural objects of charitable sympathy—children. While in other countries philanthropic associations follow one aim and adhere to it, endeavoring to establish a settled system of charitable work and gather for it and about it the needed resources in order to secure its continued existence and prosperity; our own people dissipate their activity and revenues upon a multiplicity of charities which are not related to one another and are successively taken up and abandoned. We exhaust our resources in building up hastily devised organizations which are ill-sustained, and when the critical moment comes, when the obligations exceed the receipts, and the public, assailed and solicited on all sides, turns away and forgets us, then we endeavor to make the public authorities undertake the burden which we had rashly assumed. Perhaps we might derive a useful lesson from the practice of other countries in this matter.

The examination of the situation, which the inquiry has revealed, has not altered the opinion of the collège as to the principle involved of the commune assuming the obligation of supplying food and clothing to the children attending the public schools.

We wish to express our appreciation of the generous ideas which have prompted the charity of school soup and clothing, nor shall we make difficulties in giving them our individual support and, within certain limits, the aid of the city, but there is a great step from this to transforming what is the part of private initiative into a public service of general obligation.

The reason is simple. Where a private individual finds a person who has met with

misfortune, he helps him to the extent of his power without stopping to inquire whether his intervention may not have moral consequences which will be unfortunate for the assisted one. He follows the impulse of his heart and is otherwise free from responsibility. His charity may be well or ill directed, but he is master of his property and may do what he likes with it. But the mission of public authority is different, and when it is proposed to create through it, in perpetuity, a vast organization of charities, it is its duty to inquire whether the remedy is not worse than the disease, whether the moral consequences of the project, which are inevitable, will not be disastrous, and, in short, whether the result will not be diametrically opposite to what the advocates of the new ideas expected.

We no longer believe in the simple formulas which the French revolution applied as a remedy to social miseries. A long and sad experience has taught us that the evangelical command, "Feed those who are hungry and clothe those who are naked," is not a solution. When we come to discuss the evil effects of official benevolence, which is inspired by the simple principle we have pointed out, we come to the unanimous conclusion that, aside from cases of accidental distress, gratuitous assistance always ends in the moral deterioration of the assisted. It is the extension and revival, under a modern form, of the distribution of food which the religious orders used to make every day in former times, and which resulted in the maintenance of whole communities in poverty and idleness.

In regard to the children whose condition was found to be precarious, the question was whether their parents were to blame for their poverty or not. It was found that most of the children were the victims of the idleness, debauchery, and improvidence of their parents, or sometimes of the ignorance of housewifery on the part of the mothers.

As far as unmerited poverty is concerned, in the case of the children of widows or of persons temporarily in distress in consequence of stoppage of work or of sickness, it is not only the children who need assistance from the public, but the entire family, which must be aided either by providing work for the father or in supplying the urgent needs of the family during the critical period. The child can receive food and clothing at school, as a case of urgency, but aside from such cases, school aid will find sufficient resources in private initiative and the charities it has ingeniously created and maintained.

But there is a further consideration. It is expected that all the children who shall need or seem to need assistance will be permanent beneficiaries. Is it not obvious that this is the surest way to increase largely the number of these children who are practically orphans, although they have parents? So that with a charitable object in view, and acting from sentiment rather than reason, people would sever the last tie that unites parents to their children, that makes them sensible of the obligations they have undertaken, and that removes the last consideration which prevents them from yielding irrevocably to that base and egotistic conception of life which leads to idleness or drunkenness. This condition has been described by a French economist as one in which the poor are put at their ease in their poverty instead of being urged to free themselves from it, and it would be accentuated by the method above recommended. Whence comes the obligation upon the public to take the place of parents and replace with the public funds those which have been perverted to debauchery or idleness? It is useless to urge that this obligation is the same as that of public instruction. Instruction is a great social interest and something which every citizen can not provide for his children, and therefore it is the duty of the public to organize schools and facilitate access to them. But to provide food and clothing is not a part of the public service, and it can not be seen that there is any obligation to provide for evident but purely personal needs unless it can be shown that parents are absolutely unable to give their children the necessaries of life. On the contrary, we should strive to awaken the sense of dignity in the man afflicted by poverty, urge him to earn the assistance which is given him, rouse him from the demoralizing acquiescence in the continuance of this assistance, and make him

feel the spur of necessity. Efforts should be directed to avoiding the contingencies of unmerited poverty by developing the spirit of providence, order, and economy, and facilitating the practice of these virtues.

As to those who remain refractory to all efforts to rouse them and remain dead to all moralizing influences, what is gained by aiding them? The money that would be thus retained from the maintenance of their children would be paid out for drink, and thus the evils which charity, whether public or private, engenders about us, in spite of all precautions, would be extended.

It should not be concluded from the foregoing that nothing should be or has been done, for this would be to forget the outburst of philanthropy which provides warm clothing for poor school children every winter. The ladies of the school associations, benevolent societies, and the young ladies of our paying schools also make contributions. In the primary schools the clothing charities make frequent and abundant distributions of clothing, and the members of the teaching force in certain schools have devoted the profits of certain emoluments to the use of the poor children. The administration of charities has helped us greatly by providing clothing for 1,435 children since the 1st of January. Finally the communal council allotted 10,440 francs for the purchase of supplies for the course of manual training in girls' schools, and the clothing thus made is distributed to the other needy school children. Nor should we leave out of account the sanitary inspection of the communal schools which has been initiated by a number of cities both in Belgium and abroad. Sixteen physicians have charge of the schools, each of whom has to visit a certain number of them at least once in ten days. The health office has a check upon these visits through the thermometric bulletins which the physicians are obliged to sign at each visit. Children in poor health take every day a dose of cod-liver oil or of zootrophic powder, which is supplied by the public charities. These medicines are administered by the teachers. Each child has a glass, which is washed every day. Once a month the school physician witnesses the distribution.

A dentist visits the schools every week and attends to the teeth of the children.

In 1894–95, 3,676 children were subjected to preventive treatment and at the end of the year a considerable improvement was observed in 3,409 cases, or 92.7 per cent, and 1,292 were treated by the dentist. This shows services of inestimable value for the people, which could not, however, take the form of charity, and notwithstanding the expense, which may be put at 10,000 or 11,000 francs a year, the city did not hesitate to organize and extend them. As to food, the "Progress" Club organized, with the help of the city, a service for supplying a plate of hot soup, with bread, to the children designated by the teachers. This organization, wherein private initiative plays the leading part, has the great advantage, resulting from the very limitation of its resources, that its extension beyond what is strictly useful is forbidden, whereby abuses are prevented. We believe that this organization will continue, aided by the city, to exercise its charitable functions, possibly with some improvements in the details of its management.

The annual expense of distributing clothing and food to all the school children who need them would amount to about 389,000 francs ($77,800), without including certain expenses of administration, superintendence, and installation. In the session of November 26, 1894, Councilor Richald, on the strength of figures supplied by the president of the "Progress" Club, estimated that 51,000 francs ($10,200) would be sufficient for all needs. There is evidently here some misunderstanding. There is no doubt that if it is only a question of prolonging the service, as at present organized, throughout the year, 51,000 francs would be sufficient. But the members of the council who are in favor of the organization of school canteens and wardrobes wish to go much further and, from their point of view, they are doubtless right. The allotment of 51,000 francs on the advice of the "Progress" Club is, perhaps, a concession to public sensibility, but it is only a partial solution. In fact, while the soup does the poor children good by warming their stomachs, it can hardly be called food. The stew which is given them from time to time is more substantial, but even

that does not realize the full idea of nourishment, and no physician would say that it does. On the other hand, there are parents who use these distributions as a pretext for not giving their children anything to eat at noon. Physicians declare that every child who does not eat meat or eggs four times a week is insufficiently nourished.

The discussion as to school nourishment has been carried to high ground, so as to cover the future of the nation and the conservation of the species. Now if we start upon this ground, it is no longer soup alone which must be furnished, but a nourishment sufficient to make up for the insufficiency of the family food, in which case 389,000 francs would doubtless be needed to defray all expenses on that score.

This expenditure does not include bedding, which is a more difficult question. Poor people crowd together, and the want of bedding is very often not due to their poverty so much as the want of space. It would be useless to give them beds and mattresses since they would have no place to put them. No estimate can be made upon this point.

Questions of the kind before us should be examined dispassionately, avoiding as much as possible all appeal to the sensibilities. The inquiry requested by the council has been carried out as loyally and completely as possible, and it has now been informed upon the different points raised in the interrogatory which was sent out. It knows the needs and the cost. It should not be forgotten that the inquiry was limited to children attending the communal schools, and that the reasons for providing school canteens and wardrobes for these children apply as well to those who attend other schools and those who do not go to school at all. The number of children of school age is about 27,000, or nearly double the number of those attending the communal schools. Taking the same proportion, we should have an expenditure of nearly 800,000 francs ($160,000) if the remaining children were to receive the benefit of the food and clothing distribution. We have already answered the question whether the city ought to bear this expense, and an examination of the budget will show that it can not bear it. It is, of course, desirable to relieve or suppress the miseries of poor children, but where could the city get the funds for such an object? There are many good purposes for which money is wanting, and there are no means of getting it. The financial conditions of the administration of large cities is becoming more and more complex and difficult, while the demands upon the duties of the commune are augmenting every day.

But the public energetically resists every contribution which is asked from it in exchange for the service it receives, and the communal resources are based, in fact, upon special services which are essentially uncertain in their nature. It therefore seems preferable to continue to provide for the most pressing needs with the assistance of public charity and that of benevolent individuals. To propose to create vast services of charity and not be able to carry them out for want of funds is to arouse hopes which can not be realized and make the poor feel still more keenly the extent of their poverty. Besides, we repeat, this course favors improvidence, vice, and idleness, and encourages the unworthy to amass themselves around those who are temporarily and unmeritedly in want.

As a general rule no gifts should be gratuitous, but all assistance should be paid for by work when the man is well. Every other form of charity degrades a man and perpetuates his poverty and that of his children. The necessity of working for their children is with many the last guaranty of the preservation of personal dignity and the highest prompting of conscience toward work and sobriety. It does not do to cheapen this condition of mind, and on this point we can repeat the words of M. Paulian in his work on poverty, "A benefit wrongly bestowed is a wrong."

The summary of the results of the investigation for communal schools is as follows:

Total number of pupils attending the primary schools	11,904
Number wearing wooden shoes	2,347
Number wearing leather shoes	8,536
Number wearing slippers	187
Number wearing other footwear	834
With insufficient footwear	1,910
Number whose shoes are satisfactory	9,994
Number who are habitually neatly and cleanly clothed	10,438
Number of those whose clothing is habitually dirty and untidy	1,466
Number of those who receive clothing from charitable sources	2,187
Number who should receive such on account of their habitual condition	2,783
Children who habitually come to school dirty (face, hair, hands, neck)	876
Number who are bathed all over at least ten times a year	5,577
Number who take foot baths at least once a week	9,086
Number who wash the entire body once a week	8,234
Number who have no pocket handkerchief	1,924
Number who take the noon soup provided for the school	3,109
Number who appear to be insufficiently fed	2,120

KINDERGARTENS.

Total number of pupils	2,543
Number with wooden shoes	392
Number with leather shoes	1,925
Number with slippers	51
Number who have other kinds of shoes	175
Number who are ill furnished	532
Number who are sufficiently furnished	2,011
Number whose clothing is habitually clean and neat	2,090
Number whose clothing is dirty and slovenly	453
Number who receive clothing from a charity	1,215
Number who ought to receive it from charity	837
Number who come to school habitually dirty (face, hair, hands, neck)	212
Number who take baths at least ten times a year	1,204
Number who take foot baths at least once a week	1,898
Number who take baths every week	2,009
Number who have no pocket handkerchief	492
Number who take the noon soup provided for the schools	860
Number who appear to be insufficiently fed	354

LODGING, PRIMARY SCHOOLS.

Children sleeping alone	10,543
Having no bed	538
Sleeping in the same room with their parents	5,635
Sleeping in the same bed with their parents	590
Brothers sleeping with sisters	578
Sleeping in the kitchen	2,603
Sleeping in a cellar or basement	99

KINDERGARTENS.

Sleeping alone	2,031
Without bed	146
Sleeping in the same room with parents	1,526
Sleeping in the same bed with parents	165
Sleeping with brothers	688
Sleeping with sisters	649
Sleeping in the kitchen	686
Sleeping in the basement or cellar	11

NOURISHMENT, MEDICAL INQUIRY.

	Primary schools.	Kindergartens.
Number of pupils whose health is habitually—		
Good	8,410	1,801
Medium	2,231	522
Bad	963	202
Total	11,604	2,525
With sufficient nourishment	9,042	1,832
With insufficient nourishment	2,513	693
Total	11,555	2,525

The physicians state that these statistics are not of the highest value in the case of the kindergartens, on account of the difficulty in obtaining reliable information as to the nourishment either from the children themselves or the teachers. As to health, they depended on absences for sickness, the nature of the maladies, and the constitutional condition of the children. As to nourishment, they deemed a child insufficiently fed who did not have meat or eggs at least four times a week.

Distribution of school soup in Brussels.

Period of distribution. (Nov. to Mar. 1.)	Number of distributions.	Total expense.	Remarks.
1888-89	110,661	$811.83	Ordinary soup of the cooperative society.
1889-90	185,640	2,188.86	Special soup prepared for the children. Stew twice a week.
1890-91	299,359	3,220.05	
1891-92	274,328	2,898.28	
1892-93	289,365	3,963.54	From 1892 each child receives one ration of bread.
1893-94	248,666	2,711.56	
1894-95	253,090	2,618.79	

In 1890-91 the soup was distributed during seventeen weeks at an average cost of $189.40 per week. In 1891-92, seventeen weeks, average $190.40 per week. In 1892-93, fifteen weeks, at $264.20 per week. In 1893-94, thirteen weeks, at $206 per week. The bread rations amounted to 4,725 pounds in all. In 1894-95, sixteen weeks, averaging $165.60 per week; bread 4,902 pounds.

The Progress Club receives annually—

First. From the city $1,000

Second. From the committee on markets 600

The balance of the cost is paid by members of the club.

Wants for which provision should be made.

1,910 / 532 } 2,442 children with bad shoes who ought to have one pair of galoches each in winter, at 40 cents $976.80

2,783 / 837 } 3,620 children poorly clothed, each of whom should have one suit a year, at $2 ..... 7,240.00

2,513 / 663 } 3,176 children insufficiently fed[1] 69,554.40

77,771.20

The report continues with tables showing the number of distributions of food and clothing to pupils of the primary schools and kindergartens in various other cities in Belgium, France, Holland, Germany, Austria, and Switzerland, giving the source of the assistance, whether public or private, and the cost.

[1] If only one meal is given at noon, the expense would be one-half this sum, or $34,777.20.

Table of sums distributed for food and clothing of poor children in the primary schools and kindergartens in different cities.

Cities.	Population.	School population.	Number of pupils aided.	Total amount expended.	Mean per inhabitant.	Mean per pupil.
Cities where aid is given to needy pupils without their request.						
Ghent	155,746	14,446	1,900	$2,280	$0.017	$0.158
Bordeaux	252,102	18,000	3,600	6,000	.024	.333
Rotterdam	272,042	13,900	3,500	3,440	.013	.247
Berlin	1,820,340	183,633	3,500 7,500	2,051 25,051	.015	.158
Dresden	320,600	30,000	300	750	.002	.025
Vienna	1,495,764	162,786	13,097	71,404	.048	.439
Cities where aid is given to needy children at the request of parents.						
Antwerp	256,000	*a* 18,244	550	3,200	.012	.175
Paris	2,424,600	143,554	17,263	161,000	.066	1.120
Lyons	438,077	21,560	8,000	12,000	.027	.558
Lille	200,325	17,300	11,000	11,860	.057	.658
Roubaix	115,390	12,983	10,125	13,533	.115	1.671
Marseilles	406,919	25,605	3,400	4,753	.011	.185
Barmen	128,129	22,656	600	3,750	.029	.165
Geneva	80,111	*a* 3,664	330	1,650	.021	.445
Zurich	126,497	*a* 10,171	161	292	.002	.028
City where assistance is given partly to all pupils and where needy children alone receive the other part.						
Liège	160,841	16,040	6,891	6,720	.042	.41

a Primary schools only.

The report gives the following information concerning the organizations of the charities for poor school children of the official schools in the various cities mentioned:

1. Cities where assistance is given to needy children only, without their request.

BELGIUM.

Ghent.—Children attending the écoles gardiennes, whose parents request it, may stay at the school all day and receive one ration of soup at noon. The number of such children diminishes in proportion as the schools multiply and are nearer the homes of the children.

FRANCE.

Bordeaux.—Food and clothing are supplied by sociétés de patronage. Some schools only receive food. For the écoles maternelles there are ladies' committees, who make the clothing.

HOLLAND.

Rotterdam.—Food was first supplied to school children in 1885 by a private individual, M. Koene, who bore all the expenses of this charity until 1891. The number of children increasing from year to year and M. Koene no longer being able to supply all the wants, two friends of his joined him in the work, the value of which is now recognized, and it receives donations from all sides. The city provides the rooms. M. Koene and his friends also distributed clothing to needy children; but a society having been formed in 1893 for the distribution of clothing, the first company only attends to the food.

GERMANY.

Berlin.—The Verein für Kindervolksküchen, which is not subsidized by the city, furnished 500,000 complete meals in 1894, the first year of its existence. If we suppose that the distribution only took place in the winter months, or for 125 days, and that the cost per meal was 5 cents, this society must have fed 4,000 children and paid out

$25,000. The money for this purpose is derived from interest of endowments administered by the city, subscriptions from charitable clubs, and appropriations made by the city.

AUSTRIA.

Vienna.—The distribution of food is carried out by a society which has its office at the Hôtel de Ville, and is administered by a commission of 30 members, 8 of whom are delegates from the communal council. Its bank deposit is supplied by an annual subsidy of $10,000 from the city, by legacies, gifts, and assessments upon its members. The receipts from these last three sources amounted to $6,906 in 1893–94, of which $2,681 was added to the reserve fund, which amounts to $54,875, producing an annual revenue of $2,655. The expense of the distribution for 1893–94 was $14,623.50. The society appoints a local committee in each quarter, whose duty is to make inquiries and superintend the distributions.

In Vienna there are crèches, écoles gardiennes, and kindergartens. The first two are attended only by children of the working classes, while the kindergartens have pupils from the well to do. In the crèches and in certain écoles gardiennes all the pupils are fed free of expense. In the other écoles gardiennes food is only supplied gratis to those pupils who do not go home at noon. The same is true in certain official kindergartens. The city grants an appropriation for these schools.

All indigent children can participate in the gratuitous distribution of clothing without the necessity of going to school for that purpose.

Orphans or abandoned children committed by the city to foster fathers get their clothing from them. If they can not furnish it, they can obtain it from the committee on charities, on proper representation, the funds coming from legacies, orphans' banks, subscriptions, etc. Funds for supplying clothing in winter through local committees come from similar sources and from appropriations to each committee by the communal administration. This appropriation amounts to $8,000.

2. Cities where indigent children receive aid at the request of their parents.

BELGIUM.

Antwerp.—All children in the kindergartens participate in the distribution of soup, and pay at the rate of 1 cent per plate when the cost is 1½ cents. In 1893 the total expense for kindergartens was $8,400, while the children paid $7,000. The expense is borne by the bureau of charities. Clothing is supplied by private societies.

FRANCE.

Paris.—The law of 1882 affecting public instruction made it obligatory upon the communes to establish one or more school banks, whose funds are supplied by the city, the department, and the State, together with private gifts. Their object is to furnish assistance of all kinds to indigent children—clothing, shoes, food, school books, financial aid, school colonies. The school banks of Paris possess a large reserve fund. In 1892 their receipts proper amounted to $232,553, besides grants from the conseil général, the municipality, and the Government. Their expenses during the same period were $379,216, only a very small portion of which was devoted to food. In 1893 the contribution of the school banks to the school canteens amounted to only $1,500.

The food is distributed by the school canteens, and is free for poor children. Children who are able to pay can get a complete meal for 2 or 3 cents, the net cost being 5 or 6 cents. The school canteens are administered by the commission of school banks.

Lyons.—Food is furnished by the school canteens, which are under the direction of the municipal authorities. These canteens furnish meals for tickets, which are supplied gratis to needy children and sold at 3 cents each to those who can afford to pay for them.

Lille.—The city only subsidizes the school bank. Some societies have organized canteens for primary schools.

Roubaix.—The distribution of food and clothing is made by the school bank. The pupils of the primary schools receive no food yet, but will soon participate in the distribution.

Marseilles.—The food is distributed in the school canteens, which also sell it at a low price to nonindigent children. Clothing is distributed by the school bank.

GERMANY.

Barmen.—Most of the money for food and clothing for poor children comes from private sources.

SWITZERLAND.

Geneva.—There is no central committee. The first kitchens were established in 1887 by a private society, which superintended the distribution. Owing to the inconvenience of attending to this work—which often required going some distance—and the increase in the work itself, it was finally turned over to independent local committees.

3. Cities where aid is given in part to all the pupils, the indigent alone receiving the other part.

BELGIUM.

Liège.—Gratuitous distribution of food to the children of kindergartens has been going on for more than forty years. All children of these schools can participate in it. Clothing is only given to the needy children who are designated by the head teachers. The city lends the poor children cloaks for the winter, which must be returned at the close of the season. There is besides a distribution of clothing by a society, "Le vestiaire libéral," which distributed 3,558 articles (shoes, trousers, shirts, etc.) in 1893–94 at a cost of $1,900.

In all the preceding cases the distribution requires some formality, such as request, authorization by the committees, etc.

SECONDARY SCHOOLS—RECENT CHANGES IN THE CURRICULUM.

In his report for the triennial period 1891–1893 the minister of public instruction considers the effect of the changes introduced into the public secondary schools of Belgium by a decree of 1888. The matter is an interesting contribution to the general discussions of secondary education now going on in all the leading countries of Europe. This portion of the minister's report is here cited:

ROYAL ATHÉNÉES (SECONDARY SCHOOLS).

During the triennial period 1891–1893 the organization, established by royal decree of the 30th of August, 1888, taking the place of that of the 30th of June, 1881, was applied successively to the fourth, third, and second classes, so that at the end of that period only pupils in ancient and modern humanities of the class of rhetoric were still under the régime of the decree of 1881.[1]

[1] By this order the athénées are now organized in three sections: Section of ancient humanities, including both Greek and Latin; section including Latin only; and the section of modern humanities, having neither Latin nor Greek. There are seven classes in each section, the seventh or lowest being in a sense preparatory; the highest class is the first or rhetoric. The section of modern humanities divides after the fourth class, and has two divisions in each of the following classes—the scientific and the commercial.

The vote on the law of superior instruction, and the decree issued in conformity with the advice of the "Council for the improvement of superior instruction," making Greek compulsory upon students who are destined for medicine, prohibits the division of the Latin section into a scientific section, and a section of natural sciences in any class above the third.

The Latin section includes only students pursuing the mathematical studies necessary for entering special schools. It has not been possible to allow students preparing for medicine to pursue the course of chemistry, which would, however, much facilitate their studies for candidacy in natural sciences.

Condition of studies.—In a general report to the Government the supervisor of intermediate instruction describes the situation as to the progress of studies as follows:

"Although it will not be possible before the close of the school year 1893–94 to estimate the results obtained in the class of rhetoric under the new programme, and to decide if it was well to substitute it for that of 1881, yet it may be said that experience during the last six years justifies favorable expectations.

"If the programme of 1888 does not realize perfection (and what part of the programme of studies may not be criticised with more or less reason?), it has made improvements in several respects, namely: Diminution of the number of obligatory modern languages; change in the number of hours assigned to different studies; branches distributed through a greater number of years; the humanities better divided; Flemish made as important as French; the study of Greek made more serious and connected with only one division of humanities; separation reestablished and made more radical between secondary instruction of the higher degree and that of the lower degree (enseignement moyen de degré supérieur et l'enseignement moyen de degré inférieur)."

Improvement resulting from these different changes is now quite manifest.

Latin.—Although Latin is taught at present for seven years, when it might be learned in five years under the régime of the law of 1881, it is given fewer hours than before—fifty-three instead of fifty-six. The highest maximum for Latin is eight hours a week; in the sixth class it has seven hours, and in the seventh class six hours.

It was found that the twelve hours for Latin which might be assigned to poetry and rhetoric were too many; that it was very difficult for professors to vary exercises sufficiently to hold the students' attention so long. The time and the programme as now existing are more favorable to the study of Latin; however, the results of the "concours" (competitive examination) do not yet allow us to say how great a change has been produced. Yet there is no need of haste in judging the new programme, whose working has been attended by certain difficulties; in effect, without sensibly increasing the personnel, it has been necessary to create two new classes—the seventh and sixth of the ancient humanities.

In the athénées where the seventh and sixth classes were doubled one of the sections has become the section of Latin and the other that of modern humanities. In the other athénées one of the two professors of the seventh and the sixth has been assigned for the instruction in Latin in both classes, the other to French. This arrangement presents the inconvenience of joining, for instruction in French, two classes of different preparation, for whom the course in French should be differently taught. The change in the duties of professors has also proved unfortunate; a professor assigned to a new course necessarily needs time to ascertain how to make his instruction profitable. Furthermore, from the fact that students of the class of rhetoric do not appear to have a more thorough acquaintance with Latin than their schoolmates of the lower classes, it would be rash to conclude that the new programme does not contribute to increase the force of studies.

The last "concours" (competitive examination) showed sensible progress in

translating, yet there is much to gain; the Latin theme (translation into Latin) in the superior class of the athénée is still defective. * * *

Greek.—Before 1888 Greek was taught four years, and its study began in the fourth Latin. Six hours a week were given to Latin and Greek humanities; in Latin humanities, for students who aspired to special schools and a doctorate in physical and mathematical sciences, the study of Greek was obligatory in the fourth and optional in the three higher classes.

In Latin humanities, for students destined for natural sciences and medicine, Greek was obligatory in the fourth and fifth classes and optional in the two higher.

Under the programme of 1888 Greek is taught only in Greek-Latin humanities. The study commences in the fifth class and continues five years at the rate of five hours a week, thus making twenty-five hours instead of twenty-four.

The new programme is more favorable to Greek than the old, because the subject is distributed over five years instead of four, and begins two years after Latin.

In the study of Greek and Latin there has been a question of making trial of the inductive method; but before coming to a decision the Government ordered an examination of the inductive method of Halle in the monthly conferences of the athénées. Opinions were divided, but the unfavorable were the most numerous. Nevertheless, a professor of the athénée has been charged to make trial of that method for two years, with Greek in the fifth and fourth classes.

Results in Greek vary much with different professors. In the athénées, where professors of rhetoric seek to enable students to translate at sight certain authors more or less easy, the result is far from being uniform, and it is to be remarked that if under the old system good professors receiving in the class of rhetoric scholars already well prepared, did not expound to them a complete oration of Demosthenes, nor the Crito of Plato, nor an entire tragedy of Euripides, nevertheless, by numerous extracts, by happy choice of dictated passages for translation, they succeeded in imparting to young men incipient acquaintance with the principal examples of Greek literature.

French.—The programme of 1881 assigned to French twenty-six hours; that of 1888, twenty-eight, distributed as follows: Seven hours in the seventh class, six hours in the sixth, and three in each of the five higher classes, which before that had only two hours a week; this was too little. The authors of the programme supposed that exercise in translation would contribute to the study of French, but that exercise, though done with greatest care, could not do so, nor even serve to impart acquaintance with the principles of literature, and time was lacking for reading and commenting upon authors.

The study of French, therefore, has been reenforced in raising from two to three the hours per week assigned to it in the higher classes.

Before 1888 literary branches were rather neglected, and the useful were in too much favor. There was a sort of apathy in the matter of literature. It was easy to recommend reading at home, but few pupils had the time for that.

To-day the programme is less crowded and literary taste is perceptibly rising. However, it is well to avoid going to an extreme by confining the lower classes exclusively to the literary analysis of French authors.

The study of grammar in these classes is of highest importance, but it is a mistake to make the exercise of reading simply the occasion for grammatical theories. Only the explanations are desirable which serve to elucidate the text. * * *

History and geography.—Under this head the report says that the former programme, being found fully satisfactory, has been continued.

The following brief paragraphs are interesting:

A sensible difference has been shown between results in the two rhetorics. Pupils in that of modern humanities are quite superior to their fellows in ancient. This can be attributed to nothing else than the importance attached to history and geography in examinations for the military schools.

The jury charged with the correction of examinations in history have found that answers made in Flemish were much more correct than those made in French. In many of the latter the precise word is often wanting. That difference arises from the fact that a goodly number of Flemish pupils render their answers in French, when the course has been given in Flemish. * * *

Germanic language.—The programme of 1881 imposed too many languages. Pupils in the fifth class had five, those in the fourth, six. It was too much to exact of children of thirteen and fourteen years, who, with very rare exceptions, can derive but little benefit from such superabundance of school work.

All these languages continue to figure in the programme of 1888, but they have ceased to be compulsory. It might be supposed that the majority of pupils would content themselves with studying obligatory languages, leaving the best endowed to follow optional courses; there has been nothing of this, and the majority would prefer to continue the study of all languages, notwithstanding the futility of their efforts.

In order to prevent mediocre students from wasting their time in such work it has been decided that only those who have obtained 0.6 of the total points allowed for compulsory languages should be permitted to study the optional languages.

In the scientific section the courses of modern languages have an importance which is quite different from that accorded to them in examinations for admission into special schools. The student who presents French needs to have studied but one more language—Flemish, German, English, or Latin; while in the scientific section of the athénées, to be in regular standing, he must have studied two of these languages, and the passage from one class to another is not allowed unless progress in the two other languages besides French is satisfactory.

German.—The general "concours" (examination) justifies the statement that in the athénées instruction in modern language is very thorough. The results have been satisfactory in the two rhetorics, and especially so in the classes under the programme of 1888. These results will be further emphasized hereafter if greater importance is attached to grammar.

At the request of the athénée d'Arlon there has been organized a special "concours" for German. Work presented by contestants has been weak, below that of the ordinary "concours" in that language. The distinctions were nearly all won by German students not belonging to the German region of the country.

English.—Results in the English language have been inferior to those in German.

Mathematics.—In the preceding report the Government put forth some rather important changes in the programme of mathematics, so as to render the study more simple and attractive, especially for students in Greek-Latin humanities, and diminished the number, entirely too large, of those who finish their studies without knowing, so to speak, anything about mathematics, or having only too incomplete acquaintance to derive any benefit from it hereafter.

Important progress has been made in the study of algebra. Instead of devoting numerous lessons to algebraic operations which discourage pupils by their difficulties, professors require students to solve and discuss problems, an exercise particularly well adapted to awaken the intelligence of pupils and stimulate their endeavors.

The change of method met with some opposition, but results obtained by those who unhesitatingly adopted the new methods have led others to leave off old errors and recognize that, for students in the Greco-Latin sections, the study of mathematics is only a means of developing their understanding and has not the purpose of imparting determinate knowledge.

Pupils on leaving the first scientific class continue to succeed in examinations for admission into special schools; the success obtained by them subsequently proves the advantage of an education complete, and of studies reasonably conducted without being limited to matters required for the entrance examination.

Physics and chemistry.—A change has been wrought in the programme of physics with intent to lessen its tension in the third class of modern humanities and in the

second of ancient humanities. That part of light relative to refraction has been carried back to the programme of the second class in the section of modern humanities and to the class of rhetoric in that of ancient humanities.

The requirement for future doctors of medicine, that they should present certificates of studies showing that they have pursued the course in Greek, has obliged these students to stop the study of chemistry, despite the important advantages offered by it for their university studies.

The course of chemistry, not being pursued except by students, always few, of the second and first commercial classes, lost much of its importance at the very time when laboratories were thoroughly organized in the majority of the secondary schools.

Commercial sciences.—The programme of bookkeeping in the fourth class has been divided. One part is now given in the fifth class, occupying one hour a week, the rest in the fourth, with two hours a week. The time devoted to that study remains the same. The division was made in the hope that pupils destined for scientific studies would continue in the fourth class the study of accounts begun in the fifth, so that thus the professor of commerce might not see his course neglected by students.

That hope does not seem to have been realized. In the fifth class all the students follow regularly the course in commerce, which is important for their passage into the fourth; it is not the same in the fourth. Those who are to go into the scientific section know that results obtained in commerce have no influence upon their passage into the third class, where they are to pursue it no further.

It would be of importance, however, to future engineers and directors of workshops to have thorough knowledge of accounting. This would enable them to verify their own books and render them more exact in the management of their business.

Drawing.—Results in the course in drawing vary considerably in different athénées. They depend less on the artistic accomplishment of the professor than upon his pedagogical aptitude and especially the order and discipline which he maintains.

In fine, to obtain regular and continued work on the part of students prizes are bestowed upon the basis of all the marks obtained during the year. At the end of each trimester the professor sends to the prefect the work of the students with his marks.

For students in the scientific section it has been recommended to attach much importance to linear drawing. Examinations in descriptive geography, held during the lessons in drawing, are much more careful than formerly. The correctors of the general examination notice that improvement.

Gymnastics.—Instruction in gymnastics during the triennial period, 1891–1895, remained as it was in the preceding period. Courses are organized in all the establishments of intermediate instruction, and in the majority of them half-hour lessons are given conformably to ministerial instructions. Nevertheless in several athénées and in a certain number of intermediate schools each lesson lasts a full hour. However, the number of institutions wherein this obtains diminishes from year to year.

The lessons, more often than otherwise, are given after class hours; that is to say, at 11 or half past 11, sometimes at noon, or at 4 o'clock. The consequence is that students who reside at considerable distances from school generally leave without participating in the exercises.

The material required for this exercise, good, or reasonably so, in some establishments, is quite inferior in others. In some of the schools there is no equipment for this work, communal authorities almost always refusing to make expenditures, without which the course can not be given to any advantage. Such conditions discourage both professors and students, and are the cause of much weakness and irregularity.

TECHNICAL AND INDUSTRIAL SCHOOLS OF BELGIUM.

The system of technical and industrial training for which Belgium is somewhat noted is not as a whole under the charge of the minister of public instruction. Three grades or degrees of this instruction are recognized: To the elementary degree pertain the "écoles professionnelles;" to the intermediate grade, the industrial schools; both of these classes are under the minister of industry and labor. The superior degree of technical instruction is comprised in the engineering departments of the universities, which are under the charge of the minister of education. It is not always possible to distinguish between the first two classes of schools, i. e., the "écoles professionnelles" and the industrial schools; indeed, a few schools have both characters. In a report presented before the International Congress on Technical Education (London, 1897), M. Edouard Séve describes these schools as follows:

In general, it may be said that the industrial schools are in session in the evening and on Sunday, and the students are workmen or employees occupied in workshops during the day. The "professional" schools are open every week day and have their own shops, where the pupils are trained in manual work.

As regards their direction and support, the schools of either of the two classes may be public (communal) schools or private (libre). The former are administered by a commission in which communal delegates must form a majority, the latter—that is, the private schools—are administered by representatives of industries affected, or by syndicates formed by the workmen. The expenses of the schools, both the "professional" and the industrial, are borne by the State, the province, the commune, and by private persons. Generally the State bears one-third of the expense (exclusive of rents and the receipts from day pupils) for the industrial schools and two-thirds for the "professional," whose expenses are the heavier.

The programmes of the schools vary according to the locality, but they all have a common base, which comprises drawing, mathematics, geometry, elements of physics and of mechanics, hygiene, and industrial economics. Each school has its special practical course appropriate to the industry of the locality. In this course drawing plays an important part, developing according to the demands of the technical arts. Further particulars respecting the professional schools (écoles professionnelles) are comprised in a paper on technical instruction and private initiative in Belgium, presented before the same congress by Oscar Pyfferoen, doctor of laws and doctor of political and administrative science and professor at the University of Ghent.

Écoles professionnelles.—The expression professional applied to schools which give instruction in special manual arts is misleading in its English form, because the term has so long been applied to schools of a very different character. Its meaning as applied to technical schools

in Belgium and also in France is made clear by Professor Pyfferoen by the enumeration of the special trades for which their training prepares. These are tailoring, shoemaking, painting, carpentering, upholstering, etc. In England such schools are classed indiscriminately as technical and as trade schools. Professor Pyfferoen notes at the outset that in Belgium the State took the initiative in the establishment of these schools, and he contrasts this with the course pursued in England and in Germany.

In Germany corporations generally take the initiative in this work. After the value and utility of the schools are assured, the State may come to their aid with small subsidies. In England the polytechnics and higher technical schools have been established almost entirely through the efforts of private individuals and with the aid of funds subscribed by public-spirited citizens. In Belgium the tendency has been to depend upon the State for provision of this kind. As a consequence the number of schools has not multiplied heretofore in proportion to the local requirements, the difficulties in this respect being greater than are experienced in countries where local effort is the main dependence. Thus for a long time Belgium had only one or two technical (professional) schools for workers in wood and in iron, notably those at Ghent and at Tournay, a few technical courses in industrial schools, a few workshops in the country for workers in textiles, and in Hainaut workshops for apprentices in stonecutting.

The reluctance of artisans and manufacturers to establish schools pertaining to their respective industries is explained by their failing to comprehend the value of the training and their unwillingness to bear the initial expense, which is considerable. Those who best understand the importance of the training are themselves too old to profit by it and show little disposition to make provision for others.

Development of private initiative.—Within a few years the tendency in this respect has changed somewhat. The Government itself, and especially M. Nyssens, the minister of industry and labor, encourages private initiative and strives to excite it by holding out the hope of State aid. As a consequence of these efforts technical schools have multiplied within a few years, and the State subsidies for these have been increased, reaching in 1898 the sum of $170,000, most of which was applied to schools started by private effort.

Private initiative is exercised in three or four forms:

(1) In many districts groups of artisans or workmen form syndicates or associations for the purpose of establishing trade schools (écoles de métiers) and solicit subsidies from the State, the communes, or the provinces. They themselves bear a very small part of the financial charge. Such was the origin of the schools for tailors at Brussels and Liège, schools for tapestry workers, clockmakers, jewelers, and hair dressers at Brussels; of armorers at Liège, and the schools for brewers at Ghent.

By the manner of their origin these various schools are entirely separate from each other. Nowhere in Belgium are found polytechnics like those of England, where all this instruction is concentrated under one direction. As a rule these technical or trade schools of Belgium are day schools equipped with workshops, and have a systematized course extending over two or three years. They are intended to take the actual place of apprenticeship and to turn out complete workmen. From these conditions also it becomes necessary to pay the pupils for coming to the schools, otherwise the parents refuse to send their sons for training, preferring to put them at once into the shop of an employer. Even with the plan of paying pupils for attending, the remuneration is so small that many parents will not sacrifice the chance of higher wages and allow their sons to take the time for training.

The men also who make their living by working at the small trades oppose the day trade schools, which being free from commercial competition can sell their products at such prices as they may command. Professor Pyfferoen suggests as a remedy for these apparent evils that the sessions of the schools should be held in the evening, which would enable those who are working to have the benefit of the training while they are earning wages, and also that the workshops of the schools should be used simply to supplement the theoretic teaching and not to make goods for the market. The advantages of this plan are seen from the school for printers at Brussels, which is an evening school open only to those who are already working at the trade. On the other hand, a serious crisis was provoked by the opening of a day school of metallurgy. The young apprentices from this school, passing forth into the workshops, crowded out experienced workmen and excited the jealousy of their fellow laborers. The consequence was a strike, which had a disastrous effect on the industry.

(2) Another type of technical schools due to private initiative, and one for which Belgium is specially noted, is found in schools established by the religious orders. The most important schools of this class are the academies of drawing and the St. Luke Technical Schools (écoles professionelles St. Luc), directed by the Christian Brothers. The majority of the St. Luke schools confine themselves to the trades, for which a knowledge of drawing is the chief requisite; some of them, however, go farther and include workshop practice. Until recently these schools have had no aid from the State.

The schools of St. Luke are for day pupils exclusively. But there are numerous orphanages and boarding schools maintained by other religious orders in which technical training finds a place. Such are the schools of the Salesian priests at Liège and of the Brothers of Our Lady of Lourdes at Oostacker and Maltebrugge, which have technical departments, to which day scholars as well as boarders are admitted. The Brothers in charge of the schools take orders for work, but the pupils receive no money for their work. They are, however, lodged, fed, and

clothed at the expense of the establishment. The period of apprenticeship is from five to six years.

According to Professor Pyfferoen the principal objections to the system of these schools is the length of the period of training under conditions unlike those actually affecting the trades for which the pupils are preparing and the absence of effective stimulus in their daily routine. Complaint is also made that these establishments compete unfairly with private industries. This is not a legitimate objection to the training itself, but simply to the work as managed by the religious orders. Corresponding to the schools for boys maintained by the Brothers are the "ouvroirs" for young girls. These are schools maintained generally by religious sisterhoods, but in some cases by private individuals, where young women are trained for the manual arts which are open to them, such as the cutting and making of garments, plain sewing, and embroidery. In the same category as regards their purpose are the schools of domestic art and economy, which exist in all the cities and many of the rural communes of Belgium. They are attached generally to the elementary school, whether public or private, and are often under the patronage of women of noble rank, and in some cases even of members of the Royal family.

(3) The demand for commercial education has given rise to a third form of private initiative in the establishment of technical schools. The Commercial School of Antwerp (Institut Supérieur de Commerce d'Anvers), which has existed for a long time, is a State school. Recently several similar schools have been founded by private effort. These have been established either by church authorities or private associations. An example of the former is found at Louvière. Here a church college has annexed a section of commercial studies which bids fair to surpass even the school at Antwerp. The work of associations is illustrated by the Cercle Polyglotte of Liège. It comprises 500 members, who pay each a small annual fee. The fund thus secured enables the society to maintain evening schools, where, for a small tuition fee, young men may fit themselves for commercial business. It seldom happens in Belgium that the great manufacturers show the disposition to promote technical training by such princely gifts as are freely subscribed by English manufacturers for the foundation of technical schools.

In this respect, France also greatly surpasses Belgium. At Roubaix and at Tourcoing notable schools of spinning, weaving, and dyeing are maintained without public subventions from any source. The only example of this sort in Belgium is that of Verviers, where subscriptions running up into the hundred thousand francs have been secured for technical schools.

In concluding his survey, Professor Pyfferoen says:

> If in Belgium private initiative has varied developments, it is because of the liberal character of our institutions and the assistance afforded by the public authorities. As yet, there is no settled legislation respecting technical instruction in its three

degrees. So far the experiments have been empirical in their character. It seems that it would be desirable to apply to this department the principles adopted for primary instruction, namely, public subsidies for private schools and at the same time the maintenance of public schools at the cost of the State, the provinces, and the communes, which should serve as models to the private establishments or fill the gaps left by private efforts.

The hope is also expressed by the author that the policy of giving civil personality to private technical schools may soon be adopted, so that the schools may have the right to receive, to part with, and to manage their own property. Until they have such legal recognition, their existence and future are insecure. The example of England is quoted where the administration of such schools by trust committees has proved eminently successful.

Superior technical school.—What has been called the superior or higher degree of technical instruction in Belgium is comprised in schools annexed to the universities, namely, schools of art and manufactures, mining schools, and schools of civil engineering. Two of the four universities—the University of Liège and the University of Ghent—are State universities; the other two—Brussels and Louvain—are private foundations. Each of these universities comprises the four faculties of philosophy and letters, law, science, and medicine. The University of Louvain possesses also a faculty of theology under the surveillance of the Catholic Episcopate of Belgium.

A number of technical schools have been grouped around the universities as adjuncts of the faculties of science.

All the universities possess schools of engineering and of architecture, but only those belonging to the two State universities have the privilege of preparing engineers for the service of the State. The engineering school of Liège recruits the mining service, and that of Ghent prepares engineers for the construction of public roads and bridges.

The technical school of the University of Liège, founded in 1825, comprises four sections—the school of mines, the school of arts and manufactures, the section of mechanics, and the section of electricity. These four sections lead respectively to the diploma of honorary engineer or of civil engineer of mines; of civil engineer of arts and manufactures; of mechanical engineer (d'ingénieur civil mécanicien); of electrical engineer. The institution is admirably equipped with apparatus, laboratories, etc.; it has an ample teaching force, and the instruction is supplemented by expeditions to the mines and the manufactories in which the province of Liège abounds.

The special school of civil engineering attached to the University of Ghent comprises an inferior section for the training of assistant engineers and a superior division for the training of engineers. This university possesses also a school of arts and manufactures for young men who seek the diploma of industrial engineer. The school comprises in its programme the branches necessary for the application of the sciences to the general processes of industry and to particular manufactures. It

consists of a preparatory division having a two years' course, and a division for practical work called the special school of arts and manufactures, in which the course is also two years. This division is open to students from all countries.

The Polytechnic School of the University of Brussels, founded in 1873, is intended to teach the application of the sciences to the arts and to industry. It comprises the following sections: Mining, civil, and mechanical engineering, metallurgy, industrial chemistry, and architecture. The University of Louvain has also annexed to it a special school of arts and manufactures, of civil and mining engineering, and a superior school of agriculture.

The importance of this provision for higher technical training is indicated by the large proportion of students availing themselves of the same. The official statistics for 1895 show the following distribution of university students for that year:

University.	Total number of students.	Number in the special schools.	
		Engineering.	Arts and manufactures.
Ghent	640	145	71
Liège	1,248	a222	
Louvain	1,636	433	
Brussels	1,311	139	

a By the law of June 30, 1893, the technical schools of Liège are grouped together under the title of technical faculty.

The total number of students in the four universities was 4,835. Of these 937 were enrolled in the faculties of science and 1,010 were in the technical faculty of Liège and the special schools of the remaining universities.

Auxiliary institutions.—The development of this special training in the industrial arts is promoted also by the Royal Academy of Science, of Letters, and of Fine Arts, which has its seat at Brussels, and is under the immediate patronage of the King.

The discussion of questions bearing upon technical instruction is encouraged by prizes from the funds of this academy.

Besides the universities with their special schools, there are several other establishments in Belgium which are included among those of higher grade and which give combined theoretic and practical training. Among these are included the Schools of Art and Music. The principal institution of the former class is the Royal Academy of Fine Arts founded at Antwerp in 1663. It is administered by the Government and the city council and consists of two divisions, the Superior Institute and the Academy proper; the former is designed to give complete training in the graphic and plastic arts. The courses of the latter include elementary training in drawing and its applications, and the preparatory stages of the graphic and plastic arts. The Royal Academy of Fine

Arts and School of Decorative Arts of Brussels is similar in scope to the Antwerp school. In the same category are included the conservatories of music for which Belgium is noted.

The enrollment in the royal conservatories was as follows at the date of the latest report:

Conservatory.	Number of students, 1895.	
	Men.	Women.
Brussels	436	329
Liège	498	238
Ghent	278	280

There are also about 225 schools of music, of which 50 are communal establishments receiving subsidies from the State. These had at the date of the last report 11,567 pupils, of whom 6,642 were men and 4,925 women.

The Government and local authorities stimulate the culture of national taste and artistic skill by grants in aid of the schools and the organization of musical festivals and expositions of fine arts, for which liberal appropriations are made.

The State gives also great encouragement to instruction in agriculture and commerce.

The State Agricultural Institute at Gembloux, in the province of Namur, was founded by the Government in 1865. It includes an experimental station and a finely equipped laboratory. The diploma of agricultural engineer is bestowed upon the students who successfully pass examination before a State board. Those who pass with special distinction receive subsidies to enable them to continue their studies and researches in foreign countries.

The Superior Institute of Commerce at Antwerp completes the list of special schools endowed by the State. By a law of 1883 the diploma of this institute is placed on an equality with the university diplomas.

The following tables summarize the principal statistics of the several classes of special schools here considered:

SPECIAL SCHOOLS.

Table showing the number of subsidized institutions, number of professors, number of pupils, number of diplomas delivered, and subsidies given in 1895–96.

Name of institution.	1885–86.				1895–96.				Subsidies for 1895–96.				
	Number subsidized by the State.	Number of directors and professors.	Number of students.	Number of diplomas delivered.	Number subsidized by the State.	Number of directors and professors.	Number of students.	Number of diplomas delivered.	From the State.	From the provinces.	From the communes.	Other sources.	Total.
Higher Commercial Institute of Commerce of Antwerp	1	16	137	37	1	16	230	57	$8,655	.....	$2,885	$10,279	$21,819
Provincial School of Industry and of Mines of Hainaut (at Mons)	1	13	58	15	1	17	215	30	4,263	$6,902	2,041	2,600	15,771
Superior Textile School (Verviers)	....	....	....	....	1	9	17	....	.....	.....	.....	.....	.....
School for brewers (rue de Bruger, Ghent)	....	....	....	....	1	12	57	26	1,165	150	200	4,852	6,368
School for brewers (Institut St. Liévin, Ghent)	....	....	....	....	1	6	19	6	500	.....	.....	950	1,450
School for brewers (Institut St. Joseph, La Louvière)	....	....	....	....	1	6	17	6	500	.....	.....	760	1,260
Total	2	29	195	52	6	66	555	125	15,083	7,052	5,126	19,441	46,668

INDUSTRIAL, TECHNICAL, AND HOUSEWIFERY SCHOOLS.

Table showing the number of subsidized institutions, number of teachers, number of pupils, and amount of subsidies accorded in 1895–96.

Name of institution.	1885–86.			1895–96.			Subsidies for 1895–96.				
	Number subsidized by the State.	Number of directors and professors.	Number of students.	Number subsidized by the State.	Number of directors and teachers.	Number of students.	From the State.	From the provinces.	From the communes.	Other sources.	Total.
Technical instruction for young girls	....	65	866	26	242	2,004	$20,060	$3,832	$23,551	$26,613	$74,058
Apprenticeship schools for young girls and for boys	46	47	926	55	60	1,158	8,066	2,574	3,711	3,727	18,073
Technical schools for boys	7	33	459	23	144	3,301	10,610	2,440	7,397	14,645	35,099
Special schools	2	29	195	6	66	555	15,047	7,052	5,126	19,442	46,669
Industrial schools	32	329	9,478	40	466	13,015	50,116	24,860	48,485	8,091	131,553
Housewifery	2	4	90	225	450	9,539	18,427	5,214	11,801	14,730	50,173
Total	92	507	12,014	375	1,428	29,572	122,332	45,972	100,071	87,248	355,630

CHAPTER IV.

EDUCATION IN CENTRAL EUROPE.

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I. PROGRESS OF THE ELEMENTARY SCHOOLS OF PRUSSIA IN TEN YEARS—1886-1896.

TOPICAL OUTLINE.—General remarks.—Schools of German-speaking countries.—Number of schools, pupils, and teachers.—Pay of teachers.—Expenditures for elementary schools.—Overcrowded schoolrooms.—Summary of statistics.

GENERAL REMARKS.

The German Empire, of which the Kingdom of Prussia forms a large part (having about three-fifths of the population), has of late years made such astonishingly rapid strides toward industrial and commercial supremacy in Europe that thinking people of other nations have begun to inquire into the causes of this success. Various reasons are stated, to wit: The unification of Germany and the revival of national feeling, aided by centralized legislative and executive efforts in behalf of industry and inland commerce; tireless exertion of the Imperial Government and shipping corporations in Hamburg and Bremen for the purpose of extending German commerce abroad; the vivifying influence of scientific work performed by the old universities and secondary schools, many of which are centuries old; the establish-

ment and generous maintenance of a great variety of special schools—art, polytechnic, industrial, and trade schools—which prepare men and women for intelligent labor; the aid given to labor from the State in the form of pensions and accident insurance, which secures increased income and better care for skilled labor. All these and several other reasons have combined to give an impetus to efforts in every domain of human exertion such as inevitably result in increased wealth, comfort, and national strength.

But it seems that the secret lies deeper. Governmental efforts, however vigorous and well directed, and private enterprise, however farsighted and prudently managed, can not change the entire aspect of a nation in so short a period, as we find it changed in Germany within the last twenty years. The nation must have gone through a long preparation for such a change, and this is indeed true in the case of Germany. English and American students of public affairs confirm it. The English consul, Mr. Powell, recently forwarded to the foreign office in London an exceedingly interesting report on commercial education in Germany, in which he makes it quite apparent—

how widely and energetically the German nation is aroused to the necessity of commercial education as an important factor in their newly developed competition with other trading nations, and especially is it noteworthy to remark how the study of modern languages is being encouraged and fostered by the nation at large.

But he admits that the success of these special schools would not be possible if there were not a broad and secure foundation laid for them in general education and culture. He says:

The great success which has attended German trade since 1873, but more especially during the last ten years, has been frequently attributed in Great Britain to the superiority of commercial and technical education in Germany. This is not the view taken by those best able to judge of the facts by close acquaintance with them in Germany. They are rather of the opinion that this success is due less to superior commercial education than to the high state of general education that Germany has enjoyed for many years, and which was formerly lacking, and is even now lacking in several essential points, in Great Britain.

The London Schoolmaster, commenting upon the report, adds to the emphasis of the foregoing quotation by saying:

Now what does this really mean? Does it not mean that, given a thoroughly well-grounded and efficient system of primary education, you can with rapidity and effectiveness develop from it technical, commercial, or any other branches of specialized higher education? So far so good. The result is exactly what might have been expected. But suppose your foundation of elementary education is not thorough. Suppose the children leave the primary school too early to have permanently impressed upon them the fundamentals of a general education. Suppose money is lacking and teaching power inefficient and insufficient in the primary school. What then? Will not much of our expenditures upon commercial and technical education of necessity be wasted? To us this has for a long time past been a matter of firm conviction; and we are glad to have Consul Powell's support for our own and Sir John Gorst's emphatic opinion, as stated to the commercial

education conference at the London Guildhall on July 8 last, that "we can not have high commercial education unless we have a solid basis of elementary education upon which to build."

Waking up in a characteristic panic, we are now lavishing money right and left on technical and commercial education. This is, of course, zeal of the most praiseworthy character. For, as Sir John Gorst told the people of Langton a year ago, "There is no doubt that unless we intend the English people to become the hewers of wood and the drawers of water for the world, we must make them as well prepared for the work they have to do as are foreign workmen." But it can not be too often or too emphatically insisted, that much of the newly awakened enthusiasm on behalf of technical and commercial education must necessarily be followed by barren and disappointing results, unless we go to work promptly and thoroughly to put the foundations of the whole fabric of national education upon a solid and effective basis.

The fact, then, that in Germany elementary education has been general, compulsory, and, to a large extent also, gratuitous for more than one hundred and fifty years, is recognized to be an essential factor in the recent political, industrial, and commercial successes of the nation. But it is also clearly seen that any system of special schools, secondary and higher, must rely upon a thorough elementary education. It is not enough to have a few thousand highly gifted and trained men to plan industrial and commercial campaigns; there must be hundreds of thousands of intelligent persons who can comprehend and execute these plans and act as intelligent interpreters and skilled laborers. They can be the product of thorough elementary schools only. Nothing short of a general uplifting of the mass of people will raise a nation to a higher level of existence and importance.

This point has been discussed before (see Report of the Com'r of Ed. for 1888-89, p. xxvii):

THE SCHOOLS OF GERMAN-SPEAKING COUNTRIES.

Although all the nations of Europe are largely of Teutonic stock, yet there have developed wide departures from the parent stock which has remained at home in Germany. In a certain sense Germany furnishes a deep contrast to England in its mental characteristics. The modern German, like the ancient Greek, has theoretic tendencies and art tendencies, while the Englishman, like the Roman, has tendencies to will power and practical experiment. While it would never do to say that the Germans lack will or that the English lack intellect, yet to understand their difference in character it is necessary to say that there is a very different emphasis placed on the two sides of mental power by the two races. The tendency of the German is to think before he acts, while the tendency of the Anglo-Saxon is to act before he thinks. The English way is to learn through doing, and to use its will rather than its intellect in the attainment of knowledge. It takes pride in making an inventory of the facts as it finds them where they actually exist—it prizes real experience and original observation, and makes small account of reflections and reasonings and a priori truths. Its national form of mental activity is empiricism. It knows the world as it is and not as it ought to be or might be. But the German, on the other hand, makes up his mind first and acts afterwards. This, at least, is his tendency. His mental habit is to seek out

all that is known on a given question and review it carefully; then he proceeds to verify this by comparing it with an actual inventory made by himself. He settles the object to be attained and the proper means to be used, and then at last acts with great effect in accordance with his deliberately formed plans.

Of course there are exceptions. This is not a fixed and absolute difference between the two national characters. But it is the distinction that we must make and keep in view if we would understand the two trends and explain the methods followed and the results obtained by the two peoples. The German loves system quite as much as the Frenchman, only the latter looks more to the realization of his central unity into the art forms of regularity and symmetry, while the former looks more to dynamic features and wishes to make sure the connections between the highest and lowest links of power and authority. While the English people lay great stress on immemorial usages and privileges that have grown up by compromises in the past, the German wishes above all to have a consistent and reasonable system. It is more important to him that the government shall be reasonable than that there shall be individual freedom to act out one's desires and caprices.

From the German idiosyncrasy it is evident why they have invented gunpowder and the art of printing rather than the steam engine and the telegraph; why they have labored most efficiently in the lines of comparative science rather than in the inventory of isolated data. They wish to see each branch of knowledge in the light of all others. They have created comparative philology, that reveals to us the profoundest traits of mind as exhibited in the structure of language. They have created the science of comparative history, giving us an insight into the sum total of the striving of each nation that has flourished on the earth. They have reenforced comparative history by comparative studies in religion, art, jurisprudence, and psychology. Each new comparative study gives a new critical point of view from which to confirm or reject what has before been held. In this way the German scientific industry tends to reach a stable result in the science of nature and also especially in the science of man.

But this discovery of the trends of nature and human history brings the intellect into a condition where it decides upon the practical questions of the day and leads to action. Having summed up the case in view of all the provinces in any way related to it, the will may now act with the most intense conviction. The present generation has seen a new kind of national power rise into the world history out of Germany. Goethe said in 1792, after the battle of Valmy, where he saw a French army representing the people and officered by the people defeat the army representing the nobility and officered by them: "From this place, and from this day forth, commences a new era in the world's history." Democracy would from that time be a power to be reckoned with. The new German Empire is founded on science and means many things of the utmost importance to future civilization. Comparative science brings together all the kindred provinces and discovers the net result. It attacks problems of the utmost complexity, none more so than that of war with surrounding nations. It delivers its decisions to the executive power of the nation and preparations are made in view of all the contingencies. An absolutely accurate survey of all strategic points, giving with precision every stone fence and every bridge and ford, the whole nation trained to military service, the means of transportation prepared so that the whole power of the nation may be concentrated without fail in the least possible time on any point of the frontier—these things belong to science. The intellect converts itself into will power by settling in advance all problems that may arise, so that in the field nothing can occur that will surprise the commander. At every point he will be stronger than his enemy.

The practical outcome of the rise of Germany to a new world power is the

necessity of the universal education of the people. Germany, with its principle of the supremacy of conscious intelligence and the reenforcement of the will power by comparative science, had all along consistently moved toward an efficient system of education. The powers of the individual may be indefinitely increased by education. An educated nation is far more powerful than an uneducated nation of equal population and wealth. Education of all the people in schools renders possible great strategic combinations in war, commerce, and industry.

It is this principle which distinguishes the modern German people. The Greeks were great in plastic art and literature and philosophy. The German is equally great in music and philosophy. His philosophy is based on psychology where the Greek philosophy took the form of ontology. The German turns science into philosophy by making it comparative, and thus completing a total survey of an entire province.

Feeling this national principle at work in his soul, he finds popular education the most natural of all human interests to him. Studying the comparative aspects of science, he becomes observant of methods. He neglects this fact and that fact to look at the process by which they arrived. Nowhere else is there so much exercise for this quality of observation which sees method as in pedagogy. Upon the study of method depends the arrangement of the course of study and the development from one grade of school work into the next. Upon the study of method depends the art of teaching and the discipline and management of the school. * * *

While it is demonstrated, thus, that a general elementary education of the people is the primary cause of Germany's present success as a producing and trading nation, as well as of its former success as a scientific nation, it is of interest to see whether its system of elementary education is making the same progress which other departments of exertion make. This might be done by comparing its school system as it is now with that of ten years ago. For the Empire, such a comparison is impossible, since each State in Germany manages its own educational affairs; hence, no perfect uniformity is aimed at, neither in purpose nor in nomenclature, but by taking the statistics of the leading State, Prussia (31,855,123 inhabitants in 1895), we may present a comparison which in its results will not be far from representing the conditions of the whole empire, the 26 States being somewhat homogeneous in their management of elementary schools. A recent governmental publication gives the desired data. It is entitled "Das gesammte niedere Schulwesen im preussischen Staate im Jahre 1896," being volume 151 of "Preussische Statistik."

I.—Schools, Pupils, and Teachers.

It has been the custom in Prussia to take a statistical inventory of the public elementary schools every five years. Previous to the World's Fair in Chicago extensive statistics were published by the royal school authorities, based on the school census of 1891. Recently a new publication has been issued, based on a thorough investigation in 1896. This offers an opportunity to compare the numbers of the

last three statistical statements—1886, 1891, and 1896—covering a period of ten years.

The results of the school census of 1896, recently published, give an extensive and very interesting picture of the entire system of lower schools, including the public and private elementary and the girls' intermediate and advanced schools, as well as the schools for defective classes—blind, deaf and dumb, epileptic, morally unsound, and orphaned children. For the purpose of comparison with other countries, it is particularly the public elementary or common school which will be described here. Unessential details will be omitted, and the statistics of other than public schools will be brought into the focus of observation when occasion offers.

The private elementary schools of Prussia play a very subordinate part in the system. There were in 1886, 248; in 1891, 495, and in 1896 only 404 private elementary schools. Compared with the number of public schools, 34,016, 34,742, and 36,138 for the respective years, they are a vanishing quantity. This holds good also with the number of pupils in private schools, which, as a rule, is much smaller than in an average public school.

The increase in the number of public elementary schools is very noticeable:

Year.	Number of schools in cities.	Number of schools in the country.	Total number.
1886	3,718	30,298	34,016
1891	3,871	30,871	34,742
1896	4,242	31,896	36,138

The comparatively small increase during the first half of the decade (1886–1891) is explained by the corresponding small increase in the school population during these years, which will be discussed later.

The increase in the number of schools has not been quite equal in the separate denominations. The increase in the number of Catholic schools is greater than that of Protestant schools; the number of Jewish schools has decreased, and the increase of undenominational schools is relatively largest. Here are the absolute numbers:

Year.	Protestant.	Catholic.	Jewish.	Undenominational.
1886	23,122	10,061	318	515
1891	23,749	10,154	244	595
1896	24,487	10,725	246	680

Hence, in 1896 of every 100 elementary schools 67.76 were Protestant, 29.68 were Catholic, 0.68 were Jewish, and 1.88 were undenominational schools.

But while this shows an increase in the number of schools, the increase would seem inadequate, at any rate disproportionate to the enormous increase of the population, which was 28,318,470 in 1885; 29,957,367 in 1890, and 31,849,795 in 1895. This apparent discrepancy is lucidly explained by the authorities, as follows: The local school authorities, in cities especially, have generally followed the policy of enlarging the school buildings and placing more classes under one principal than formerly. While on an average the city schools had each 6.28 classes in 1886, they showed an average of 7.11 classes in 1896. This same policy, which was evidently dictated by economical considerations, is noticeable to a certain degree in the village and rural schools. This is seen from the fact that the average number of class rooms in rural schools in 1886 was 1.71, and in 1896, 1.94. But since this expansion was undertaken partly to relieve overcrowded classes, the number of pupils does not show the ratio of increase which is shown in the number of class rooms to each school. On an average a public elementary school in Prussia had 142 children in 1886, and 145 in 1896. In cities the averages were 404 in 1886 and 418 in 1896, while in rural districts the averages were 110 in 1886 and 109 in 1896. The last-mentioned number is conclusive evidence that the overcrowded condition of class rooms has begun to be relieved. The following table makes this plainer. The average number of school children per class room was, in—

Year.	Cities.	Country.	Total.
1886	64	64	64
1891	61	59	59.5
1895	59	56	57

The improvement in this particular feature was greater during the first five years than during the later five years, which would seem to indicate an unequal provision on the part of the authorities in building schoolhouses. But that would be judging erroneously, for the true reason is the disproportionate increase in the school population during the second half of the decade under discussion. The census counted—

Year.	Children between 6-14.	Population.	Ratio.
			Per cent.
1886	5,225,891	28,318,470	18.4
1891	5,269,310	29,957,367	17.7
1896	5,602,093	31,849,795	18

The increase from 1885 to 1890 was 73,419, or 1.40 per cent, while from 1890 to 1895 it was 302,783, or 5.71 per cent. An explanation of

this inequality is very difficult, especially since the rate per cent of increase in the population is different, to wit: 5.78 per cent during 1885–1890, and 6.34 per cent during 1890–1895. The chief cause may be found in the relatively unfavorable industrial and agricultural conditions during the period preceding the lustrum of 1885–1890, which resulted in a large emigration. The official reports do not enter into a discussion of this question.

Aside from these particulars of the census, there is one fact which is very satisfactory to friends of popular education; it is that the percentage of children of school age attending the public school is steadily increasing. While in 1886 as many as 93.44 per cent attended these schools, the percentage rose to 93.90 in 1891, and to 94.51 in 1896. If the number of children are deducted who in 1896 were still in elementary schools, though having passed their fourteenth year of age, we find that 227,253, or 4.06 per cent, were attending secondary schools, which begin as a rule with the ninth or tenth year of life.

Particularly interesting to us in the United States is the chapter dealing with the mother tongue of the children of school age in Prussia. We confine ourselves to the public elementary schools in this summary, and merely state that the percentage of non-German-speaking children in schools beyond the elementary course is very much smaller.

Language spoken.	1886.		1891.		1896.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
German only	4,188,857	86.58	4,268,909	86.83	4,518,645	86.29
Polish only	509,315	10.35	491,142	9.99	553,252	10.56
Polish and German	70,868	1.46	76,288	1.55	87,239	1.67
Lithuanian only	12,752	.26	12,625	.26	11,534	.22
Lithuanian and German	8,372	.17	6,863	.14	8,570	.16
Wendish	9,961	.21	10,488	.21	9,722	.19
Wendish and German	4,419	.09	3,060	.06	2,929	.06
Other Slavic	8,760	.18	11,042	.23	12,599	.24
Danish	24,088	.50	22,735	.46	21,971	.42

Other non-German elements mentioned in the official report may be here omitted. The Polish population is chiefly found in the eastern provinces, Posen and East and West Prussia. In Westphalia a large mining colony is found to consist of Polish inhabitants, 4,490 children in school speaking both Polish and German. The number of children speaking only Polish has slightly increased within ten years, but the report points to the fact that this increase is almost exclusively found in agricultural districts, not in cities. The percentage of children in Alsace-Lorraine speaking exclusively French or French and German is not stated here because, though these provinces form an imperial crownland and are under the imperial government, they do not form part of the Kingdom of Prussia.

The number of teachers has very materially increased during the

ten years referred to. Especially large is the increase of the number of women teachers. The following table makes this clear:

Year.	Men.		Women.	
	Number.	Per cent.	Number.	Per cent.
1886	57,902	89.42	6,848	10.58
1891	62,272	88.07	8,459	11.93
1896	68,688	86.99	10,271	13.01

In cities the per cent of men decreased from 81.73 to 77.87, in the country from 93.50 to 92.50, while the per cent of women employed in cities rose from 18.27 to 22.13 and in the country from 6.50 to 7.50. In the aggregate the number of women increased 50 per cent during the decade 1886–1896—that is, in the cities 60.5 per cent and in the country 34.3 per cent, while the whole number of male teachers increased only 18.6 per cent—that is, 26.2 per cent in the cities and 15.1 per cent in the country.

Of all the male teachers in the public elementary schools in the year 1886 there were 70.64 per cent Protestants, 28.58 per cent Catholics, 0.04 per cent other Christians, and 0.74 per cent Hebrews. In 1896 the proportion of Protestant teachers had slightly decreased, to wit, to 70.40 per cent; that of Catholics increased to 29.9 per cent, while the proportion of other Christian teachers decreased to 0.01 per cent and that of Hebrew teachers to 0.50 per cent. The proportion of female teachers of the Protestant faith was 37.25 per cent in 1886; Catholic, 61.81 per cent; other Christian, 0.16 per cent, and Hebrew, 0.78 per cent. These proportions changed materially in ten years: Protestant, 44.41 per cent; Catholic, 54.98 per cent; other Christian, 0.01 per cent, and Hebrew, 0.60 per cent. These figures plainly indicate that the number of female teachers in Protestant schools is increasing. For the purpose of making these facts more distinct, they may be tabulated as follows:

Teachers in Prussian elementary schools.

MALE.

Year.	Protestant.	Catholic.	Other Christian.	Hebrew.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
1886	70.64	28.58	0.04	0.74
1896	70.40	29.09	.01	.50

FEMALE.

1886	37.25	61.81	0.16	0.78
1896	44.41	54.98	.01	.60

The question whether a sufficient number of teachers is provided for these schools may be treated from different points of view. One may take the average number of children to each teacher or the number of teachers compared with the number of class rooms or

grades. If the latter be taken as a standard a very unsatisfactory result is obtained.

Number of teachers to every 100 school classes or grades.

Year.	Cities.	Country.	Total.
1886	96	82	86
1891	99	81	87
1896	99	80	88

These figures prove that there is a great number of schools in which half-day classes are taught for want of teachers. This expedient is frequently resorted to in rural districts. If teachers were provided for all the grades the entire body of elementary teachers in Prussia would need to be increased one-sixth of its present number, or about 17 per cent. But if all the overcrowded classes were reduced to normal number, by increasing the number of classes, there would be required still 7,000 more teachers. The total body of teachers would have to be augmented by 20,000, for in 1896 there were still 17,165 overcrowded classes containing 1,390,525 children. If Professor Rehmke's demand be complied with—namely, to reduce the number of pupils per teacher to 30—the present staff would need an increase of 100,000 teachers. This seems Utopian in Prussia, but if the conditions of fifty years ago are considered, when almost uniformly 150 pupils were taught by one teacher, the case does not look hopeless.

II.—Teachers' Salaries.

The official report states the sums paid for salaries of public elementary teachers in the three years referred to, but it fails to state what amounts have been paid for special teachers, such as instructors of handiwork, and for assistants not employed for a specific purpose. It merely quotes the sums paid to permanently engaged teachers; that is, regular, not special, teachers, to wit:

Year.	Men.	Women.	Total.
1886	$17,799,599	$1,895,183	$19,694,782
1891	21,767,900	2,366,480	24,134,360
1896	26,050,528	3,135,888	29,186,416

The average income of the teachers, which includes either free dwelling and fuel or an equivalent in money, has increased considerably, which is seen from the following summaries—(A) for men, (B) for women:

A.

Year.	In cities.	In the country.	Average in State.
1886	$389.13	$270.13	$307.50
1891	431.26	300.84	344.15
1896	482.90	322.77	386.75

B.

Year.	In cities.	In the country.	Average in State.
1886	$286.98	$225.15	$263.70
1891	300.60	242.76	278.70
1896	331.30	269.41	304.16

To judge these numbers correctly it is to be considered that equivalents for rent and fuel are calculated at higher rates in 1896 than in 1886 and that the average age of the teachers is found to be higher also; hence that the apparent increase is not in every case an actual one. Furthermore, the population's wealth has risen during the same period. Thus, for instance, the average income in the Kingdom of Saxony rose between 1886 and 1896 from a per capita of $78.54 to $111.86, and in Prussia it rose from $83.30 in 1893 to $92.82 in 1897. Whether the salaries of teachers have increased in the same ratio is questionable.

The value of rent and fuel per annum, either paid in kind or equivalent, has been calculated at—

Year.	In cities.	In the country.	Average in State.
1886	$66.64	$40.22	$49.50
1891	81.16	45.00	58.31
1896	82.59	48.31	61.17

It is plain that the increase in the latter has not been proportional to that of the former five years. The report reveals the fact that the number of teachers provided with official dwelling, either in the schoolhouse or in the vicinity, has decreased. While in 1886 there were still 68.36 per cent of the teachers thus provided (to wit, 20.78 per cent in cities and 90.38 per cent in the country), the proportion has decreased to 63.71 per cent in 1896 (to wit, 15.74 per cent in cities and 88.10 per cent in the country).

Another wholesome change is plainly demonstrated by the figures of the report. It is the decrease in the number of teachers who are still obliged to perform service for the church (as church wardens, organists, beadles, sextons, etc.). Their number has decreased during the five years from 1891 to 1896 from 24.40 to 21.50 per cent. In the cities these positions decreased from 9.26 to 7.80 per cent and in the country from 31.93 to 28.46 per cent. The absolute numbers were 15,430 in 1891 and 14,860 in 1896.

There have been vital changes in the salaries paid to elementary teachers, caused by the recent law which regulated salaries upon the principle that a certain fixed salary should be paid by the community and that the State should pay annual increases until a certain maximum be reached. This has resulted in the following average salaries

paid in the following-named fourteen provinces of the Kingdom of Prussia:

Province.	Salaries paid to—*a*					
	Male teachers.			Female teachers.		
	1886.	1891.	1896.	1886.	1891.	1896.
East Prussia	$250.85	$250.60	$290.36	$210.15	$222.77	$235.86
West Prussia	250.85	250.85	298.69	221.15	240.38	261.80
Berlin	565.25	618.09	716.38	346.77	366.04	387.22
Brandenburg	297.74	332.72	363.33	243.95	259.18	282.75
Pomerania	278.94	308.65	322.73	240.62	236.10	276.75
Posen	267.46	293.26	323.52	260.13	252.76	256.32
Silesia	293.63	325.82	349.62	266.80	276.08	300.83
Saxony	303.92	339.63	378.66	235.32	249.90	263.94
Sleswic-Holstein	338.91	379.13	401.98	225.62	230.15	247.76
Hanover	275.84	317.00	348.91	220.31	253.48	262.51
Westphalia	330.34	375.09	417.21	248.00	271.75	303.93
Hesse-Nassau	301.31	359.86	404.17	256.33	284.69	326.30
Rhenish Prussia	352.95	386.46	429.83	260.15	275.32	304.03
Hohenzollern	244.28	302.50	320.82	193.26	222.30	259.43
Average	307.60	343.18	376.75	263.70	278.70	304.31

a The fractions of dollars are occasioned by changing the German marks into American money. A mark is quoted at 23.8 cents.

The foregoing amounts represent the cash salaries of class teachers, not of principals of schools.

They are, however, lower than the salaries paid in this country or in France and England, but the greater purchasing power of money in Germany is to be considered in making comparisons.

III.—Expenses for Public Elementary Schools.

The total expenditures for public elementary schools (so-called Volksschulen) have increased at a greater ratio than the salaries of teachers, owing to the necessity of building and equipping new schools. The following tables plainly show this—(A) contains the total expenditures, (B) the salaries:

A.

Year.	In cities.	In the country.	Total.
1886	$11,947,642	$15,587,066	$27,534,708
1891	14,373,450	19,428,175	33,801,625
1896	19,794,829	24,463,520	44,258,349

B.

1886	$9,316,839	$11,287,943	$20,604,782
1891	10,658,506	13,480,793	24,134,359
1896	12,391,578	15,794,683	28,186,261

To these latter sums, representing the salaries paid, should be added the pay of special teachers, which is not stated in the report, and the pensions paid by the State. The amounts paid in pensions were $742,708 in 1886, and $2,104,695 in 1896.

The incidental expenses increased greatly, as is seen from the following numbers for 1886 and 1896: In cities these expenditures rose from $3,087,548 to $5,474,987, while in the country the increase is still greater, to wit, in 1886 the incidental expenses (chiefly for erection of buildings) were $3,557,511, in 1896 they were $7,002,054. These few numbers show that, while the expenditures for salaries have increased in ten years not quite 50 per cent, the other expenditures have increased nearly 100 per cent.

The foregoing statements are all clear and distinct, but less clearness is found when the report refers to the sources of the income, and this is owing to the involved condition of vested funds, taxes, and other sources of income. There are three distinct factors contributing to the income—(*a*) the State, (*b*) the communities, and (*c*) irreducible funds. The report does not always keep them asunder, hence it is necessary to resort to the expedient of quoting sums to which two of these factors contribute. The following table will speak for itself:

Sources of income.

Received from—	In cities.		In the country.	
	Amount.	Per cent.	Amount.	Per cent.
State's contribution	$3,174,583	16.05	$9,539,360	38.99
Local taxation	13,700,796	69.25	10,481,379	42.85
Irreducible funds	186,770	.94	1,643,770	6.72
State and communities combined	252,235	1.27	409,480	1.67
State, communities, and invested funds combined	2,470,421	12.49	2,389,548	9.77
Total	19,784,835	100	24,463,537	100

These numbers show that the State does not participate in bearing the burdens of maintaining the schools of the cities as liberally as it does in the country. This difference has been considerably increased through the passage of the law regulating the teachers' salaries (March 3, 1897). There are also great inequalities in the State's and the local provision for primary schools in the various parts of the Kingdom. In the eastern provinces the State pays a great deal more for rural schools than for city schools, while in the western provinces the State's quota for rural schools is insignificant.

The burden of school taxation is best stated by giving the per capita of the population. On an average the expenditure for elementary schools is shown in the subjoined statement.

Expenditures per capita of the population.

Year.	In cities.	In the country.	Total.
1886	$1.14	$0.89	$0.98
1891	1.29	1.07	1.16
1896	1.53	1.29	1.39

These figures, though small if measured by our American standard, demonstrate great improvement if compared with the per capita paid in former decades, as the following items will show:

Year.	In cities.	In the country.
1861	$0.50	$0.34
1866	.55	.35
1871	.83	.46

The per capita expenditure during the year 1896 (the year in which the statistics were gathered) in the various provinces of the Kingdom is not uniform, as the following table shows:

Province.	In cities.	In the country.	Total.
East Prussia	$0.99	$1.12	$1.09
West Prussia	1.16	1.23	1.21
Berlin	1.79	.....	1.79
Brandenburg	1.25	1.30	1.28
Pomerania	1.45	1.23	1.34
Posen	1.29	1.21	1.22
Silesia	1.38	.99	1.12
Saxony	1.45	1.31	1.37
Sleswic-Holstein	1.57	2.00	1.78
Hanover	1.67	1.37	1.47
Westphalia	1.74	1.51	1.64
Hesse-Nassau	1.71	1.38	1.46
Rhenish Prussia	1.64	1.38	1.52
Hohenzollern	1.16	1.50	1.40
Total	1.53	1.29	1.39

An essential factor in determining the amount paid for public education is the percentage of children of school age in the community, hence the foregoing figures alone can not serve as a standard measure of comparison. For instance, a number of districts in the provinces of West Prussia and Posen have from 191 to 213 children of school age (6 to 14) in every 1,000 inhabitants, while in the provinces of West Prussia and Brandenburg the percentage ranges from 168 to 183 and 150 to 179. In some northwestern districts the percentage is not higher than 150 in 1,000. Owing to this inequality the per capita of the population may seem high while the cost per capita of the enrollment is low.

Generally, however, the per capita of enrollment is taken as a standard, since it indicates the economic conditions of the district, and the care and consideration education finds among the people. The fol-

lowing table is therefore inserted to enable the reader to compare the conditions mentioned:

Expenditure per pupil.

Province.	In cities.	In the country.	Total.
East Prussia	$9.03	$6.07	$6.59
West Prussia	8.83	6.33	6.88
Berlin	16.00	.....	16.00
Brandenburg	10.59	8.00	8.55
Pomerania	11.21	6.71	8.01
Posen	8.44	6.45	6.95
Silesia	9.86	5.44	6.59
Saxony	9.98	7.02	8.19
Sleswic-Holstein	11.89	10.92	11 17
Hanover	12.61	7.60	9.03
Westphalia	10.28	7.88	8.68
Hesse-Nassau	15.59	7.49	9.86
Rhenish Prussia	10.69	7.53	8.88
Hohenzollern	9.43	8.96	9.00
Total	11.16	7.05	8.40

IV. Overcrowded Class Rooms.

The official statistical statement does not suffer from want of candor, for it frankly reveals the fact that in 1896 there were 92,001 full-sized elementary classes, but only 78,431 class rooms for them. The remaining 13,570 classes were obliged to share class rooms with others either all day or their time was reduced to half-day sessions. The increase in the number of school rooms during the decade under discussion has not kept pace with the increase in the number of classes, for while the number of classes has increased by about 17,000 since 1886, the number of rooms suitable for school purposes has increased by not quite 14,000 during the same period. The following table gives the exact figures:

Year.	Number of class rooms.	Number of classes.
1886	64,688	75,097
1891	70,950	82,746
1896	78,431	92,091

The discrepancy between the number of classes and class rooms varies in the different provinces of the kingdom, as is seen from the following table:

Province.	Class rooms.	Classes.	Number of rooms needed.
East Prussia	5,035	5,428	393
West Prussia	3,708	4,362	654
Berlin	3,543	3,583	40
Brandenburg	6,659	8,108	1,449
Pomerania	4,365	5,011	646
Posen	4,149	5,786	1,637
Silesia	9,954	13,548	3,594
Saxony	6,758	7,869	1,111
Sleswic-Holstein	3,886	3,945	59
Hanover	6,334	7,379	1,054
Westphalia	6,560	7,710	1,150
Hesse-Nassau	4,368	5,285	917
Rhenish Prussia	12,914	13,788	874
Hohenzollern	198	199	1
Total	78,431	92,001	13,469

This discrepancy does not seem to be very great in the cities, for 30,153 classes were provided with 29,190 class rooms. But in rural districts the disproportion is very great. For about every 150 classes only 100 class rooms are provided. The report frankly states the names of the governmental districts in which this disproportion is exceptionally great. Dr. Bosse, the minister of education, in commenting on these facts in the Prussian Diet, said: "Life and health of both teacher and pupils is endangered by such a condition." He urged an appropriation of several millions of marks for the erection of new schoolhouses in overcrowded districts, but the Diet refused the request.

A like disproportion is noticed in the official report between the number of classes and that of teachers, for the number of teachers is little greater than the number of school rooms, the discrepancy between the number of teachers and that of the classes being 12,570. This plainly indicates that rural teachers, particularly, are obliged to teach half-day schools, that is, teach one section of their school in the morning, the other in the afternoon, or allow them both to occupy rooms that are barely large enough for one of them. The following table gives the exact figures for 1896:

Province.	Number of teachers.	Number of classes.	Classes without teachers of their own.
East Prussia	5,066	5,428	— 362
West Prussia	3,729	4,362	— 633
Berlin	3,587	3,583	+ 4
Brandenburg	6,686	8,108	—1,422
Pomerania	4,389	5,011	— 622
Posen	4,196	5,786	—1,590
Silesia	10,105	13,548	—3,443
Saxony	6,852	7,869	—1,037
Sleswic-Holstein	3,926	3,945	— 19
Hanover	6,424	7,379	— 955
Westphalia	6,724	7,710	— 986
Hesse-Nassau	4,411	5,285	— 874
Rhenish Prussia	13,158	13,788	— 630
Hohenzollern	198	199	— 1
Total	a79,431	92,001	12,578

a This number does not agree with the total number given on page 134, because it includes 472 teachers only provisionally employed.

These conditions do not show an improvement over those in 1886, for in that year there were 64,750 teachers for 75,097 classes, or a discrepancy of 10,347 teachers. Only in the cities the disproportion between teachers and classes has decreased, but in the country schools it has increased. This is explained by the relatively greater wealth of the centers of industry and commerce, and by the well-known retrogression in wealth in agricultural districts of Germany.

The official report states the number of overcrowded classes, and also shows how many pupils they contain.

Year.	Classes.	Pupils.
1886	25,535	2,333,373
1891	19,819	1,661,182
1896	17,165	1,390,525

The improvement was greater during the first than in the second five years. The cause of this is the very rapid growth of the population during the second period. In late years prosperity in Germany has tended to promote the increase in the population. But the migratory movement of the rural population toward the cities, so noticeable in this country also, makes it almost impossible to provide the school population with the necessary buildings; hence we see that in 1896 there were 5,569 overcrowded classes, with 432,603 pupils. The following table gives the details for the 14 provinces for cities and the country in separate columns:

Province.	In cities.		In the country.	
	Classes.	Pupils.	Classes.	Pupils.
East Prussia	160	12,358	926	78,074
West Prussia	226	18,143	695	60,423
Berlin	3	217	.....	.....
Brandenburg	228	17,471	504	41,815
Pomerania	105	8,953	419	36,980
Posen	252	20,000	715	61,275
Silesia	628	49,004	2,029	164,605
Saxony	465	36,783	1,038	86,680
Sleswic-Holstein	155	11,664	177	14,183
Hanover	288	21,356	706	59,240
Westphalia	1,128	87,861	1,607	131,650
Hesse-Nassau	129	10,252	439	35,636
Rhenish Prussia	1,802	129,341	2,323	185,963
Hohenzollern	.....	.....	18	1,488
Total	5,569	432,703	11,596	957,922

The report mentions some of the schools and localities in which overcrowding is excessive. A glance at this list reveals the fact that they are chiefly found in the eastern districts of the Kingdom. They are as follows:

Governmental districts or counties.	Localities.	Classes.	Pupils.
Königsberg	Palmnicken	2	293
Do	Astrawischken	1	171
Gumbinnen	Kleschkaw	1	161
Do	Saspe	2	290
Marienwerder	Battlewo	1	155
Do	Lüben	1	159
Posen	Mechlin	1	173
Do	Nitsche	1	152
Do	Neustadt	1	144
Do	Punitz	1	175
Do	Liedmiorogowo	1	152
Breslau	Hougrowitz	1	133
Do	Strelno	1	154
Oppeln	Sakran Turawa	1	171
Do	Petersdorf	4	806
Do	Langenau	1	143
Merseburg	Holfen	1	166
Do	Löbnitz	1	155
Do	Bebra	1	139
Hildesheim	Moritzberg	1	152
Münster	Sassenburg	1	152
Düsseldorf	Alstaden	1	172
Do	Odenkirchen	1	141

V.—Increase in the Number of Women Teachers.

The number of women teachers in the Kingdom of Prussia has greatly increased, as stated before. The following table gives the details of the movement for ten years.

Province.	Women teachers in—	
	1886.	1896.
East Prussia	164	248
West Prussia	156	209
Berlin	850	1,199
Brandenburg	193	471
Pomerania	119	254
Posen	36	132
Silesia	446	628
Saxony	1,220	384
Sleswic-Holstein	195	451
Hanover	173	392
Westphalia	206	1,820
Hesse-Nassau	231	346
Rhenish-Prussia	2,855	3,732
Hohenzollern	4	5
Total	6,848	10,271

The official report gives the figures as far back as 1822, and the percentages of women teachers in Prussia, according to these figures, were, in 1822, 2.21 per cent; in 1834, 2.98 per cent; in 1846, 7.16 per cent; in 1855, 8.03 per cent; in 1864, 9.14 per cent; in 1887, 8.10 per cent; in 1886, 11.83 per cent; in 1896, 14.90 per cent of the number of men. The percentage of women of the total number of teachers was 12.84 in 1896. This shows how gradual but uninterrupted the increase of women as teachers has been in Prussia since 1822.

Two-thirds of all women teachers in Prussia are found in the three provinces of Berlin, Westphalia, and Rhenish Prussia. In rural schools only 3,703 women teachers are employed, or about one-third of the total number, while of all the men employed two-thirds are found in rural and only one-third in urban districts. Women teachers in rural districts are mostly Catholics—2,926; only 777 are Protestants. The large cities are, as a rule, more favorably inclined toward the employment of women teachers. Only four large cities are exceptions—Duisburg, Crefeld, Elberfeld, and Barmen, all in Rhenish Prussia. The proportion of women among Catholic teachers is greater than the proportion of women among Protestant teachers. For instance, in Westphalian cities the 219 Protestant women teachers are offset by 1,013 Protestant men teachers, while the Catholic women teachers, 552 in number, are offset by only 572 Catholic men. In one governmental district in Münster the number of women is larger than that of the men teachers.

The following table contains a few items of interest:

Governmental districts.	Protestant teachers.		Catholic teachers.	
	Men.	Women.	Men.	Women.
Münster, Westphalia	58	17	157	170
Menden, Westphalia	264	31	72	64
Arnsberg, Westphalia	691	171	343	318
Coblenz, Rhenish Prussia	109	2	143	95
Düsseldorf, Rhenish Prussia	1,459	270	1,108	668
Cologne, Rhenish Prussia	122	39	458	445
Treves, Rhenish Prussia	54	29	111	94
Aix-la-Chapelle, Rhenish Prussia	24	9	256	237

Recently the normal schools of Prussia have by legislation acquired the privilege of admitting their students to a State examination, the passage of which entitles them to the one year's service in the army (instead of three years). This privilege opens other occupations to them, and this will result in a lack of men teachers, whose places will doubtless be filled by women. Hence a further and rapid increase in the number of women in the schools is confidently expected.

SUMMARY.

The last three school censuses of Prussia, of 1886, 1891, and 1896, brought out the following facts:

	1886.	1891.	1896.
Number of schoolhouses	34,016	34,742	36,138
Number of class rooms	66,540	72,921	80,311
Number of school children	4,838,247	4,916,476	5,236,823

Of these schools there were—

	1886.	1891.	1896.
IN CITIES.			
Number of schoolhouses	3,718	3,871	4,242
Number of class rooms	23,078	26,616	30,090
Number of school children	1,503,906	1,615,455	1,773,370
IN RURAL DISTRICTS.			
Number of schoolhouses	30,298	30,871	31,896
Number of class rooms	43,453	46,305	50,221
Number of school children	3,334,341	3,301,021	3,463,456

As has been stated before, the number of class rooms does not express the number of classes taught. The following numbers show this more in detail:

	1886.	1891.	1896.
Total number of classes	75,027	82,746	92,001
Separate classes of boys	10,096	12,168	14,422
Separate classes of girls	10,297	12,281	14,552
Classes of both sexes	54,704	58,297	63,027

The grading of schools has not progressed in Prussian schools as in American city schools, as is seen from the subjoined figures. There were—

	1886.	1891.	1896.
Ungraded schools	17,744	16,600	15,892
With school children	1,146,701	969,598	886,864
Schools of two grades	8,845	9,474	10,181
With school children	1,078,459	1,047,507	1,061,716
Of these were half-day schools	5,409	5,878	6,817
With school children	571,474	568,235	621,820
Schools of three grades	3,949	4,447	4,930
With school children	883,013	850,383	889,703
Schools of four grades	1,352	1,553	1,709
With school children	449,744	476,403	489,900
Schools of five grades	649	692	863
With school children	285,282	274,412	320,166
Schools of six grades	1,187	1,551	1,830
With school children	829,823	994,952	1,102,642
Schools of seven or more grades	209	425	733
With school children	215,225	303,221	485,835

In schools with one teacher there were instructed in either whole or half-day sessions:

1886	1,718,076
1891	1,530,314
1896	1,477,558

With regard to sex, there were:

	1886.	1891.	1896.
IN URBAN SCHOOLS.			
Boys	745,187	805,182	881,704
Girls	758,719	810,273	891,666
IN RURAL SCHOOLS.			
Boys	1,676,857	1,662,376	1,743,012
Girls	1,657,484	1,630,645	1,720,444

Of these were taught in mixed classes—

	1886.	1891.	1896.
Boys	1,766,807	1,718,269	1,764,393
Girls	1,745,343	1,691,812	1,739,963

With regard to religious denomination, there were—

	1886.	1891.	1896.
Protestant children	3,062,856	3,107,701	3,296,481
Catholic children	1,730,402	1,766,835	1,901,013
Other Christian children	9,569	11,554	12,317
Jewish children	35,420	30,386	27,015

The school children in some districts have far to go to reach school. In order to ascertain where new schools were needed, the Government made inquiry concerning the distance children had to walk, and the

following is the result. More than 2½ kilometers (or about 1½ miles) was walked by—

	1891.	1896.
Children	217,389	202,320
In cities	20,244	19,713
In the country	197,145	182,607

The number of regular teachers in the public elementary schools was—

	1886.	1891.	1896.
Total appointed	64,750	71,731	79,431
Permanently	(?)	70,711	78,895
Temporarily	(?)	1,020	536

To these should be added assistants and special teachers who are not appointed as class teachers:

	1886.	1891.	1896.
Total appointed	35,655	41,354	39,944
Special teachers	34,270	36,871	37,193
Teachers of religion	(?)	2,407	2,252
Total number of teachers, regular and special	100,405	113,085	119,375

According to their religious denominations the regular teachers are classified as follows:

Denomination.	1886.	1891.	1896.
Protestant:			
Men	40,909	44,937	48,670
Women	2,551	3,545	4,574
Catholic:			
Men	16,549	17,959	20,112
Women	4,233	4,890	5,662
Other Christian:			
Men	21	5	3
Women	11	1	1
Jewish:			
Men	432	336	347
Women	53	58	62

The schools are classified according to religious denomination as follows:

	1886.	1891.	1896.
Protestant schools	23,122	23,749	24,487
With regular teachers	41,539	46,282	50,715
With pupils	2,993,852	3,050,864	3,228,560
Catholic schools	10,061	10,154	10,725
With regular teachers	19,632	21,547	24,264
With pupils	1,613,497	1,635,779	1,749,731
Jewish schools	318	244	243
With regular teachers	407	335	308
With pupils	13,270	9,519	8,123
Mixed schools	515	595	680
With regular teachers	3,172	3,597	4,144
With pupils	217,628	220,314	250,412

The expenditures for public elementary schools are summarized as follows:

	1886.	1891.	1896.
Personal (salaries, etc.)	$20,888,027	$26,241,972	$31,871,323
Incidental	6,645,081	8,559,652	12,377,041
Total	27,533,108	34,801,624	44,248,364

Of these sums the following amounts were paid for the purposes mentioned:

	1886.	1891.	1896.
Salaries for regular teachers, excluding all special teachers	$19,604,782	$24,134,359	$29,186,261
Pensions	682,859	1,420,666	2,023,317
New buildings	4,483,228	5,190,849	7,760,797

The last-named sums have been expended for the purposes mentioned below:

	1886.	1891.	1896.
New schoolhouses			3,266
Containing class rooms	5,948	7,368	6,435
Containing teachers' dwellings	2,833	3,786	3,086

II. SCHOOL ATTENDANCE AND COMPULSORY EDUCATION IN CENTRAL EUROPE.

[After a statement in Rein's Encyclopedia of Education.]

TOPICAL OUTLINE.—1. Historical remarks.—2. Present regulations as to school age and duty of attendance: (*a*) In Prussia; (*b*) in other German states; (*c*) in other foreign countries.—3. Actual attendance in public elementary schools.—4. Control of attendance.—5. Punishment for absence from school.—6. Dispensation from attendance.—7. Propositions for changes.

1. HISTORICAL REMARKS.

Regular school attendance is necessary for successful instruction. It is brought about by various means in different strata of society and the different grades of the schools. Whereas educated and well-to-do parents, as a rule, strive to give their children thorough schooling under all circumstances, and even at great expense, the less educated and poorer classes seldom, if ever, recognize the necessity of regular and progressive instruction. Even when the value of greater knowledge is appreciated, parents attend more to what concerns their immediate wants and a livelihood, thinking that absence from school may be easily repaired. Physical wants are felt. Intellectual wants are not. Thus it comes that even enlightened, conscientious parents in moderate circumstances do not send their children to school regularly unless compelled by law. It has therefore been considered the duty of the State in German-speaking countries to enforce school attendance. Even though educated and well-to-do communities may

have established a thorough school system (which was the case for centuries in Germany before the State took hold of education) without any intervention whatever from the State, it is understood by German administrative law that regular and general public instruction begins only with the adoption of the law of compulsory school attendance. Hence it is stated that the German school system, meaning the State system, dates back only to the first compulsory school laws of Prussia (about the middle of the seventeenth century). Feeble as they may have been, they established the principle of the State's authority.

It is true that compulsory school attendance may be justly considered an infringement on civil liberty, and especially a limitation of parental authority, and in England and the United States that view held sway and, until the middle of this century, prevented the passage and successful execution of compulsory school laws. But their necessity and judiciousness had been recognized early in Germany. Since Luther (1483–1546) the fact has been frequently dwelt upon that parents are not always the most pious, conscientious, and farsighted educators. Moreover, the law of school attendance, as it exists, does not much affect parents who are enlightened and mindful of their children's welfare. As a rule, it is felt by those only who misjudge the real good of their children or make it secondary to their worldly interests. That compulsory education forces many parents to make great personal sacrifices can not be denied, as the actual premises are not in every case met when the law is enforced. The earlier school laws and regulations in central Europe are principally characterized by being purely police measures and limited to admonition and stimulation. Their requirements were seldom mitigated by positive measures, such as providing for school facilities. In the beginning compulsory education is everywhere and always felt to be severe and meets with energetic contradiction and opposition. Those who favor keeping the masses in ignorance encourage opposition, either openly or secretly. In the course of time, however, the masses become reconciled, and the law enforcing regular school attendance is recognized as a protection; yet its suspension would be followed by a noticeable falling off of attendance, even in the most advanced States.

By compulsory school attendance the Germans do not mean the obligation of sending children to any one particular school, but only the legal requirement of giving them regular, sufficient, and continuous instruction conferring adequate proficiency. The so-called forced school attendance is, in reality, nothing more than compulsory education. Most of the school laws that have been in effect up to the present do not go beyond this. Consequently all private educational enterprises, including private instruction by tutor at home, are allowed the same liberty in their development as public schools. In single instances, as in Bavaria, efforts have been made through the royal

authorities to interpret the law of compulsory education as compelling attendance at one particular class of schools, i. e., the public schools. The political measure of "obligatory attendance at public schools," i. e., the duty of sending a child to a public school for a specified number of years, or until graduation, has gained many warm advocates in southern Germany, and was mentioned in the platform of one German political party, the Social-Democracy, in the year 1891.

When we speak of compulsory education in central Europe (Germany, Austria, and Switzerland), the term generally applies, as a matter of course, to the education acquired in public elementary schools. No one is obliged to attend secondary schools, where irregularity of attendance is a violation of private rule, to be punished by the school authorities, but not by police or higher officers of the law. The earliest school ordinances (Schul-Ordnungen), those of the sixteenth century, make no mention of school attendance, the regularity of which was attempted by other means. The ordinance of Count (Landgraf) Philip the Generous, of Hessia, for instance, closes with these words:

In all places where schools exist the clergymen shall urge and earnestly exhort parents to send their children to school, so that they may learn.

The ordinance of 1559 in Würtemberg required only attendance at catechism class on Sunday. The "general regulation" of the elector of Saxony, Augustus I (1580), required the regular attendance of boys only. This prescription is undoubtedly one of the first legal measures relating to the subject under discussion.

A general attendance of both boys and girls has been required in the most advanced German States since the very beginning of legislation on this subject, but with greater rigor since the middle of the seventeenth century. Pre-eminence, not in point of time, but as respects energy and success, is due to the Duchy of Gotha, the regent of which, Ernest the Pious, a friend and promoter of learning, published his well-known "Schul-Methodus" in 1642. One passage of this famous document reads:

All children, boys and girls, in cities as well as in villages, should, when 5 years old, without further delay, after the announcement is made from the pulpit, be sent to school. They should remain so long without interruption during the winter and summer, until they have learned all the necessary rudiments and can recite what has been taught them. They should not leave of their own choice, still less should they be withdrawn, until upon examination by their superior they are found worthy of discharge and are dismissed in a proper manner.

The law of the largest German State, Prussia, to-day, does not go beyond these requirements but covers exactly the same ground. Most of the German States followed the example of Ernest the Pious, only after several decades. According to the "general ordinance" of the Duchy of Brunswick, 1647—

All parents shall be compelled to send their children to school, either to the schoolmaster or the sexton of their respective villages, until the children can

understand the catechism and read print. In case of neglect, parents shall be punished by officers and judges of the law.

Attendance, however, was exacted only in winter. During the summer instruction was confined to reviews on Sunday. Still earlier, in 1619, Count (Landgraf) Ludwig, of Hesse-Darmstadt, ordered that all children in the country should likewise be sent to school. Besides being obliged to pay the tuition fee, negligent parents were punished with fines. According to the regulation of Count Ludwig VI (1670), all children above 5 and under 12 years of age were obliged to attend the elementary school five hours daily in winter and three hours daily in summer.

The "school ordinance" of Hesse-Darmstadt for 1733 required children to attend school from their seventh to their fourteenth year of age—seven years under any circumstances. In winter as in summer, classes were to be held six hours a day, four days in the week, and three hours on Wednesday and Saturday. A fine of 1 kreutzer[1] was imposed for every failure of attendance. The consistorial ordinance of the electorate of Hessia (Hesse-Cassel) for 1726 reads: "All parents are required to send their children to school from their eighth to their fifteenth year of age at least two or three times a week, winter and summer." In Würtemberg regular school attendance was prescribed by ordinance in 1649; the law of compulsory attendance has been in force since 1729. Throughout the electorate of Saxony the regulation for school attendance was issued in 1713; since 1724 all children have been required to attend school from their fifth to their fourteenth year of age; negligent parents are punished by law. In Bavaria the beginning of compulsory education may be traced to before the Thirty Years' War (1618–1648); no general application of the provisions made, however, was to be thought of under the lamentable conditions that prevailed in this State during the first half of the seventeenth century. In Baden ordinances date from the middle of the eighteenth century, providing for compulsory education in accordance with modern principles, and introducing secular Sunday schools for boys and young men of 14 to 20 years of age, and for girls and young women of 14 to 18 years of age.

In Prussia no earnest effort was made toward compulsory education before the year 1717. There existed, however, no lack of good counsel and admonitions. The school ordinances of the Elector John George (1573) required that—

In villages every Sunday afternoon or on one week day the sacristan shall, with the pastor's advice, read the small catechism of Luther aloud to the people and especially to children and servants, and teach them to pray, questioning them on what they have learned. Pastors shall publicly announce and exhort that all of their children when arrived at the proper age be sent to school and be brought up in good discipline and the fear of God.

[1] It is impossible to state the present value of that small coin, it having been long out of use. It was worth approximately 2 cents, but its purchasing power was much greater.

The great elector, Frederick William, commanded in 1662—

That churches and communities exert themselves diligently to establish well-appointed schools in villages, towns, and cities.

His successor, King Frederick I, 1698, expressed the wish that—

children in the country attend school at least two hours every morning, during harvest time, too, and be kept at school regularly.

Education became truly compulsory in the Kingdom of Prussia first under Frederick William I through his decree of September 28, 1717, a date which has been mentioned before. This memorable decree required that—

in the future, wherever schools exist, all parents shall, under penalty of the law,[1] be obliged to send their children to school, paying a tuition fee of sixpence[2] a week for each child. Children must attend every day in winter, and in case their parents need them at home, at least once or twice a week in summer, so that they may not altogether forget what they learned during the winter. Should parents not have the means, the said tuition fee of sixpence shall be paid out of the public local poor fund.

Frederick the Great defined these provisions with greater exactness in his general school regulation (1763), section 1 of which reads:

Primarily, we demand that all our subjects upon whom the education of youth devolves, be they parents, guardians, or masters, send their own children, as well as those intrusted to their care, boys or girls, to school at 5 years of age, if not before, and allow them to attend till their thirteenth or fourteenth year. They shall be kept at school not only until they understand what is of importance for them to know about Christianity and can read and write, but until they can give intelligent advice and answers upon what they have learned from the readers ordered and approved by our consistories.

These prescriptions were given still greater definiteness in the general civil code (Landrecht) (1794), which states in paragraph 43 and paragraph 46, article 12, Part II:

SEC. 43. Every inhabitant who can not, or will not, provide private instruction for his children is obliged to send them to school when they are 5 years old.

SEC. 46. Instruction must be continued until the child has acquired, according to the statement of his pastor, the knowledge necessary to him in his station of life.

By a cabinet order of King Frederick William III, dated May 4, 1825, these provisions went into effect also in those parts of the Kingdom which did not then come under the general civil code, and they define the present state of the law in Prussia. In practice, the letter of the law respecting children 5 years old was not observed, owing to pedagogical considerations, and gradually the custom grew up of extending the time set for compulsory attendance, so that it ended with the completed fourteenth year of age. Subsequent cabinet orders confirmed this by giving it the force of law.

The charter (or constitution) wrested from the King, Frederick

[1] At that time a royal decree or order was synonymous with law.

[2] Actually "zwei Dreier."

William IV, during the revolution of 1848 and 1849, and signed by him January 31, 1850, defines no more than this:

Parents and their representatives must not deprive their children, or their wards, of the instruction prescribed for public schools.

The observance of the regulations quoted has not, of course, been at all times equally strict. Often a highly developed municipal or provincial school system sank to a lower plane through lack of attention. A few figures will serve to illustrate. In the year 1824 the district of Aachen (Aix-la-Chapelle) numbered 66,611 children between 5 and 14 years of age; only about half of whom, 34,140, attended school, namely, 1,600 of the 1,852 Protestant children, 32,403 of the 64,401 Catholic, and 137 of the 378 Jewish children, attended primary, secondary, and higher schools. The conditions were, in all probability, about the same in other parts of Prussia. In the city of Berlin, 1,818 out of 6,000 children, according to Beckedorff's year book, were deprived of schooling. According to the census of that decade (164,000 inhabitants) the total number of school children amounted to 27,000. The official statistics of the Prussian State authorities of education show a gradual improvement to some extent. The following table gives the number of children attending public elementary schools, together with the number of inhabitants.

NOTE.—The table does not include the pupils of private schools, nor of elementary classes of secondary schools, nor pupils taught at home by governesses and tutors, nor the children of defective senses and other abnormals who are kept in asylums, nor yet the morally unsound who have been placed in reform schools. If all these were included, the ratio would be about 2 per cent higher—i. e., not less than 18.72 per cent of the population. If the pupils of supplementary schools and the students of secondary schools, general and special, were added, the ratio would be no less than 20 per cent of the population.

School children (age 6 to 14) in public elementary schools in Prussia.

Year.	Boys.	Girls.	Total.	Population.	Per cent of population.
1822	743,207	683,838	1,427,045	11,664,133	12.2
1825	822,077	755,922	1,577,999	12,258,725	12.9
1828	925,438	866,265	1,791,703	12,726,110	14.8
1831	987,475	930,459	1,917,934	13,038,960	14.7
1834	1,075,857	1,026,414	2,102,271	13,507,999	15.6
1837	1,108,015	1,061,232	2,169,247	14,098,125	15.4
1840	1,153,288	1,090,951	2,224,239	14,928,501	14.9
1843	1,184,864	1,143,282	2,328,146	15,471,084	15.0
1846	1,235,448	1,197,885	2,433,333	16,112,938	15.1
1849	1,244,401	1,208,661	2,453,062	16,331,187	15.2
1852	1,310,913	1,272,652	2,583,565	16,955,420	15.2
1855	1,322,747	1,292,635	2,615,382	17,202,831	15.2
1858	1,376,278	1,342,794	2,719,072	17,739,913	15.3
1861	1,406,014	1,372,194	2,778,208	18,491,220	15.0
1864	1,427,191	1,398,131	2,825,322	19,255,159	14.7
1867	----------	----------	3,035,275	a 19,672,237	15.4
1871	----------	----------	3,900,655	b 24,639,706	15.8
1878	----------	----------	4,200,160	26,634,427	15.8
1882	----------	----------	4,339,729	27,694,854	15.7
1886	2,422,044	2,416,203	4,838,247	28,645,832	16.9
1891	2,467,558	2,448,918	4,916,476	29,955,281	16.4
1895	----------	----------	5,415,370	31,855,123	17.0

a Includes only the old provinces without Hanover, Sleswic-Holstein, Nassau, and Hesse-Cassel.
b Includes the newly acquired territory.

Besides the increased rate per cent of school children in relation to the population, the fact that the number of boys and girls is nearer to being equal than formerly may be considered a proof of better school attendance. In the German States the education of girls in public schools has long been below that of boys. Even to-day there is no equality. Independent of compulsory attendance in continuation or supplementary schools, which is in force generally for boys (only a few smaller States extend the benefits of this law to girls), several States provide for an earlier dismissal of girls from the elementary schools, i. e., Alsace-Lorraine, Schwarzburg-Rudolstadt, several parts of Oldenburg, and Sleswic-Holstein. As a rule, the number of boys in attendance at public elementary schools is greater, even in cases where the education of boys and girls is equal in point of time, owing to the larger percentage of male children.[1] Where this is not the case, as in Bavaria, much more ample provision is made for boys in the establishment and maintenance of intermediate and secondary schools than for girls.

2. Present Regulations Regarding School Age and Duty of Attendance.

(*a*) *Prussia.*—The provisions of the general civil law quoted in the foregoing section are in force throughout the greater part of Prussia, but are not observed strictly to the letter. Articles 31 and 65 of the school order for Sleswic-Holstein (dated August 24, 1814) declare that children shall attend school from the beginning of their sixth, or, at the latest, their seventh year, until their confirmation in church, which takes place for boys at the age of 16 and for girls at the age of 15. According to section 1 of the school ordinance for the province of East and West Prussia, December 11, 1845, any child 5 years old may be sent to school; but at 6 years of age attendance becomes compulsory. In practice the sixth year is generally accepted as the limit of age for first attendance; in no instance is compulsory attendance recognized before that age. Because of personal and local causes, as physical weakness and difficulty of access to school, the commencement of schooling is not infrequently deferred with the cognizance of teachers and authorities, until the eighth year; whereas on the other hand, especially in cities, in cases where the children are later on expected to enter secondary schools many parents desire, and as a rule succeed in gaining earlier admission for them.

The close of the school age is determined by the general civil law, which is identical with the cabinet order of May 14, 1825, both of which provide that—

> A child must attend school until it has acquired the education necessary to any person of average intelligence for his station of life.

This degree of education is determined by the parish pastor, who,

[1] Yet the census of 1895 showed that the female population of the Empire exceeded that of the male by nearly 1,000,000 (957,401).

however, by the law of school inspection, March 11, 1872, is displaced by the secular inspector of schools. The boards of education, in unison with the highest courts of justice, so interpret the law that compulsory attendance is in force until the beginning of the fifteenth or the completed fourteenth year of age, as that length of time is ordinarily required to attain the degree of development contemplated by the law. A longer term of schooling is obligatory in cases of deficiency at the age above mentioned. Although fully agreed in their understanding of principles, school boards and courts of justice have come to very different decisions in individual cases, so that the error of basing conclusions altogether upon a child's age is quite manifest. Therefore, in the school bills submitted to Parliament in 1890 and 1891, decisions based upon the old civil law were set aside, and the following conclusion accepted:

The term of school attendance ends with the completion of that school semester during which a child attains its fourteenth year of age.

For reasons not germane to the matter in hand the bills were not passed by Parliament, and the old provisions are still in force. In practice the rule is so applied that a child is discharged from attending school at the close of a semester, the date of which approaches nearest to that of its birthday, consequently when $13\frac{3}{4}$, 14, or $14\frac{1}{4}$ years of age. According to the regulations in force from 1817 to December 11, 1845, in the Duchy of Nassau and in the provinces of East and West Prussia, the term of school attendance ends with the completion of the fourteenth year of age. This provision is in so far impracticable as, in accordance with the decision of the supreme court of Prussia, rendered March 23, 1885, the time of discharge can not be made to coincide with the close of the semester immediately following upon the fourteenth birthday. The authorities at Dantzic, for instance, have decreed that all children who have passed their fourteenth birthday by March 31 shall be discharged in the spring, and those fourteen years old by September 30, in the fall. In pursuance of the decision of the supreme court, the following order was issued June 24, 1898:

(1) The local school supervisors or inspectors shall decide[1] whether children whose fourteenth birthday will fall in the following half-yearly term are sufficiently advanced to be relieved from compulsory attendance at the close of the semiannual examination. (2) If so, the inspector (superintendent) shall give permission to them to leave school at the close of the semiannual term, during which they have been examined. (3) If examination proves that a child has not attained the required progress, the school inspector shall defer the discharge from compulsory attendance according to section 32 of the regulations of December 11, 1845.

The Hanoverian school law of May 26, 1845, in section 5 refers to

[1]As a matter of fact, few such cases are submitted to him for personal examination. The superintendent ordinarily decides upon recommendation of the local teacher or principal. Only in cases where parents appeal from the decision of the teacher does the superintendent conduct an examination in person.

territorial school regulations which fix the limit at 14 years of age. In Sleswic-Holstein the school age of boys closes with the completed sixteenth, that of girls with the completed fifteenth year of age.

The Prussian Government has entered into an agreement with the Governments of all the German States excepting Bavaria and Brunswick, which submitted reasons for withholding from such an agreement, to the effect—

That all Prussian children resident in another State of the union, and all children belonging to any one of these States but resident in Prussia, shall attend school in obedience to regulations existing where they may be resident, the same as native children.

That this compulsory attendance shall extend not only to elementary schools (6 to 14), but also to so-called secular Sunday or continuation schools to which the obligation of regular attendance attaches.

That, however, children who have received a certificate from the school authorities of their native place, showing that they have complied with the law of their homes to its full extent, shall be exempt from further attendance, even though the law in force at their new place of residence may require a longer term of school age.

Agreements of this kind, which also exist between the other German States to some extent, take the place of any expressly formulated legal provisions for imperial uniformity regarding the school system.

(*b*) *The other German States.*—In Bavaria the law of December 23, 1802, requires every child to attend week-day school from its sixth to its twelfth year of age, and since 1856 to its thirteenth year. From then until the sixteenth year of age attendance at holiday schools is compulsory. In Würtemberg (order of November 6, 1858, article 1) school age continues from the beginning of the seventh to the close of the fourteenth year of age. Release before the fourteenth year of age is allowed in cases where sufficient progress has been made and home circumstances seem to demand or justify it. Compulsory attendance at continuation[1] and holiday schools is coupled with that of elementary schools. In Saxony (school law of April 26, 1873, article 4) the school age extends from the beginning of the seventh to the beginning of the fifteenth year of age, and in case of deficiency till the close of the fifteenth year. Boys are required to attend continuation schools three years, provided no other arrangements are made for their further instruction, such as attendance at a secondary, industrial trade, or art school. In Baden (law of May 13, 1892) school age begins with the close of the sixth and ends with the close of the fourteenth year of age. Provision is made for exceptions. The law of February 18, 1874, requires boys to attend continuation schools two years and girls one year. In Hessia (law of June 16, 1874, article 9) the school age likewise covers the same eight years. In cases of inefficiency in the chief studies, religion, language, arithmetic, and writing, the term may be extended one year. Boys are required to attend continuation school

[1] Continuation schools are evening and secular Sunday schools. In some cases they are day schools for the trade apprentices.

three years. In Oldenburg (laws of April 3, 1855, and February 26, 1870) the school age extends from the beginning of the seventh to the beginning of the fifteenth year, and in the smaller principalities till the close of the fifteenth year. In Mecklenburg-Schwerin the school age begins with the seventh and ends with the thirteenth year, in most cases with the date of church confirmation. In Mecklenburg-Strelitz the school age begins with the completed sixth year and continues till confirmation. In the remaining German States departures from the rule of admission at 6 years (completed) and release at 14 years (completed) are unimportant. Besides, in the States already mentioned, attendance at continuation schools is compulsory, for boys two years in Saxe-Coburg-Gotha; for girls and boys two years in Saxe-Meiningen; for boys two years in Saxe-Weimar, and for boys until their sixteenth year of age in Schwarzburg-Sondershausen.

(*c*) *Other European countries.*—The following table shows how much the school age varies throughout Switzerland.

NOTE.—The cantons of Switzerland manage their school systems independently of one another, just like the States of the United States. Hence the diversity.

Term of school attendance in Switzerland.

Canton.	Age of admission (years).	Day schools—Number of years of compulsory attendance.	Continuation schools—Number of years of compulsory attendance.
1. Zürich	6	6	3
2. Berne	6	8–9	(*a*)
3. Lucerne	7	7	2
4. Uri	7	6	2
5. Schwyz	7	7	----
6. Obwalden	7	6	2
7. Nidwalden	7	6	*b* 2
8. Glarus	6	7	2
9. Zug	6	6	3
10. Freiburg	6	*c* 9	----
11. Soleure	7	*d* 8	----
12. Basel, city	6	8	----
13. Basel, country	6	6	3
14. Schaffhausen	6	8–9	----
15. Appenzell, I.	6	7	2
16. Appenzell, II	6	6	2
17. St. Gall	6	7	2
18. Grisons	7	8	----
19. Aargau	7	8	----
20. Thurgovia	6	*e* 9	----
21. Tessin	6	8	----
22. Vaud	6–7	8–9	----
23. Valois	7	8	----
24. Neuchâtel	7	6–7	2
25. Geneva	7	6	2

a Girls are required to attend industrial and domestic science school one year.
b Only for boys.
c Only eight years for girls.
d Only seven years for girls and one year industrial school.
e For girls, eight years day school and two years singing and industrial school.

In the Austrian crown lands[1] the period during which school attendance is compulsory extends in some cases over six years, as in Dalmatia,

[1] While the divisions of Germany are called States, of Switzerland cantons, in Austria they are called crown lands.

Istria, Galicia, Bukowina, and the rural schools of Carniola, in others over eight years. Where attendance is required eight years, the superintendent may shorten the term in the two highest grades; for instance, by lessening the number of hours per week, or by exempting needy pupils from instruction during the summer.

In Hungary all children who do not receive sufficient private instruction, which is tested by participating at examinations in public educational institutions, must attend day school from their sixth to their twelfth, and continuation or review schools till their fifteenth, year of age.

The Swedish school law of December 10, 1897 (section 35, articles 1 and 3), reads:

The length of time during which a child is required to attend school is reckoned from the calender year in which it attains its ninth year to that in which its fourteenth year of age closes. A pupil who, at the end of that term, has not acquired the prescribed knowledge is still subject to compulsory attendance, whereas pupils who complete the course of study in less time may be released before their fourteenth year of age.

Section 38 of the same law says:

Children of school age instructed at home shall be exempted from school attendance. provided that their parents or guardians are competent to watch over their education. Children thus taught are bound to take a set examination upon summons of the school inspector of the district. In cases of deficient instruction they shall be required to attend school.

In Norway (school law of May 16, 1860) all children are required to attend school from the beginning of their tenth year until confirmation in church, which takes place at 13 or 14 years of age. Children sufficiently developed physically and far enough advanced in their studies may be dismissed when 13. The law of 1889 requires city children to attend school from 6½ to 15 years of age; children in rural districts from 6 to 14.

The Danish law of May 2, 1855 (amended September 30, 1864), says:

School attendance is required at the beginning of the seventh year of age. When a child has completed its thirteenth year and gives satisfaction in studies it may, upon the desire of parents or their representatives, be released from school. This release must follow upon parents' request when the child is 15 years old. Children under private instruction must take the semiannual examinations in the public schools. Should they fail or not attend, they are at once required by the authorities to receive public instruction.

In England the State assumed special responsibility with respect to elementary schools by the law of August 9, 1870. Compulsory education, however, was not introduced with this law. Local school boards were left to pass special ordinances approved by the Government introducing compulsory attendance in their districts, with the right to fine delinquent parents 5 shillings. Where there are no school boards, the law of August 15, 1876, requires that school-attendance committees be formed, with the same power to enforce regular attendance. These regulations, together with the factory law of 1878, which

requires all children working in factories to attend school at least five times a week until their thirteenth year, have made instruction virtually general and compulsory.

The Netherlands have no compulsory education law. Boards of teachers and college directors are supposed to establish a regular attendance of children from 6 to 12 years of age by means of exhortations, circulation of roll calls, and indirect compulsory measures, such as withdrawal of public support, etc.

In Belgium no compulsory education exists. Children attend school from the seventh to the fourteenth year.

In France the law of March 28, 1882, reads:

> All children are required to attend instruction from their sixth to their thirteenth year. Release at the age of 11 is allowed upon the passing of an examination.

In Italy the school age covers four years. The law of July 15, 1877, requires children to attend the lower elementary school from their sixth to their completed ninth year, and night schools one year longer where such schools exist.

Russia has no compulsory education law.

3. Actual Attendance or Enrollment in Public Elementary Schools.

It is difficult to find a definite measure with which to gauge how far the foregoing provisions and regulations are executed and obeyed. Statistics at hand are affected by different circumstances—duration of school age, relative number of children in the population, the extent to which secondary education reaches down into the primary, expansion of secondary and special school systems, popularity of private and parochial schools—all these and other questions disturb the uniformity so essential for comparative statistics. We should arrive at altogether false deductions if we based our conclusions entirely upon the percentage of school children in the total population, i. e., apply the "educational denominator," as European statisticians say. For in that case Finland, for instance, would be far ahead of Germany; yet other indications prove that Germany is ahead of Finland in results of compulsory education; the rates of illiteracy in the two countries plainly show this; better even than that does the limited and inadequate number of schools in Finland show it, where the inadequacy is remedied by means of ambulatory schools. Nevertheless the rate per cent of school children to the population gives us a useful measure of the excellence of public instruction. The presumption is that a country with a large percentage of school children possesses an extensive and well-equipped system of schools with a well-matured course of study. And even if statistics refer to public schools only, it may be taken for granted that their plan throughout is good, otherwise a system of private schools would spring up in

competition with it. The following figures give the statistics for the German States:

Ratio of elementary pupils to the population in the German States.[1]

States.	Population (census of 1890).	School children (in 1890-91).	Ratio to population.
Prussia	29,957,367	4,916,476	16.41
Bavaria	5,594,982	823,279	14.79
Saxony	3,502,684	576,641	16.46
Würtemberg	2,036,522	314,690	15.45
Baden	1,657,867	272,604	16.44
Hessia	992,883	163,036	16.42
Mecklenburg-Schwerin	578,342	84,894	14.67
Saxe Weimar	326,691	53,540	16.42
Mecklenburg Strelitz	97,978	15,309	15.62
Oldenburg	354,968	60,407	17.02
Brunswick	403,773	68,999	17.09
Saxe-Meiningen	223,832	39,592	17.69
Saxe-Altenburg	170,864	29,625	17.34
Saxe-Coburg-Gotha	206,513	33,503	16.22
Anhalt	271,963	45,222	16.63
Schwarzburg-Sondershausen	75,510	12,965	17.17
Schwarzburg-Rudolstadt	85,863	14,567	16.96
Waldeck	57,281	10,440	18.23
Reuss, senior line	62,754	10,988	17.51
Reuss, junior line	119,811	19,503	16.28
Schaumburg-Lippe	39,163	6,758	17.26
Lippe	128,495	23,535	18.32
Lubeck	76,485	8,956	11.71
Bremen	180,443	25,718	14.25
Hamburg	662,540	66,658	11.49
Alsace-Lorraine	1,603,506	223,845	13.96
Total	49,428,470	7,925,688	16.03

The figures show the effect of the different regulations and laws on school attendance. The low ratio for Bavaria and Mecklenburg, as well as Alsace-Lorraine, is due to the shortness of the school age, see p. 155; that of the Hanseatic cities (Lübeck, Bremen, and Hamburg) to the small percentage of children, and the great number of secondary, special, and private schools. Other large cities have low percentages also; for instance, for the decade 1881–1891 Berlin had 10.8 per cent, Breslau 11.3, Leipsic 8.9, Dresden 10.8, Vienna 8.1, Budapest 7.2 per cent of the population.

A few special features for Prussia and Bavaria are subjoined.

On December 1, 1890, Prussia numbered 5,299,310 children of school age, i. e., between 6 and 14, and 722,883 children at the age of 5 to 6 years, of whom a few attended school (see p. 153). About as many as attended school before being 6 years old, were over 14 years and still in school owing to inefficiency. On May 25, 1891, there were counted on the rolls and belonging to school—

In public elementary schools	4,916,476
In private schools, or taught at home	280,389
Not admitted owing to overcrowded schools	3,239
Not sent to school yet for hygienic reasons, though 6 years old	17,527

[1]This table does not include the pupils of private schools, nor of elementary classes of secondary schools, nor pupils taught at home, nor defective children in asylums, nor morally unsound children kept in reform schools; only the pupils of public elementary schools (Volksschulen). The census of 1895 could not be used, since the school statistics date from 1890–91.

Released from school before the completion of the fourteenth year, having completed the course	62,838
Excused from attendance owing to physical or mental defects, or placed in asylums	10,041
Truants, or withheld from attendance	945
Total	5,291,455

If we rely upon the census, we find that nearly 8,000 children are not accounted for on the school rolls in Prussia.

In Bavaria the number of children at public elementary schools has decreased in late years despite notable improvement in the system of education, to wit, from 859,116 in 1886–87 to 817,589 in 1892–93, but then the attendance at holiday schools and continuation (day and evening) schools has considerably increased, to wit, the former 263,103 in 1884–85 and 304,227 in 1892–93; the latter 24,031 in 1884–85 and 31,121 in 1892–93.

The actual school enrollment in the schools of other countries is characterized by the following ratios to the population:

Ratio of elementary pupils to the population.[1]

	Per cent.		Per cent.
Belgium	11.10	Portugal	4.66
Denmark	12.87	Roumania	4.41
France	14.47	Russia (Europe)	[3] 1.03
Greece	6.19	Finland	[4] 18.29
Great Britain and Ireland	15.45	Sweden	16.37
Italy	[2] 8.14	Norway	[5] 17.02
Netherlands	14.25	Switzerland	15.73
Austria	13.40	Servia	3.38
Hungary	13.59	Spain	10.95
Bosnia	2.70		

A few items concerning the various crown lands of Austria may be added. In 1889–90, the number of physically and mentally normal children who were withheld from attending school was very large, despite the compulsory attendance law in force, to wit, 436,731. This shows that the execution of the law, being in the hands of local authorities, varies considerably. It is noticeable that in crown lands settled chiefly by Germans the percentage is small, while in those chiefly Slavic it is large.

[1] Other sources give the following ratios: Denmark, 10.61 per cent; Greece, 4.02 per cent; Sweden, 14.72 per cent; Norway, 15.65 per cent; Spain, 7.68 per cent.

[2] Enrolled 8.14 per cent, but actually present only 5.91 per cent.

[3] European Russia without Poland.

[4] Includes all children receiving instruction in day schools and ambulatory schools.

[5] This ratio includes all children of school age, which is presumably identical with the number enrolled in school.

Percentage of children withheld from school in Austrian crown lands in 1889–90.

	Number.	Per cent.		Number.	Per cent.
Nether Austria	171	.05	Carinthia	1,495	2.78
Upper Austria			Carniola	6,633	8.39
Salzburg	23	.09	Dalmatia	4,029	15.68
Bohemia	1,749	.18	Trieste and Istria	21,288	27.05
Moravia	926	.23	Galicia	359,596	38.04
Silesia	773	.85	Bukowina	33,658	42.82
Tyrol and Vorarlberg	2,005	1.41			
Styria	4,385	2.42	Total	436,731	12.23

The previous table, which credits Austria with 13.4 per cent of children in school, proves that the conditions there have greatly changed in recent years, chiefly owing to the imperial school law of 1869, amended in 1888.

4. Control of Attendance.

For the control of school attendance, individual school boards in some countries, in others the governmental school authorities, have issued orders in pursuance of which they exercise control in conjunction with the police authorities. The great variety of relations existing does not allow entering upon details respecting this control. The Prussian provincial governments have issued orders which prescribe the keeping of enrollment and absence lists of pupils (see order of the authorities at Bromberg, December 1, 1870); also orders which require control of attendance at religious lessons in nondenominational schools (see order of the authorities at Dantzic, March 31, 1872); also orders which require that the "floating school population," children living on canal and fishing boats, be accommodated in any school convenient to them for the time during which they leave their boats, usually not less than a week; likewise orders which provide for juvenile shepherds, whose attendance at school causes trouble in the eastern provinces, chiefly devoted to agriculture and cattle raising. In regard to the last-named category of children, the earlier and stricter laws have been amended on account of the opposition raised by agriculturists. These amendments have made the control much less strict, and they may be said to stand in contradiction to the strict prohibition of child labor expressed by the imperial factory law.

5.—Punishment for Absence from School.

In Prussia the penalties attached to absence from school are accounted as penalties for the transgressions of parents, and are treated as such. Accordingly, an appeal to law is possible; the motion for punishment must be made by the school inspector (superintendent). Without such a motion, the police authorities that decide upon the punishment are not justified in interfering. The police judge has the right, however, to set aside any motion which seems to him without cause. (Ministerial act of July 17, 1873.) School inspectors may demand an

account of the judgment rendered; in case of a setting aside or modification of their motion, they have the right of appeal to a higher court. The limit of punishment is fixed partly by laws, partly by regulations. Wherever the general civil code rules, and according to the act of May 6, 1886, for East and West Prussia (two provinces which formerly did not belong to the German Federation), as also for Silesia, school attendance is controlled by the school and police authorities. Section 48, article 12, part 2, of that code reads:

> School inspectors, with the aid of magistrates [which means police authorities], are required to see to it that all able-bodied and mentally competent children, in obedience to the foregoing provision (section 43), regularly attend instruction, by force, if necessary; and that delinquent parents be punished.

The police are authorized, on their part, to institute regulations, and to impose fines "in accordance with the prevailing local circumstances." This is important, as the earlier regulations provided for such low fines that parents did not feel their payment as a burden. Fines are paid into the school treasury. Besides punishing parents with fines, and in default of them with confinement for a number of days, the children may be forced to attend school by police or truant officers.

6.—Dispensation from Attendance.

Religious instruction occasions much irregularity in attendance, particularly if children are required to go any distance for that purpose, as is often the case in rural districts. School authorities are battling against such irregularity in vain. In Catholic countries, part of one day in the week, generally Thursday, is set aside for religious instruction.

Absence from secular instruction on Saturday, or else exemption from written work during school hours, is often required by and also granted to Jewish children. Other dispensations, for instance, for purposes of employment, aiding parents in gaining a livelihood, have, in the course of time, become very rare in Germany. The increase of national prosperity, which has been quite phenomenal during the last twenty years, and the consequent increase of parental supervision, have given children more chances to attend school. The prohibition by imperial law of child labor in factories (June 1, 1891) has done more even than the increased prosperity. Still, too much of children's time out of school is often taken up by home industries, which materially depreciates the advantages of exact regular attendance. In the country, particularly in the eastern provinces, agricultural labor, such as tending flocks, is still performed by children. The time of instruction for some children, and for nearly all during the summer, is so much shortened that good progress in school can not be expected. This is the case especially in Mecklenburg, where the "Dienstschule" (service school) is still a poor substitute for a modern public elementary school. Some vacations, for instance, the one during beet-raising

time, are also among the deplorable causes of irregularity in attendance; these vacations afford the opportunity of drawing children into industrial labor in a way that undermines their health and morals.

7. Propositions for Changes.

Propositions for changes come from two antagonistic parties—the one opposed to progressive national education and the elevation of the masses; the other, in favor of advancement of popular education as the guaranty of increased national prosperity in all directions. While the former is laboring not only to prevent every expansion and safeguarding of school attendance, but to bring about restrictions and contractions, the latter party, to which, of course, all educators belong, is aiming at extending compulsory education, and, first of all, at removing all hindrances to a complete utilization of school time for purely educational purposes. German teachers consider eight years' school attendance sufficient in general, presupposing that elementary instruction is continued and supplemented by an appropriate three or four years' course at well-organized continuation schools, be they agricultural, commercial, or industrial. The demand, coming especially from physicians, but sometimes also from educators, and not infrequently from politicians, to defer the commencement of school attendance one year until the beginning of the seventh year, could be justified if arrangements were made to prevent the neglect of uncared-for indigent children, and kindergartens or institutions of like kind were established in which young children would be properly occupied whose parents either can not, or will not, see to it that they have sufficient mental exercise.

If study were omitted during the first year of school, and play and lively physical and mental occupation were introduced to a greater extent, the essential import of the demand for shortening the course of compulsory attendance at school would be complied with and the disadvantages of later entrance obviated. This demand, when it comes from politicians, naturally conceals another purpose, that of reducing the cost of schooling fully one-eighth.

The public elementary school of the future will, beyond doubt, attach greater importance to the attendance of advanced children than those of an earlier period of age. During hard, poverty-stricken times, when public elementary schools were first established in Germany, a child was hurried from the cradle to the school desk in order to give it an education. The child formed a part of the assets of the family business. It had to do its share of bread-winning. At present a much greater number of children are allowed a longer time for development free from the yoke of labor, and schools have the right to claim them at a later age. How far this period may be extended is an open question in Germany. As the interim between school and military service has already been very much curtailed by extending

compulsory attendance to supplementary evening and holiday schools, it may be taken for granted that the interruption will, at some time in the future, be entirely bridged over. The entire educational history of Germany seems to indicate this.

Whether compulsion is beneficial in all respects is doubtful. But it is an "ultima ratio" against brute force and evil influences in life, and it is indispensable to successful work of teachers. Penalties attached to absence from school are unavoidable, even in highly civilized states. Like all penal laws, they form a wall of protection against the forces of evil. As for the rest, schools must endeavor to effect regular attendance by their internal organization, kind management, and wholesome influence upon the adults at home, also by their plan of study and ready cooperation in the amelioration of social conditions. Judges, it is true, can compel a few delinquents not to prevent their children from receiving the benefit of education, but Nemesis does not establish social progress; positive aid is necessary, therefore, and from that alone can it be expected that in the future no child shall suffer in its development because of ignorance and crudity or want and misery.

III. TEACHERS' PENSIONS AND ANNUITIES IN CENTRAL EUROPE.

[After an article by J. Tews, of Berlin, in Rein's Encyclopedia of Education.]

TOPICAL OUTLINE.—Introduction.—1. General remarks.—2. Conditions governing pensions for teachers of elementary schools in Prussia.—3. Pensions for teachers of elementary schools in other German States.—4. Pensions for teachers of elementary schools in other European countries.—5. Pensions for teachers of secondary schools in Germany.—6. Pensions for teachers in secondary schools of other countries.

INTRODUCTION.

The statement that teachers in Germany, Austria, and Switzerland have long been entitled to a pension after a certain number of years of service, specified by law, is both correct and incorrect. It is true that after a certain term of faithful service they could resign and continue to draw a fraction of their salary—i. e., live on a pension. But this so-called pension was, to a large extent, money which the teachers had paid into the pension funds during their term of service. This was the rule until recently, but now State and communal governments have come forward to increase these funds by annual appropriations. This appreciation of the teachers' past services has during the last twenty years increased to such an extent in several States of central Europe that contributions to the pension funds on the part of the teachers have ceased, and the State and the communities now bear the entire burden. This is quite in harmony with other measures of social legislation inaugurated by Prince Bismarck, such as compulsory accident and invalid insurance for laborers, old-age pensions for

workingmen, and others. But that the State and communities pay the teachers' pensions exclusively is by no means the general rule, though the trend may be that way in all continental European States. A statement concerning the laws and practices governing the payment of pensions to teachers in central Europe, based upon a compilation by Prof. J. Tews, of Berlin, may be welcome, since the question of pensioning teachers is of importance in this country, as is seen from various legislative enactments of recent years. (See Report of 1894–95, pp. 1079 to 1113, and of 1895–96, pp. 1343–1350.) With few exceptions (such as Würtemberg) the provisions concerning pensions are the same for male and female teachers; hence for the sake of brevity the pensioning of "teachers" is referred to in tables.

General Remarks.

The pensions at present paid in most countries advanced in education are not salaries for past services in the strict sense of the word; but the required amount accrues, wholly or partially, from contributions of those benefited. Pension funds in that case are really only life-annuity funds under the control of the State or community. Even in States where this subject has made the greatest progress, in Prussia among others, the payment of pensions was not at first included in the question of school appropriations. It is only during the last few decades that teachers and officers themselves no longer contribute to this fund. In some countries (England and a few of the Swiss cantons) pensions were unknown until very recently. Teachers and school officers themselves provided for their old age by saving or taking advantage of benefit societies, annuity and life-insurance companies.

The great differences which appear in the following statements are explained not only by the various degrees of difference in providing for educational necessities, but also in the difference of social views maintained by separate nations and the consequent conditions of industry and living. In England everything is referred to personal responsibility, consequently pensions were things unknown until recently. In Switzerland a similar condition is brought about by the autonomic government of the people, often rather economical on such questions as pensions for civil officers. In the Romanic countries citizens engaged in industrial pursuits retire earlier than in Germanic countries; the laws, therefore, provide for a shorter time of service for teachers.

Theoretically considered, free pensions—i. e., salaries for past, not current, services—are open to objections. They complicate the question of salary considerably, in so far as an officer entitled to a pension and to a claim of provision for his family in case of his death can hardly compare his resources with those of other salaried persons. Neither can such contrasts be easily brought to bear justly on claims for higher salaries. Practically considered the usual result is plain, that in regulations respecting salaries the benefits of pension claims are estimated entirely too high; 6 to 7 per cent of the salaries of teachers of elementary schools in Prussia would cover the amount paid out to present pensioners. Because of this sum the salaries must be rated higher in order to compare them with incomes not subject to pension claims. Where provision for widows is also a matter of public expense, a corresponding numerical relation must likewise be established for it. In Prussia this amounts to about 3½ per cent of the salary for teachers of elementary schools. From this it is plain that in comparing the salary of a Prussian teacher with that of an American teacher, for instance, about 10 per cent should be added to the former.

2. Conditions Governing Pensions for Teachers of Elementary Schools in Prussia.

(*a*) *Provision for retired teachers until the year 1885.*—During the first half of the past century no state had made provision for teachers in their old age. They either worked until their death, or, when too old and decrepit, were cared for by their successors, a considerable portion of whose small income and restricted quarters were perforce given over to their predecessors. In the second half of the century conditions were only little better; they had not improved any in Prussia. For instance, when in 1773 many incompetent teachers within the province of Brandenburg lost their positions, Minister von Zedlitz proposed to the King that their fixed salaries should be paid until the time of their death. The great King Frederick II, however, could not decide upon such a resolution, and directed them instead to continue their trades in the small cities. (Teachers of elementary, especially rural, schools at that time being tailors, carpenters, blacksmiths, etc.) The Prussian Government did not establish stable regulations until much later. A ministerial decree of August 9, 1819, says that the regulations of the general statute, part 2, chapter 11, paragraph 522, which among other things order the pensioning of the clergy, "should also be applied to teachers." In pursuance of paragraph 529, pensions must be taken out of the revenues of the office in such a way that the retired teacher receives one-third and his successor two-thirds of these revenues. This principle was maintained in the pensioning of teachers for a long time. Nevertheless, views on this subject seem to have been very uncertain. According to a ministerial enactment of August 17, 1827, there is no question of doubt but that every teacher of an elementary school whom age or sickness has rendered incapacitated and in need must be supported by the community. His successor can not be obliged to deliver any of the revenue of the position over to him, for the regulations that enforce this in cases of ecclesiastical positions are nowhere extended to apply to teachers' positions. In this enactment the right of the Government to demand the payment of a pension to teachers from the community is founded on the "right of the Government to define the limit of support for the poor of any one locality according to circumstances," * * * "without taking into consideration the usual fund appropriated annually for the support of the poor." The pensioning of teachers consequently was considered under the head of care for the poor. In 1835 (decree of August 17) the Government returned to the one-third of the salary attached to the position and abided by that regulation. (See also decree of April 10, 1840.) In the last two decrees the cooperation of the community is required only in cases where the salary of a position does not admit of a reduction by one-third. The provision for retired teachers remained on this basis in Prussia up to 1885, while in Würtemberg, for example, as early as 1840, the pension, after a term of service of ten years, was fixed upon 50 per cent of a salary of 250 florins (or about $120), and 20 per cent of all amounts over and above that sum.

(*b*) *The regulation of teachers' pensions in Prussian school bills (proposed legislation).*—In the school bills prepared by the Prussian ministers of education, various ways of adjusting the question of pensions have been pointed out. The bill of 1819 defined, among other things, that "the support of retired teachers should be derived from the means that maintain the school at which they were stationed." Where the community is too poor the State should assist with extraordinary benefices. For the rest, the prospective law concerning the pensions of civil State officers is referred to. According to the school regulation for the province of Prussia (December 11, 1845), decreed by Minister von Eichhorn, "a teacher rendered incompetent, by no fault of his own, shall receive one-third of his salary as a pension, which may be paid in part in commodities (vegetables, fuel, etc.).

The sum shall not be less than $37.50 a year, after a term of service of twenty years. The pension shall be derived from the revenues of the position as far as is possible without decreasing the lowest fixed salary of the new teacher. All deficiency must be made up by the means available for maintaining the school." The department of education, presided over by Minister von Eichhorn, endeavored to make this regulation apply to the whole country, as similar provisions in the bill for a school order for Brandenburg prove. How little this corresponded to the wishes of teachers we see from the resolutions passed by district and provincial teachers' meetings in 1848. They demand, among other things, that as regards pensions teachers should be on an equal footing with other officers of the State (meetings held in Brandenburg, Pomerania, Silesia, Saxony, Westphalia, and Rhenish Prussia); the amounts of pensions should increase only at longer intervals (meeting held in the province of Prussia); the State should guarantee every teacher a pension of at least $75 (meetings held in Pomerania and Rhenish Prussia); the smallest pension should be $187.75 (meeting in Saxony); after twenty years every teacher should receive one-fourth, after twenty to thirty years one-half, after thirty to forty years three-fourths, and after forty years the whole of his salary as a pension (meeting in Posen); no teacher should suffer any loss of salary to pension his predecessor (meeting in Westphalia).

The proposed school law of Minister Ladenberg (1850) did not respond to these resolutions. It passed over pensions in silence; this is the more significant, since on the 28th of May, 1846, the Government had regulated by law the pensions for State officers according to salary and time of service. On the other hand, the bill of Minister von Bethmann-Hollweg provided for teachers a pension increasing with length of service (one-third after twenty years, one-half until the thirtieth year, and two-thirds after thirty years of service). The costs were to be defrayed by the community and the teachers (the latter with contributions amounting to 1 per cent of their salary). A pension fund was to be established in every county (Regierungs-Bezirk). Under the ministry of Von Mühler, the Prussian house of deputies resolved on March 24, 1863, "That the same principles shall apply to pensions for teachers of elementary schools as apply to those of other officers of the State. The pension of a teacher shall not be deducted from the salary of his successor; it shall rather be derived from contributions of teachers and appropriations made regularly by the State and the communities." In December, 1867, Minister von Mühler himself presented before the Diet "A bill relating to the pensioning of teachers of public elementary schools, and defining pension claims," in pursuance of which teachers were to receive a pension of no less than 50 thalers ($37.50) after fifteen years, 100 thalers ($75) after thirty years, and 120 thalers ($90) after forty years of service. With a salary of more than 200 thalers ($150) the retired teacher was to receive one-third of the excess in addition as a pension. These provisions were also contained in Von Mühler's bill of 1863, only that the pension for the time from the sixteenth to the thirtieth year of service was raised from 50 to 60 thalers ($37.50 to $45). That this bill shared the fate of all its predecessors, that is, failed to be passed, is a matter of history. (Prussia has not, to this day, a general school law. The ministry, or department of education and worship, governs the school by decrees and regulations.) Until the enactment of the law of July 6, 1885, which regulates salaries and pensions only, teachers in the greater part of Prussia were obliged to rest content with the old custom of curtailing the salary of the successor by one-third. It was only when the pension law of 1885 went into effect, that other rules and principles, in part rather favorable, began to govern conditions in Silesia and the new Prussian provinces (Hanover, Nassau, Sleswic-Holstein, etc.).

A basis for comparison of the actual condition of retired teachers is furnished by the following figures taken from the printed records of the Prussian house of deputies. In the spring of 1881 there were 3,575 retired teachers who collectively

drew $430.709 in pensions and $121,200 from State funds. The pensions averaged $155. Of all the pensioned teachers 8.73 per cent received $75, 50.88 per cent from $75 to $150, 37.42 per cent from $150 to $225, and the remainder over $225. The progress attained in consequence of the pension law of 1885 is shown in the following statement: In the year 1891, pensioned male teachers numbered 5,691; females teachers 400. At the same time, the pensions amounted to $1,492,296, of which the State paid $878,115, an average of $245. Besides, the State pays out $202,000 as a relief fund to those teachers who were pensioned before April 1, 1886. In 1867 all that the State paid for this purpose, including subsidiary relief, amounted to no more than $6,000; in 1877 this had increased to $75,000; in 1887 to $787,500, and according to the statement for 1897–98 the State's contribution had reached the sum of $1,389,500.

(*c*) *The pension law affecting male and female teachers of public elementary schools in Prussia.*—The most important provisions of the law of July 6, 1885 (the last law signed by Emperor Frederick, the passage of which he was impatiently awaiting while on his deathbed), are as follows: A service of ten years entitles to a pension. Should the inability of teacher be the result of sickness, wounds, or other physical harm, either suffered in the practice of his profession or occasioned by it, without fault of his own, he is entitled to a pension within a shorter term of service than ten years. In that case the pension amounts to fifteen-sixtieths of the salary. At the age of 65, teachers may retire, even if still able to serve. Should they retire at the end of the tenth year of service, but before the eleventh, the pension amounts to fifteen-sixtieths of the salary, and increases by one-sixtieth of the same for every successive year of service. There is no increase beyond forty-five sixtieths of the salary. Teachers who become disabled before the close of the tenth year of service, even if their disability be not traceable to the practice of their profession, may, in case of necessity, receive a pension for a stated time, or for life, amounting to not more than fifteen-sixtieths of the salary. Pensions up to $150 are paid out of the State treasury; those over and above that amount are to be defrayed by the authorities upon whom the obligation of pensioning teachers has hitherto rested; and if that be impossible, by those who maintained the teacher in service. The income of a teacher's position may be drawn upon for pensioning his predecessor only in so far as has been valid heretofore (this has never been the case in Nassau and Sleswic-Holstein), and never to such an amount that it should fall below three-fourths of its stated amount per annum, nor below the rate of the smallest fixed salary. The law therefore sets aside the use of revenues of positions to cover the pensions attached to it. After the law went into effect these sums increased considerably; from $37,816 in the year 1855 to $77,607 in 1891.

(*d*) *The law of July 23, 1893, which created special pension funds.*—By this recent law Prussia created an individual organization, the so-called pension fund, for the payment of pensions not covered by the State's contribution ($150 for every pensioner being the limit of the State's subsidy). Such funds are established in every county (Regierungs-Bezirk). All who are taxed for school support pay for every position an equal percentage of the salaries, minus $200, which percentage is calculated according to the requirements of the community for all positions within its jurisdiction. For instance: If the prescribed assessments amount to 6 per cent for the year in question, the county's contribution for a position commanding $750 is found to be $33 over and above the fixed State pension of $150. (Mode of calculation: $750 minus $200 equals $550, at 6 per cent equals $33.) These special pension funds are like our customary sinking funds, for which a tax is levied according to the requirements of the year. By doing away with all contributions from the teachers, except so far as they are taxed like other citizens, the law places them on an equal footing with other State officers and with teachers of secondary schools.

(*e*) *The pension law of June 11, 1894, for teachers of intermediate or advanced elementary schools.*—The law of June 11, 1894, provides the same pensions to which State officers are entitled, for all male and female teachers of public intermediate schools of Prussia. To this category of schools belong girls' high schools, advanced elementary schools, burgher schools, etc. Only two of these classes are State schools; all the remainder are private or communal schools.

3. Pensions for Teachers of Elementary Schools in Other German States.

Bavaria has no law providing for uniform pensions. A pension association, legally supported by subventions from governmental districts and the State, is established by law in every district. Male and female teachers pay an initiation and a yearly subscription fee. In Upper Bavaria the initiation fee is 18 marks ($4.50); in Lower Bavaria, 24 marks ($6); in the lower Palatinate, 100 marks ($25); in the upper Palatinate only 10 marks ($2.50); in upper Franconia, 6 marks ($1.50); in central Franconia, 5 marks ($1.25); in lower Franconia, 7 marks ($1.75); in Swabia, 20 marks ($5). The annual subscription fee is for the same provinces as follows: 15, 24, 10, 14, and 9 marks, 1 per cent of the pension, and 12 marks, or in dollars: $3.75, $6, $2.50, $3.25, and $1.75, and 1 per cent of pension, and $3.

The pensions amount to—

(*a*) *For male teachers.*

Provinces of Bavaria.	Years of service.									
	1-5.	6-10.	11-15.	16-20.	21-25.	26-30.	31-35.	36-40.	41-45.	Over 45.
Upper Bavaria	$210	$210	$225	$240	$254	$270	$292½	$317½	$350	$350
Lower Bavaria	225	225	225	225	243	261	279	272	325	325
Lower Palatinate	202	210	213	240	252½	270	285	300	310	310
Upper Palatinate	228	228	228	228	243	258	273	288	313	313
Upper Franconia	225	235	250	262½	275	287½	300	312½	325	337½
Central Franconia	225	225	225	245	265	285	305	325	350	350
Lower Franconia	225	225	225	225	250	250	275	300	325	350
Swabia	225	225	225	225	250	250	275	300	325	350

(*b*) *For female teachers.*

Provinces of Bavaria.	Years of service.			
	1-10.	11-20.	21-30.	Over 30.
Upper Bavaria	$210	$210	$232½	$255
Lower Bavaria	150	165	180	180
Lower Palatinate	180	210	240	245½
Upper Palatinate	192	192	192	192
Upper Franconia	187½	225	250	250
Central Franconia				
Lower Franconia	175	175	200	225
Swabia	175	175	200	225

The pensions of female teachers are quoted from the official statement of 1893. Since then some advances have been made. Thus, for instance, in Upper Bavaria the pensions for female teachers at present (1898) amount to $210 for the first to the tenth, $222 for the tenth to the fifteenth, $234 for the fifteenth to the twentieth, $246 for the twentieth to the twenty-fifth, $258 for the twenty-fifth to the thirtieth, $276 for the thirtieth to the thirty-fifth, $295 for the thirty-fifth to the fortieth, and $322 after the fortieth year of service.

Würtemberg.—In this kingdom teachers of elementary, or so-called people's, schools are entitled to a pension when they are permanently employed, or from the beginning of their twenty-fifth year of age, should their appointment be deferred. (Previous to their definite assignment to a position they are employed as

assistants.) At the commencement of the tenth year of service the pension amounts to 40 per cent of the salary and increases with every successive year of service by 1¾ per cent of salaries up to $600, until the highest rate of 92½ per cent, and by 1½ per cent of salaries above $600, until the highest rate of 85 per cent is attained. Free residence and compensation for rent are excluded in computing the pension—that is to say, the cash received in the form of salary alone forms the basis of computation. Women teachers are not pensioned, but receive a gratuity of 40 to 50 per cent of their salary (without residence). A change in this provision is under consideration. Pensions to teachers are paid by the state and do not increase after the fortieth year of service (sixty-fifth year of life).

Saxony.—In the Kingdom of Saxony the same regulations for pensions apply to the teachers of elementary schools as to those of secondary schools. Teachers are entitled to a pension after the completion of their tenth year of service. At the close of the sixty-fifth year of age, or after forty years of service, any teacher is allowed to retire, or he may be retired by the royal authorities with a pension. If within the first ten years of service a teacher is rendered unable to continue in service by sickness contracted through no fault of his own, and outside the practice of his profession, he is entitled, in case of need, to receive a gratuity not exceeding the lowest pension. If within the first ten years of service a teacher becomes incapacitated through an unavoidable accident suffered in the practice of his profession, he receives the lowest pension without consideration of his being in needy circumstances. The pension amounts to thirty one-hundredths from the eleventh to the fifteenth year of service, and increases by one one-hundredth each year from the fifteenth to the seventeenth, amounting therefore to thirty-two one-hundredths; each year from the eighteenth to the twenty-fifth, inclusive, it increases by two one-hundredths; hence the pension amounts to forty-eight one-hundredths at the close of the twenty-fifth year. From the twenty-sixth to the thirty-second year, inclusive, the pension increased three one-hundredths each year, which makes it sixty-nine one-hundredths; again it increases two one-hundredths each year from the thirty-third to the thirty-fifth year, inclusive, which raises it to seventy-five one-hundredths, and finally the increase is one one-hundredth each year from the thirty-sixth to the fortieth year, inclusive, so that at the close of the fortieth year the pension amounts to 80 per cent of the salary. There is no further increase.

Baden—Paragraph 35 of the statute relating to civil service in this State contains the provision that "in cases of retirement after the tenth year of service but before the completion of the eleventh, the pension shall amount to 30 per cent of the sum representing the officer's income before retirement, and increase by 1½ per cent of this sum with every completed year of service. The estimated income consists of (1) the regular cash salary, (2) the estimated amount of rent, (3) the regulated estimate of fluctuating tuition fees, and (4) the estimate of collaterals, such as free dwelling, fuel, etc. A pension may be claimed within a shorter term of service than ten years in cases where sickness, wounds, or other personal harm can be proven to have been suffered either in consequence or in the discharge of professional duties. A pension shall never exceed 75 per cent of the estimated income. In the consideration of a pension the full time of service is taken into question. Only completed years of service are considered. The time given to State service before completion of the applicant's twentieth year of age, or a leave of absence for at least one entire year, is not included in the term of service. Time in active service in other countries or States than Baden is counted in." These regulations refer to regular female teachers, to teachers of handiwork and domestic schools, etc., also.

Hessia.—In this State permanently employed teachers whose disability results from no fault of their own draw a pension within the first ten years of service amounting to 40 per cent of their income, and increasing by 1½ per cent with

every successive year until it amounts to their salary in full. Inadequate amounts are proportionally increased to prevent the pensioner from falling into want.

Mecklenburg-Schwerin.—In this State a pension law exists for teachers in schools for the aristocracy only. After twenty years' service these receive a pension amounting to 20 per cent of the lowest salary, $225. After forty years of service the pension increases to 75 per cent; after fifty years, to 90 per cent of that amount; hence, not as in other States, to a certain percentage of the salary last received. According to a standard set by the Government the same percentages prevail in the schools maintained by the people, but on the bases of the actual cash salaries of $150, $175, and $200 to $325. A pension bill for cities has been lately rejected by the State legislature. The larger cities establish fixed standards through local authorities; in Schwerin, for instance, they are similar to those in the rural districts; in Parchim the rules for the State officers' pensions apply. Smaller cities with definite standards are isolated cases, and they often oppose all payment of pensions to teachers. A bill for pensioning female teachers is before the legislature.

Mecklenburg-Strelitz.—The conditions governing pensions for teachers in this State are not regulated by law or regulations. Each case of retirement is treated individually.

Oldenburg.—Within the first ten years of service pensions amount to 40 per cent of the salaries last received, and increase 1½ per cent each successive year up to 80 per cent. Teachers contribute 2 per cent of their salary toward the pension fund.

Saxe-Weimar.—The pensioning of teachers of elementary schools comes under the State service law, in pursuance of which the maximum pension of 80 per cent of the income is received after thirty-seven years of service.

Brunswick.—After five years of service a pension amounts to 33⅓ per cent of the salary last received, and increases by 1½ per cent with every successive year until the salary in full is paid as a pension after fifty years of service.

Anhalt.—The permanent appointment of a teacher entitles him to a pension. At the end of the fifth year of service a pension amounts to one-third of the income, and increases by 1½ per cent every successive year. A pension never exceeds the amount of cash income. With fifty years of service it reaches its maximum, the salary in full.

Saxe-Altenburg.—Until the end of the eleventh year of service a pension amounts to 34 per cent of the salary, after which it increases by 1½ per cent every successive year, consequently up to 76 per cent at the end of the thirty-eighth year, subsequently by 2 per cent up to the maximum of 88 per cent, which is received at the close of the forty-fifth year of service. The term of service is reckoned from the twenty-fifth year of age. Permanently appointed teachers are entitled to a pension of $75 if disabled before they reach the twenty-fifth year of age. Teachers who have completed their forty-fifth year of service, or their seventieth year of age, are entitled to retire without special proof of inability, or may receive honorable discharge without application. The same pension law (that of December 22, 1875) applies to female teachers.

Coburg.—The honorable discharge of a teacher of elementary schools follows upon application if he has completed his fortieth year of service and sixty-fifth year of age, or takes effect without application on his part if he can prove that he has been incapacitated for professional duties because of incurable mental or physical weakness contracted through no fault of his own. A retired teacher draws a pension based upon his term of service and the estimated remuneration, including free residence, attached to the position which he last held. At the end of ten or fewer years of service the pension amounts to 40 per cent of the estimated pay. For every successive year or fraction thereof it increases by 1½ per cent. A pension never exceeds the salary in full. In case a teacher honorably discharged becomes again able to resume his professional duties before the close of his fortieth

year of service and sixty-fifth year of age, he can be again appointed. As a matter of course, his appointment means but a partial continuance of office, in connection with which his pension is taken into consideration.

Gotha.—The pension law, in all essential points, is similar to that of Coburg.

Meiningen.—Within the first ten years of service a pension amounts to 60 per cent of the salary, and increases by 1½ per cent with every successive year until the full amount of the salary last commanded is received. At the end of his fiftieth year of service a teacher is entitled to a pension of a salary in full without proving inability.

Reuss, senior line.—Within the first ten years of service a pension amounts to 40 per cent of the income, and increases by 1½ per cent with every successive year until it amounts to 80 per cent of the salary last received. Teachers pay an annual subscription of 2 per cent of their salary toward maintaining the pension fund.

Reuss, junior line.—The pensioning of male and female teachers is regulated by the law of October 9, 1891. The pension percentages are the same as in the other state of Reuss. In determining the age at which pension may be received all facts relative to the first appointment are taken into consideration. No one can receive a pension before he is twenty-one years old.

Schwarzburg-Sondershausen.—Pensions are prescribed by the civil-service law of 1850. Within ten or fewer years of service the pension amounts to 40 per cent of the salary; for every successive year or fraction thereof a pension increases by 1½ per cent until the maximum of 80 per cent is attained. A teacher who has completed his fortieth year of service or seventieth year of age may retire and claim his legal pension. The term of service is reckoned from the beginning of the twenty-second year of age. The conditions that govern the pensions for female teachers are regulated by the law of July 17, 1897, according to which those who have completed their thirty-fifth year of service or sixty-fifth year of age may retire and claim the legal pension. This is determined on the same basis as that of male teachers. The term of service is reckoned from the time of permanent appointment.

Schwarzburg-Rudolstadt.—Here pensions increase from 40 per cent of the salary after ten years of service to the amount of the salary in full after fifty years of service.

Lippe.—Teachers' pensions are defined by the general pension law for civil service. After ten years of service the pension amounts to 40 per cent and increases by 1½ per cent with every successive year up to 80 per cent of the salary.

Schaumburg-Lippe.—After ten years of service teachers receive a pension of 30 per cent of their income. From the tenth to the thirtieth year the pension increases annually by 1 per cent as high as 50 per cent. From the thirtieth to the forty-fifth year it increases annually by 2 per cent up to the maximum of 80 per cent. The same regulations apply to female teachers with permanent appointment.

Waldeck.—After a service of ten years a pension amounts to one-third, from the eleventh to the twenty-fifth year to one-half, and subsequently to two-thirds of the regular income. The equivalent for residence and fuel is included.

Bremen.—Pensions for male and female teachers amount to 40 per cent of the salary after ten years' service, and increase annually by 2 per cent, as high as 80 per cent.

Lubeck.—A pension can be claimed after ten years of service, when it amounts to one-third of the salary, increasing by one-sixtieth until the maximum of forty-five-sixtieths, is attained, after a term of thirty-five years of service. The same regulations apply to permanently-appointed female teachers.

Hamburg.—Teachers who have completed their thirty-fifth year of age may claim a pension after at least ten years' service. If disability is occasioned by sickness or physical harm suffered in consequence and in the discharge of professional duty,

and without grievous fault of his own, a teacher may retire before the completion of his tenth year of service, or thirty-fifth year of age, and claim a pension amounting to 40 per cent of the salary. In other cases, where an officer becomes disabled before his tenth year of service, or thirty-fifth year of age, and is in need, he may claim either a single relief payment or payments of that kind for an indefinite time, even for life; these, however, can not exceed 40 per cent of the salary. If honorable discharge is granted at the close of the tenth year of service, the pension amounts to 40 per cent of the salary, and subsequently increases for every successive year of service, with salaries of $500 and over $500, respectively, 2 per cent and 1½ per cent of those salaries which were received at the time of pensioning, until the full amount is realized. When, in cases of a salary above $500, the pension thus calculated is less than the sum which the applicant would have received with a salary of only $500, the pension is computed on the latter sum as a basis. The income on which the pension is calculated includes, besides the regular salary and age gratuities, certain legally-granted personal addenda, as residence, or the equivalent thereof, and the value of partial or entire board allowed for the position, garden land, lawful fees and "tantièmes," exclusive of gratifications, office expenses, traveling expenses, horse hire, and other incidentals. When its equivalent is not otherwise legally defined, office room is calculated at 20 per cent of the regular salary, exclusive of age gratuities. In calculating the amount of pension, the term of service which entitles to a pension begins with the first year, provided the teacher be 25 years old when permanently appointed. In other cases at the close of the twenty-fifth year of age.

Alsace-Lorraine.—Permanently appointed male and female teachers receive a life pension, if after a term of service of at least ten years they are disabled for their position because of physical infirmity or mental debility. If disability is the result of a disease, a wound, or other physical harm unavoidably suffered in consequence, or in the discharge of professional duties, a teacher is entitled to a pension within a shorter time than ten years. After the sixty-fifth year of age a pension may be claimed or allowed without consideration of disability. If honorable discharge is given after ten years of service, but before the end of the eleventh year, the pension amounts to fifteen-sixtieths of the salary, increasing by one-sixtieth up to forty-five-sixtieths—the maximum. The time of service before the twenty-second year of age is not taken into consideration. According to the law of March 29, 1889, the pension is calculated on the salary last received. If, on account of special grants, calculations are based upon a salary exceeding that stipulated, the legal salary appertaining to the one in question is reckoned upon unconditionally; the consideration of the sum in excess, however, is governed by its average during the last six calendar years preceding the one in which the teacher receives his honorable discharge. Additional receipts, *i. e.*, residence and pay for ecclesiastical services, do not affect pensions. (Law of December 22, 1873.)

4. Pensions for Teachers of Elementary Schools in Other European Countries.

(*a*) *Austria.*—Teachers who are disabled within ten years of service receive one relief payment of 150 per cent of their annual income. The payment of pensions begins with the eleventh year of service. Pensions begin with a third of the salary and increase up to the full amount, which is realized at the end of a term of service of forty years.

(*b*) *Hungary.*—The full claim to a pension is established at the close of the sixty-fifth year of age and the fortieth year of service. Teachers of elementary schools receive $150; those of advanced and burgher schools $200.

(*c*) *Switzerland.*—See notice under pensions for teachers of secondary schools.

(*d*) *Denmark.*—Permanently appointed male and female teachers are entitled

to a pension after they have served ten years and are thirty years old. The pension increases until as high as two-thirds of the average salary received during the last five years of service.

(*e*) *Norway.*—Pensions for teachers and other civil officers are under the control of the Storthing (Parliament) and subject to individual decision.

(*f*) *Sweden.*—The payment of pensions begins after ten years of service. The highest pension, which amounts to 75 per cent of the income, but may not exceed $250, is received in the fifty-fifth year of age, and after thirty years of service. Pensions paid before this time decrease by 1 per cent for every year less than 30.

(*g*) *The Netherlands.*—A teacher is entitled to honorable discharge at the age of 65, and after forty years' service. The highest pension amounts to two-thirds of the salary; the rate of increase is one sixtieth per annum. Pensions are paid by the State.

(*h*) *Belgium.*—All teachers who have attained the age of 60, and have served thirty years, as well as those who, through no fault of their own, have become disabled after 12 years of service, have the right to be pensioned. Teachers who accordingly can not claim pensions receive relief payments from the pension funds. For city teachers there is a central fund; for teachers in the country special funds have been established in the principal cities, out of which pensions for widows and orphans are paid. For the benefit of these funds 3 per cent of the teacher's income, and also from one-twelfth to one-fourth of special grants are annually deducted. These funds receive, besides provincial contributions, State appropriations and special grants.

(*i*) *France.*—According to the law of August 17, 1876, teachers are entitled to a pension after they are 55 years old, and have served twenty-five years, unless infirmity has disabled them before that time. From the twentieth year of age on, the years spent at the normal school, after receipt of the teacher's diploma, are included within the term of service. On the other hand, time spent in private instruction is never taken into consideration. After twenty-five years of service the pension amounts to one-half of the average salary (*i. e.*, the average of salaries received during the six years preceding his discharge); increases by one-fiftieth of the salary for every successive year, but never exceeds three-fourths of the average salary. On the other hand, a pension is never less than $120 for male and $100 for female teachers. This minimum does not apply to cases of disability because of infirmity of any kind.

(*k*) *Italy.*—In consequence of the law of 1878 a pension fund has been established for teachers of public elementary schools, which benefits those teachers who have attained the age of 55. Others depend upon mutual assistance, for which purpose private associations have been formed.

(*l*) *Great Britain and Ireland.*—Teachers of elementary schools, as well as those of secondary schools, receive no legal pension. But pensions and annuities are paid by beneficial societies and insurance companies. These societies have become very strong of late.[1]

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[1] Since the publication of the foregoing statement in Rein's Encyclopedia, the teachers in England have succeeded in securing by legislative enactment a pension law called the "Superannuation act."

"It provides mainly that teachers shall make premium payments into a fund of £3 ($15) a year in the case of men and £2 ($10) a year in the case of the women. The teachers' contributions are increasable, as time goes on, by an amount not exceeding 5s. ($1.25) a year for each full 10 per cent increase in the average salaries beyond the average for the year 1892. These premium payments will be received and invested by the national debt commissioners. Actuarial inquiry is provided for every seven years. To the annuities brought by the teachers' premium payments the State will add a sum equal to 10s. ($2.50) per year for every

5. Pensions for Teachers of Secondary Schools in Germany.

(*a*) *Prussia.*—A general regulation governing conditions of pensions for teachers of secondary educational institutions was issued in the year 1846. The pension fund was partly raised by contributions from those benefited. Teachers paid their first month's salary after permanent appointment, and in case of promotion one-twelfth of their annual increase, consequently a month's salary, together with the subsequent annual assessment of 1 per cent to 1½ per cent of their salary. These conditions were set aside by the pension law of March 27, 1872, now in force and modified by the amendments of March 31, 1882, and April 30, 1884. The present regulation is, in all essential points, the same as for teachers of elementary schools, according to the laws of July 6, 1885, and July 23, 1893. Compare previous paragraphs. The last-named law includes all teachers and officers of gymnasia (classical high schools), Realschulen (modern high schools), normal schools, institutions for deaf-mutes and the blind, as well as technical and industrial and preparatory schools. Universities and other higher seats of learning are excluded. It is worthy of note that teachers of secondary schools maintained by the community and not under State control receive the full benefit of the law.

(*b*) *Bavaria.*—After a three years' provisional employment, pensions during the first ten years of service amount to seven-tenths, during the second to eight-tenths, and during the third to nine-tenths of the fixed salary. At the end of the seventieth year of age, which equally with the fortieth year of service justifies

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year of 'recorded service.' In the case of existing teachers, the State subsidy to the annuity will be augmented 'in the case of a man by threepence and in the case of a woman by twopence, for each complete year of recorded service served before the commencement of this act.'

"A vitally important feature of the scheme is that which provides for the granting of 'breakdown allowances.' Where a teacher satisfies the treasury that he has served not less than ten years, and not less than half the years which have elapsed since he became certificated, and becomes permanently incapable owing to infirmity of mind or body, the treasury may grant an allowance not exceeding—

"(*a*) If the teacher is a man, twenty pounds for ten complete years of recorded service, with the addition of one pound for each complete additional year of recorded service.

"(*b*) If the teacher is a woman, fifteen pounds for ten complete years of recorded service, with the addition of thirteen shillings and four pence for each complete additional year of recorded service; and

"(*c*) In any case, the total annual sum which the teacher might obtain from an annuity or superannuation allowance under this act, by continuing to serve until the age of 65 years.

"The value of the act will largely depend upon the manner in which this 'breakdown' scheme is administered.

"Service under the act is obligatory upon future teachers. Existing teachers are to have the option of a year from the commencement of the act to say whether they will or will not join the fund. Retirement, unless an extension of service be especially granted by the educational department, will take place at the age of 65 for both men and women. The act comes into operation on 1st April next, and applies to Scotland. If a Scotch teacher joins the fund, then his school board may not grant him a pension allowance as under section 61 of the Scotch act of 1872. Pensions and allowances will be paid quarterly. No grant of any allowance will be made to any teacher who at the commencement of this act is in receipt of a pension out of moneys provided by Parliament for the service of education." (Extract from the "Schoolmaster," London.)

the highest pension claim, the full salary is received. Since the year 1894 assistants come under the pension regulations for nonactive officers, such as supervisors, clerks, etc.

(*c*) *Würtemberg.*—At the beginning of the tenth year of service a pension amounts to 40 per cent of the salary, inclusive of age gratuities, but exclusive of allowances for residence. Until the fortieth year of service a pension increases annually by 1¾ per cent as high as 92½ per cent in cases where the salary is not higher than $600. The rate of increase is 1½ per cent as high as 85 per cent with salaries over $600. No pension can exceed $1,500. A teacher who becomes incapacitated at the end of his ninth year of service may claim a life pension from the State treasury. If disabled before that time he is entitled to a relief allowance, which is paid only once. The State can order the pensioning of a teacher without his application or consent, if he has attained his sixty-fifth year of age and is hindered by age in the exercise of his duties, or has become disabled through physical infirmity or mental debility, or when sickness incapacitates him for longer than a year. On the other hand, no teacher can claim honorable discharge for life. The pension and widow fund claims 25 per cent of the first year's salary and 2 per cent initiation fee at the first permanent appointment, and 25 per cent of the allowance, whenever a salary is increased, together with 2 per cent of the salary received, as regular contribution.

(*d*) *Saxony.*—In consequence of the law of May 26, 1868, a general pension fund, to which teachers and the State contribute, has been established. The law of April 9, 1872, provides for pensions at the close of the tenth year of service. After forty-five years of service the highest pension of 80 per cent of the salary last received is realized. The law of March 25, 1892, somewhat improved conditions. The first pension, it is true, was, in consequence, reduced from 33 to 30 per cent, but the highest pension (80 per cent) is now received after forty years of service. The term of service is reckoned from the close of the twenty-fifth year of age, without regard to the fact whether the position held at that time of life was a permanent one or only that of a substitute. After forty years of service, or when 65 years old, a teacher may apply for honorable discharge, which he may also receive without his application or consent. Teachers' contributions toward pension funds were discontinued in 1899.

(*e*) *Baden.*—At the close of ten years of service a pension amounts to 30 per cent of the income, and increases each year by 1½ per cent until the maximum of 75 per cent is realized at the end of forty years of service. As is the case with all other officers, honorable discharge may be given at the close of the sixty-fifth year of age, or sooner in case of disability. A teacher can not claim a pension before he has completed his tenth year of service.

(*f*) *Hessia.*—Pensions may be received at the close of the fifth year of service; they then amount to 40 per cent of the salary. From the sixth to the tenth year they increase annually by 2 per cent; from the eleventh to the thirtieth year by 1½ per cent, and from the thirty-first to the fortieth year by 1 per cent.

(*g*) *Mecklenburg.*—There is no definite pension law in either Mecklenburg. In Schwerin, however, in accordance with fixed principles of administration, teachers of public schools, like all officers of the State, may claim a pension after twenty years of service, when it amounts to 50 per cent of the salary, increasing by 1 to 1½ per cent, until with the fiftieth year of service 90 per cent of the salary is received.

(*h*) *The smaller States of Germany.*—We can not give the details respecting the smaller States. The following table (p. 177) taken, from the statistical yearbook of secondary schools in Germany for 1897–98 (Leipzig, B. Teubner), states clearly the conditions of pensions for teachers in secondary schools throughout Germany.

Pensions paid teachers in secondary schools.

States.	Minimum.		Amount of pension in per cent of the salary after—			Maximum.		Annual dues.
	Begins after years.	Per cent of salary.	Ten years.	Twenty-five years.	Forty years.	Reached after years.	Per cent of salary.	
Prussia and Alsace-Lorraine	10	25	25	50	75	40	75	None.
Bavaria	4	70	70	80	90	----------	100	None.
Saxony	10	30	30	51	80	40	80	None.
Würtemberg	10	40	(a)	(a)	(a)	(a)	--------	None.
Baden	10	30	30	52.5	75	40	75	None.
Hessia	5	40	50	72.5	90	50	100	None.
Mecklenburg-Schwerin	20	50	--------	55	75	50	90	None.
Saxe-Weimar	0	40	40	62.5	80	36	80	None.
Oldenburg	0	50	50	65	80	50	90	None.
Brunswick	3	33⅓	40.8	63⅓	85.8	50	100	None.
Saxe-Meiningen	0	45	45	60	75	40	75	None.
Saxe-Altenburg	0	25	30	50	80	40	80	3 per cent.
Saxe-Coburg-Gotha	0	40	55	77.5	100	40	100	1 per cent.
Anhalt	0	33⅓	40.8	63⅓	85.8	49	100	None.
Schwarzburg-Rudolstadt	0	40	40	62.5	80	36	80	None.
Schwarzburg-Sondershausen	0	40	40	62.5	80	37	80	None.
Waldeck	0	33⅓	33⅓	50	66⅔	26	66⅔	None.
Reuss, senior line	0	40	40	62.5	80	37	80	None.
Reuss, junior line	0	40	40	62.5	80	45	80	None.
Schaumburg-Lippe	10	30	30	45	70	37	80	None.
Lippe-Detmold	0	40	40	62.5	80	37	80	None.
Lubeck	10	33⅓	38⅓	58⅓	75	35	75	None.
Bremen	0	40	40	70	80	30	80	None.
Hamburg	0	40	40	62.5	85	50	100	None.

a See the text.

6. Pensions for Teachers in Secondary Schools of Other Countries.

(*a*) *Austria.*—A pension may be claimed after eight years of service. With teachers three years are reckoned as four; consequently they receive the full salary as a pension after thirty years of service instead of forty, as is the case with other State officers. At the age of 65 teachers of secondary schools may retire on a pension amounting to the salary last received and additional personal allowances; after the seventieth year of age their honorable discharge is compulsory by law.

(*b*) *Hungary.*—Teachers of secondary educational State institutions may claim a pension of 40 per cent of their salary after ten years of service. From that time on the pension increases by 3 per cent annually, so that after thirty years of service the full salary is received, but without residence indemnification. Every teacher, however, is obliged to make one payment of a third of the excess of his salary over $120, as well as one-third of the amount of increase for every advance in salary. Since 1894 teachers of institutions not under State control are entitled to the same pensions.

(*c*) *Switzerland.*—The conditions governing pensions in the different cantons are so manifold that it is impossible to state them briefly. It may be well to mention, though, that in some cantons—Lucerne, for instance—pensions are not paid to teachers at all. Even in the advanced cantons the conditions are not favorable, and the people of the Swiss Republic are generally slow in acknowledging pension claims on the part of civil officers.

(*d*) *Denmark.*—Here each teacher's pension claim is decided by the minister of education, in accordance with the general pension law for officers. One-tenth of the salary may be received as a pension after two years of service. The maximum of two-thirds is obtained at the seventieth year of age.

(*e*) *Norway.*—Pensions for teachers are not regulated by law, but are specially granted in each case by the Storthing or Parliament.

(*f*) *Sweden.*—A teacher receives a pension after he is 70 years of age and has

served thirty years, or when he is 65 years old and has served forty years and a physician confirms the necessity of his being pensioned on account of ill health. For teachers of upper grades the pension amounts to $900; for assistants and teachers of lower grades, as well as preparatory grades, $800. If a regular teacher becomes disabled before his sixty-fifth year of age, he is required to pay for a substitute out of the salary, which he continues to draw, until he is old enough to receive his pension.

(*g*) *The Netherlands.*—Teachers of advanced burgher schools are entitled to a pension after ten years of service. The amount drawn increases annually by one-fortieth of the regular salary, until the highest amount of two-thirds is received. Teachers of secondary state schools must, within five years of their appointment, pay a full year's salary into the pension treasury. Teachers of communal schools, though receiving the same amount of pension, are exempted from this obligation. The pension law that applies to civil officers applies also to teachers of gymnasia, which, in the Netherlands, are communal institutions. For every year of service a pension amounts to one-sixtieth of the average income of the last sixty months of service.

(*h*) *Belgium.*—A pension for teachers of secondary schools is reckoned from the average income of the last five years of service; for every year additional one fifty-fifth of this amount is received. A pension never amounts to more than two-thirds of the income, or more than $1,000. Upon application, at the age of 55, and after thirty years of service, a teacher may retire and a pension is granted him. Teachers who become disabled before completing their tenth year of service are provided for as in Prussia.

(*i*) *France.*—Teachers of lycées are entitled to honorable discharge at the close of thirty years of service, but only after they have reached 60 years of age. The pension amounts to two-thirds of the average salary during the last five years of their service. With the first payment of salary, and with every increase, one-twelfth is deducted for the benefit of the pension fund. Besides 10 per cent of the salary is retained and turned into this fund during the whole time of service.

(*j*) *Spain.*—Regular teachers of secondary schools receive two-fifths of their highest salary for two years after twenty, three-fifths after twenty-five, and four-fifths after thirty-five years of service.

(*k*) *Portugal.*—Disability after ten years entitles a teacher to a pension of one-third, after twenty years to one of two-thirds of the salary last received. After twenty-five years of service honorable discharge with full salary can be claimed. When a teacher stays in office beyond twenty-five years his salary is increased by one-third; after a further term of service of ten years his pension amounts to the increased salary.

(*l*) *Italy.*—Teachers of secondary schools may retire from service for a period of months or years on account of ill health and still draw from one-half to three-fourths of their salary, according to the number of years they have been in service.

(*m*) *Greece.*—Teachers are entitled to two-fifths of their salaries after nineteen years and seven months of service. The pension increases annually by one-fiftieth. Seven and one-half per cent of the monthly salary of teachers is deducted for pensions.

(*n*) *Russia.*—The pensions for teachers of secondary schools are not uniform. In most parts of the Empire a principal draws $400, an inspector $350, teachers $300, and special teachers of German and French $275 pension after twenty-five years of service. In St. Petersburg, Moscow, Riga, Reval, Warsaw, Kiev, Kharkov, and in Caucasus pensions are higher. In the first four cities a principal draws $600, an inspector $450, and a teacher $375. Whoever is retained in service after twenty-five years draws a pension and a salary. The pension increases with every five years by one-fifth.

(*o*) *England.*—Pensions for teachers of secondary schools are almost unknown as far as the authorities are concerned, owing to the fact that nearly all secondary schools are private. Every teacher provides for himself through beneficial societies and life insurance companies. At a few distinguished public schools, Eton, for instance, pensions are paid.

IV. MANUAL TRAINING IN GERMANY.

It is interesting to note that the Germans are not as enthusiastically in favor of introducing manual training into the elementary schools as is commonly believed in this country, and that the extent to which it is practiced in the United States is much greater than in Germany. The attitude of the German teachers to the general introduction of this branch of education has been unfavorable. The same may be said with reference to the kindergarten, child study, and the study of domestic science for girls. But while manual training has little hope to become an integral part of public-school education for children of school age (6–14), it, as well as industrial and trade education, is taken up as a legitimate branch after school age—that is to say, the so-called continuation or supplementary schools take up manual training. The executive officers of the German National Teachers' Union have submitted the question for discussion in the various provincial teachers' meetings. The question is formulated as follows:

What position shall we take with reference to the introduction of manual training for boys and domestic economy for girls into the course of study of the public elementary school?

In order to provide the members with suitable material, the executive officers have published a symposium of resolutions passed by various bodies of teachers during recent years, and accompanied this symposium by a bibliography of the German literature on the subject. The publication is here reproduced in English:

I. Concerning the Position, Activity, and Resolutions of the German Society for the Advancement of Manual Training.

The proceedings of the congresses held under the auspices of this society are published annually by Dr. Götze, in Leipsic. The first congress was held in Munich, in 1888. The subjects discussed were: Courses of study and methods of manual training (F. Groppler). The movement in favor of manual training in foreign countries (v. Schenckendorff). Manual training in the service of general education (Dr. Götze). Manual training as a preparation for industrial education and industrial art (Dr. Grunow). Manual training viewed from the standpoint of political economy (v. Schenckendorff).

The second congress was held in Hamburg, in 1889. The following questions enlisted the attention of the members: What interest have the German teachers in promoting manual training? (R. Rissmann.)

What interest have wageworkers in promoting manual training among the young? (Dr. Brinkmann.)

The third congress, held in Strasburg, in 1890, discussed the following points: Essence and aim of manual training for boys (Dr. Götze). Is manual training to be made a separate branch of study in schools? (Fr. Groppler.)

The fourth meeting, held in Eisenach, in 1891, occupied itself with a statement of how manual training should be arranged for boys of 7 to 10 years (Hertel and Kalb).

The fifth congress was held in Frankfort on the Main, in 1892. The subjects discussed were: Shall manual training serve general education or special school instruction? (Dr. Götze.) Who shall conduct manual training? (Dr. Rohmeder.) The difference between the methods of manual training in Germany and France (P. Neumann). Amos Comenius and his relation to manual training (Fr. Groppler).

The sixth congress was held in Dantsic, in 1894. Subjects: Should manual training be introduced into the normal schools, and what are the experiences made in this respect in foreign countries? (Dr. Götze.) German manual training and its importance for popular education (Gothein and Schmedding). Manual training for boys adapted to rural conditions (G. Kalb).

The next and last congress was held in Kiel, in 1896. The subjects discussed were: The methods of manual training adopted by the Society for Manual Training (Dr. Götze). The revival of home industry in Sleswic-Holstein by means of manual training in school (Dr. Matthäi). The introduction of manual training into normal and elementary schools (Rümelin and Polack).

Since 1888, the German Society for Manual Training has published a monthly "Blätter für Knabenhandarbeit," in which the various theories and methods of manual training are discussed. This periodical is published in Leipsic.

II. Resolutions of Teachers' Associations Concerning Manual Training.

(*a*) The National German Teachers' Union in its meeting at Cassel, in 1882, passed the following resolutions after a thorough discussion of the question by Mr. Töpler, of Breslau:

(1) The meeting acknowledges the good and benevolent intentions which aim at the establishment of working schools for the purpose of training youth to become practical and active men, and thus to save them from falling into vicious, immoral habits.

(2) However, though recognizing the good intentions of these steps, we must emphasize (a) that the introduction of the workshop into our schools has not the same importance which it has in northern countries (Denmark, Sweden, and Finland) because the social and industrial conditions of our country are different. (b) A normal course of six weeks in manual training for teachers, or even a longer

term, will be entirely inadequate, and to employ artisans for this special branch is inadvisable for pedagogical reasons. (c) Our schools are institutions for the intellectual development of children (Lernschulen), workshops for intellectual work, and can not be changed if they are to come up to the demands of the time. They can not spare the time for new branches that will radically change the aspect of our schools. Moreover, the principle of harmonious education is fully taken care of in the course of study as it stands, since the training of the hand is attended to in various ways. (d) To burden the school with a greater number of hours of tuition per week, and to keep the children longer from home than at present, are matters for serious consideration.

(3) For these reasons a combination of workshop and school can not be recommended.

(4) For the promotion of German industry and skill in trades it is advisable to increase the existing technical, industrial, and trade schools and other professional institutions.

(5) To introduce the workshop into the public school would necessitate very considerable outlay, but it seems more advisable to provide the school with larger appropriations before the establishment of workshops is considered.

(*b*) The twenty-eighth meeting of the General German Teachers' Association, which was held at Augsburg in 1888, listened to two papers on the subject of manual training, which were exhaustively discussed. The following resolution was then passed:

"The meeting recognizes the educational importance of manual training, but does not consider the subject sufficiently matured to decide in favor of its introduction into the elementary and normal schools, and therefore postpones the decision to a subsequent annual meeting."

(*c*) The eighth meeting of the National German Teachers' Union, held in Berlin, was notable for its departmental meeting devoted to the question of manual training. Mr. Groppler read a paper which discussed the following theses: (1) Among the duties modern education has to perform, the development of a creative and formative activity by means of methodical training of hand and eye and the awakening of practical talents in the child are among the most prominent and imperative. (2) This meeting looks upon manual training which follows educational principles as a suitable means to reach the purpose set forth under (1). It thinks that manual training is a necessary addition to the customary educational methods. Hence, all steps taken to promote the spread of manual training among the young deserve the friendly and active cooperation of teachers. (3) The way which the German Society for Manual Training has adopted to promote manual training—i. e., to develop this branch by means of private, communal, and society support—is considered the best, partly because

it is in accord with the spirit of the time, and partly because it offers opportunity to settle the question whether a general introduction of manual training is wanted.

(*d*) The thirtieth annual meeting of the General German Teachers' Association, held in Leipsic in 1893, adopted the following theses: (1) Manual training promotes school education by training the pupil in diligence, economy, cleanliness, and order. (2) It deepens the influence of the school, because it trains in the same manner, though in a different way, in which writing and drawing train hand and eye, or in which nature-study trains the sense of observation, or arithmetic and geometry awaken concepts of number and space, or gymnastics develop bodily dexterity and force of will. (3) Manual training supplements school instruction, because it places empirical experience side by side with theoretical knowledge, and hence it materially aids the growth of practical intelligence. (4) It is able to serve school instruction directly, because it appeals to sense perception and represents empirically the ideas gained in study; but chiefly because it enables the pupil to make the means of exemplification and desirable simple apparatus with his own hands.

(*e*) The Rhenish Provincial Teachers' Union adopted the following resolution in 1889: "We have with much interest taken cognizance of the movement in favor of manual training, and declare our willingness to aid the inner pedagogical development of this new branch of education, and to bring to clearer comprehension the principles underlying it."

(*f*) The Pomeranian Teachers' Association accepted the following theses in 1888: (1) The movement in favor of manual training for boys is based on sound educational principles; hence its introduction into educational institutions, such as reform schools and separate work schools, deserves commendation and support. (2) Its introduction into the public elementary schools, however, is to be rejected for practical as well as general educational reasons.

(*g*) The Fourteenth Annual Westphalian Teachers' Meeting in 1890 decided: That manual training exercises a beneficial influence upon the education of boys, by aiding their physical development, quickening their intellectual life through minute observation and opportunities for practical experiences, by strengthening their will power, promoting creative activity, and forming the sense of order and beauty.

(*h*) The teachers of Sleswic-Holstein in their annual meeting of 1889 resolved: "We recognize the aim of the elementary school to be, to educate the young to be useful citizens of the State, but think it best to leave the question of introducing manual training to each individual teacher, who may decide it according to local circumstances."

(*i*) A normal school conference at Delitzsch, in 1888, adopted the

following declaration of principles: "The conference acknowledges that manual training, conducted according to educational maxims, seems well adapted to serve important educational and social purposes. The profession of teachers should therefore take occasion to aid its development in system and method. It is recommended to make a practical trial with its introduction in as many cities and villages as is possible without curtailing the intellectual work of the school."

(*j*) The teachers in Gumbinnen and other school districts of eastern Prussia discussed the subject, and concluded that manual training for boys had not as yet been sufficiently developed to be made an integral part of the course of the public elementary school. That province is almost entirely devoted to agriculture.

(*k*) The Teachers' Association of Berlin adopted the following resolution in 1886: "This association has taken cognizance of the aspirations of the Society for Promotion of Manual Training in Berlin. It recommends its members to aid the purposes of the society, so that, through active participation of practical teachers, the principles of manual training become better understood and acknowledged in practice."

(*l*) The Section for Manual Training of the Berlin Teachers' Association repeatedly called attention to the subject of manual training, and resolved, as late as November, 1897, as follows: "(1) Although we consider well-meant criticism of the arguments in favor of manual training justified at all times and, indeed, desirable in its own interest, yet we greatly regret that recent publications on the subject, especially in the Frankfort Schulzeitung, lack thorough comprehension of the arguments advanced in favor of manual training, and betray want of knowledge of subject and method as well as practical experience. (2) We denounce any disparagement of the advocates of manual training, and repel the attacks made upon honest friends of this branch of study when they are stigmatized as advocating a 'sport' or 'swindle.' We particularly object to the imputation that participation on the part of the teacher in manual training is a danger to the profession and a lowering of his social standing. (3) This section will continue to test the literature and methods of manual training and adheres to its conviction that this branch of study contains elements of culture which no other branch has; that it trains hand and eye, develops the sense for forms of beauty, influences the growth of will power, and aids in the acquisition of new ideas by means of intuition. (4) This section has not declared itself in favor of a general introduction of shopwork into the elementary school, because the latter has still other more pressing needs which claim all the available means for school purposes in state and communities, before manual training can be made an integral part of the course of study."

(*m*) The Teachers' Association of Memelgau occupied several meet-

ings recently with a discussion of the question and came to the following result: (1) It can not be denied that the movement in favor of manual training for boys and domestic work for girls is justified, first, because the training in hand labor is part and parcel of a harmonious development of the human being; second, because it is well adapted to develop the self-activity inborn in man; third, because it is an admirable means of education of the intellect; fourth, because it aids boys in preparing for future occupations in trade and industry and the girls in domestic work. (2) Physical occupation of the children and proper training for it is a matter that concerns the parents—first, because no child can remain unoccupied at home; second, because opportunities for occupation at home are more numerous than in the best course of school instruction; third, because the useful work at home will create greater interest in the child than the apparently useless work in school; fourth, because manual work at home gives the child a variety of valuable experiences. If the home can not undertake the task of training in manual occupations, special manual-training schools, not connected with the regular schools, may be of assistance. For educational boarding institutions which undertake the entire education of the pupils, obligatory training in manual work seems highly commendable. (3) To insert training in manual work and domestic duties into the curriculum of the common school is unnecessary, because that school is amply provided with educational methods and means. (4) It would seem questionable to introduce the new branches, first, because the common school is to be used uniformly by all the people, and would assume the character of a professional school if it undertook to give manual and domestic training; second, because hygienic considerations advise against it; third, because the common school is already overburdened with a large number of subjects, and each increase to that number would lead to broadening and flattening instead of deepening the education the school can give; fourth, since the school can not spare any of the time allotted to the legitimate branches, the introduction of manual training for boys and domestic science for girls would necessitate an increase in the number of hours per day now devoted to school work; fifth, because the said introduction would require a similar introduction in the normal schools—this would lead to a perversion of their object; sixth, because the new branches would require a large increase in the annual expenditures that would be out of proportion to the gain derived from these branches; seventh, the methods of instruction in the new branches are not yet definitely formed, and the common school should not be made a testing station for experiments. (5) The school will ever be ready to absorb matters pertaining to the new branches so far as they fit into the work it is performing. (6) The teachers of the common school are ready to assist in the development of the said branches outside of the pale of school.

III. Legislative Expressions.

The only German State in which there is a provision for manual training in the school law (1892) is the Duchy of Baden. Article 3 of this law says, in an enumeration of the branches of study:

Boys may receive manual training, girls instruction in domestic science, provided their parents or guardians signify in writing that they be so instructed.

The ducal government had offered the following argument in the legislature in support of the passage just quoted:

Manual training for boys does not have the aim to prepare them for occupations immediately applicable in practical life, as instruction in domestic work for girls has, for manual training is not intended to give the boys opportunity for entering into competition with industrial labor. Manual training, such as is here provided for, is intended to meet a demand which has been raised from a pedagogical standpoint only, namely, that the boys should receive, aside from mental training and abstract, intellectual activity, a training of the senses, of the power of observation and representation, which is so often neglected. Also for the reason that the boy's physical strength be exercised, and that creative activity be awakened, which in its turn awakens practical intellect and love for labor, which are eminently essential in nearly all occupations and professions in life.

The legislative authority in Prussia which deals with questions of school management, the lower house of the Diet, adopted, March 30, 1893, a resolution which read as follows:

In consideration of the fact that the movement in favor of manual training in the schools has in late years spread over all civilized countries, and in consideration of the further fact that the general introduction of this branch has economic as well as educational importance, the Royal Government is requested to bestow more attention upon, and aid financially in a more extensive manner than hitherto, any local attempt at introducing manual training, and to induce the normal schools to adopt it as an optional branch into their course.

In 1895 the same body resolved:

The house of deputies acknowledges the care hitherto bestowed by the educational authorities upon physical education and manual training of the young, and expresses the expectation, (1) that they will continue to work in promoting gymnastics and juvenile open air games; (2) that manual training for boys and domestic science for girls in places where local needs have led to the introduction of these branches, may be aided liberally from the State appropriation for schools, and especially in cases where the communities find the maintenance of the said branches too burdensome.

IV. Bibliography of German Books on Manual Training for Boys.

A. Books and other publications in Germany which contain general discussions of the object of manual training.

[A mark=23.8 cents, or about a quarter of a dollar.]

1. Biedermann, Dr. Karl. Die Erziehung zur Arbeit. Leipzig, Matthes, 1883, 2 marks.
2. Elm, Hugo. Der deutsche Handfertigkeitsunterricht in Theorie und Praxis. Weimar, Voigt, 1882, 4.50 marks.
3. Eckhardt, Theodor. Die Arbeit als Erziehungsmittel. Vienna, Pichler, 1875, 0.40 mark.
4. Götze, Dr. Waldemar. Denkschrift über den erziehlichen Knabenhandarbeitsunterricht. Leipzig, beim Verfasser, 1 mark.
5. Götze, Dr. Waldemar. Katechismus des Knabenhandarbeits-Unterrichts. Leipzig, Weber, 1892, 3 marks.

6. Lange, Dr. Konrad. Die künstlerische Erziehung der deutschen Jugend. Darmstadt, Bergsträsser, 1893, 3 marks.
7. Petzel, Rudolf. Der Handfertigkeits-Unterricht. Vienna, Pichler, 1884.
8. Rauscher, Ferd. E. Der Handfertigkeitsunterricht, seine Theorie und Praxis, 3 Theile. Vienna, Pichler, 1885, 6 marks.
9. Seidel, Robert. Der Arbeitsunterricht. Tübingen, Laupp, 1885, 2 marks.
10. Georgens. Die Gegenwart der Volksschule, Heft I: Für die Verhandlung des Themas "Erziehung durch Arbeit zur Arbeit" auf der IX. Allgemeinen Deutschen Lehrerversammlung. Vienna, 1887.
11. Schreyer. Ueber die Erziehung der bäuerischen Jugend zur Arbeit. Vienna, 1895.

B. Publications which treat of the historical development and the present status of manual training.

1. Rissmann, Robert. Geschichte des Arbeitsunterrichts in Deutschland. Gotha, Thienemann, 1882, 2 marks.
2. Rissmann, Robert. Der Handarbeitsunterricht der Knaben. Geschichte und gegenwärtiger Stand. Separat-Abdruck aus Rein's "Encyclopädisches Handbuch der Pädagogik." Langensalza, Beyer & Sons, 1896, 1 mark.
3. Götze, Dr. Waldemar. Der Arbeitsunterricht im Auslande und in Deutschland. Leipzig, Hinrichs, 1892, 0.42 mark.
4. Herbe and Petzel. Die Knabenhandarbeit in Deutschland. Vienna, 1888, 0.80 mark.
5. Kirchmann, P. F. Geschichte der Arbeit und Kultur. Leipzig, Mayer, 1858, 2 marks.
6. Meyer, Johannes. Die geschichtliche Entwicklung des Handarbeitsunterrichts. Berlin, Hofmann, 1883, 1.20 marks.
7. Wiesner. Geschichte des Handfertigkeitsunterrichts für Knaben. (Separat Abdruck aus Kehr's Geschichte der Methodik, 2d edition.) Gotha, Thienemann, 1889.
8. Götze, Dr. Woldemar. Der Handarbeitsunterricht ausserhalb Deutschlands. Leipzig, 1896.

C. Publications which treat of the relation of manual training to the school studies and its position in school.

1. Bruns, Alois. Die Schulwerkstätte in ihrer Verbindung mit dem theoretischen Unterricht. Vienna, Hölder, 3 marks.
2. Barth and Niederley. Die Schulwerkstatt. Bielefeld, Velhagen & Klasing, 1891, 4.50 marks.
3. Eitelberger von Edelberg, Rudolf. Ueber Zeichenunterricht, kunstgewerbliche Fachschulen und die Arbeitsschule an der Volksschule. Vienna, Braumüller, 1883, 3 marks.
4. Götze, Dr. Woldemar. Schulhandfertigkeit. Ein practischer Versuch den Handfertigkeitsunterricht mit der Schule in Verbindung zu setzen. Leipzig, Hinrichs, 1894, 1.50 marks.
5. Höhn, Dr. E. Der Handfertigkeitsunterricht und die höheren Schulen. Leipzig, Fock, 1 mark,
6. Kreyenberg, Gottfried. Handfertigkeit und Schule. Frankfort on the Main, Diesterweg. 1893, 0.75 mark.
7. Magnus, K. H. L. Der praktische Lehrer. Hildesheim, Lax, 1886, 2.50 marks.
8. Scherer, Heinrich. Der Handfertigkeitsunterricht und die Volksschule. Bielefeld, Helmich. 1890, 0.40 mark.
9. Scherer, Heinrich. Der Handfertigkeitsunterricht und die Fortbildungsschule. Gotha, Behrend, 1894, 0.60 mark.
10. Schwab, Dr. Erasmus. Die Arbeitsschule als organischer Bestandtheil der Volksschule, Vienna, Hölzel, 1873, 0.80 mark.
11. Wichern, Dr. Ueber Erziehung zur Arbeit, insbesondere in Anstalten. Hamburg, Rauhes Hans, 1867, 0.80 mark.
12. Koehler. Das Fröbel'sche Faltblatt als Anschauungs- und Darstellungsmittel. Weimar, 1861, 1863.
13. Beust. Der wirkliche Anschauungsunterricht auf der untersten Stufe der Grössenlehre. Zürich, 1865.
14. Beust. Die Grundgedanken von Pestalozzi und Fröbel in ihrer Anwendung auf Elementar- und Secundarschulstufe. Zürich, 1887.
15. Deinhardt und Gläsel. Das Stäbchenlegen und die Erbsenarbeiten im Volksschulunterricht als Grundlage des Zeichnens, des Rechnens und der geometrischen Formenlehre. Vienna, 1866.
16. Meyer, J. Der Handfertigkeitsunterricht und die Schule. Berlin, 1881.
17. Hanschmann. Die Arbeit in der Volksschule. Kassel, 1881.
18. Backhaus. Stellung und Gestaltung des Handfertigkeitsunterrichts. Gotha, 1888. (See next number.)
19. Groppler, F. Widerspricht der Arbeitsunterricht dem Prinzip der Schule? Wer soll ihn leiten? Bielefeld, Velhagen & Klasing, 1889. (Reply to the work No. 18.)
20. Gottlöber. Der Handfertigkeitsunterricht an höheren Schulen. Programm der Realschule von Stollberg.

21. Scherer and Eckert. Zeichnen und Handfertigkeit. Anleitung zur Ertheilung dieses Unterrichts in der Volksschule. Gotha, 1895.
22. Beringer. Handfertigkeitsunterricht und Mittelschule. Mannheim, 1886.

D. Publications treating of the social side of the question of introducing manual training.

1. Schenckendorff, Emil von. Die soziale Frage und die Erziehung zur Arbeit in Jugend und Volk. Leipzig, Hinrich, 1 mark.
2. Seidel. Der Arbeitsunterricht, eine pädagogische und soziale Nothwendigkeit Tübingen, 1884.
3. Raydt. Arbeitsschulen und Hausfleissvereine. Bingen, 1879.

E. Publications treating of manual training with reference to hygiene.

1. Janke, Otto. Die Hygiene der Knabenhandarbeit. Hamburg, Voss, 1893, 2 marks.
2. Birch-Hirschfeld, Dr. F. V. Die Bedeutung der Muskelübung für die Gesundheit. Leipzig, Vogel, 1883, 1 mark.

V. Bibliography of German Books Concerning Instruction in Domestic Economy to Girls.

I. General Treatises.

1. Fragstein, A. von. Die Berufswahl unserer Töchter. Wittenberg, Herrosé, 2.50 marks.
2. Goerth, A. Erziehung und Ausbildung der Mädchen. Leipzig, 1894.
3. Schneider, K. Bildungsziel und Bildungswege für unsere Töchter. Berlin, Wiegandt, 1888.
4. Tews, Johann. Moderne Mädchenerziehung. Langensalza, Beyer & Söhne, 1897, 0.30 mark.
5. Weiss, Karl. Unsere Töchter und ihre Zukunft. Berlin, Appelius, 1880.
6. Wendt, E. M. Psychologische Methodik des Mädchenunterrichts. Leipzig, Böhme, 1887, 3.25 marks.
7. Die Mädchenerziehung. Mängel und Umgestaltung der heutigen Erziehungsweise. Mayence, Diemer, 1885.
8. Kettler, J. Gleiche Bildung für Mann und Frau! Weimar, 1891.
9. Tews, Johann. Sociale Streiflichter. Langensalza, Beyer & Söhne, 0.30 mark.

II. Publications Treating Specially of Training in Domestic Economy for Girls in Schools.

(*a*) *Books and pamphlets advocating its introduction into the course of study of secondary girls' schools, as well as into that of the elementary schools.*

1. Kamp, Dr. Otto. Fortbildungsschulen für Mädchen. Berlin, 1888, Liemenroth & Worms, 1 mark.
2. Kamp, Dr. Otto. Die Praxis der Fortbildungsschule für Mädchen. Wittenberg, Herrosé, 1889, 1 mark.
3. Kamp, Dr. Otto. Haushaltungsschulen, ein Mittel zur hauswirthschaftlichen Unterweisung lohnarbeitender Mädchen. Elberfeld, Könker, 1889.
4. Kamp, Dr. Otto. Die Abendhaushaltungsschule in Frankfurt als practische Lösung einer sozialen Aufgabe. Berlin, Liebmann, 1890.
5. Herstatt und Kamp. Die hauswirthschaftliche Unterweisung der Landmädchen und Frauen in Deutschland und im Auslande. Grundzüge der bestehenden Einrichtungen und Anleitung zur Schaffung ähnlicher Vorkehrungen. Wiesbaden, Bergmann, 1894.
6. Ohly. Die hauswirthschaftliche Ausbildung der Mädchen aus den ärmeren Volksklassen Leipzig, Duncker, 1888, 4 marks.
7. Kalle, Fritz, und Kamp, O. Die hauswirthschaftliche Unterweisung armer Mädchen. Wiesbaden, Bergmann, 1889.
8. Der hauswirthschaftliche Unterricht armer Mädchen in Deutschland. Heft 12 der Schriften des Vereins für Armenpflege und Wohlthätigkeit. Leipzig, Duncker & Humblot, 1890.
9. Kalle, Fritz. Ueber den Haushaltungsunterricht, Leipzig. Duncker & Humblot, 1891. Heft 15 der Schriften unter 8.
10. Schrader, K. und H. Die hauswirthschaftliche Bildung der Mädchen in den ärmeren Klassen. Berlin, Hoffschläger, 1888.
11. Weber, Mathilde. Die hauswirthschaftliche Ausbildung und Erziehung der Mädchen der weniger bemittelten Stände. Berlin, George & Findler, 1888.
12. Weber, Mathilde. Die Mission der Hausfrau. Leipzig, Simon, 1888.
13. Weber, Mathilde. Die Frau im gemeinnützigen Leben. Gera, Hofmann, 1889.
14. Ernst, A. Haushaltungsschulen für Mädchen aus dem Volke. Posen, Decker, 1889.
15. Zwick, Dr. H. Die hauswirthschaftliche Ausbildung der Mädchen. Berlin, Ewald, 1894.
16. Schenckendorff, E. von. Die Ausgestaltung der Volksschule nach den Bedürfnissen der Gegenwart. Hamburg, 1895.

17. Kettler, Frau J. Was wird aus unseren Töchtern? Weimar, Frauenberuf-Verlag, 1889.
18. Meyer, Dr. Jürgen Bona, und Dr. Stegemann. Die Fortbildungs- und Haushaltungsschulen für Mädchen. Heft 17 der Schriften des liberalen Schulvereins. Bonn, Strauss, 1890.
19. Ende, Paul am. Die Errichtung der Haushaltungsschulen für Mädchen aus unbemittelten Ständen. Rudolstadt, Hofdruckerei, 1890.
20. Ende, Paul am. Die Aufnahme des hauswirthschaftlichen Unterrichts in den Lehrplan der Volksschule. Berlin, Stankiewitz, 1894.
21. Förster, Auguste. Ueber den hauswirthschaftlichen Unterricht in der Volksschule. Friedrichsroda, Verlag des Lehrerinnenvereins, 1891.
22. Lüneburg, G. Die Koch- und Haushaltungsschule in Verbindung mit der Mädchenvolksschule; ihr Werth und ihre Einrichtung. Eberswalde, Lemme, 1893.
23. Schäppi, J. Die Organisation des hauswirthschaftlichen und beruflichen Unterrichts in unseren Mädchenschulen; Beitrag zur Begründung rationeller Volksernährung. Zürich, Speidel, 1895, 1 mark.
24. Tews, Johann. Der Unterrichtsstoff der Volksschule. Ein Beitrag zur Volksschulreform. Bonn, Sonnecken, 1897.
25. Tews, Johann. Die hauswirthschaftliche Ausbildung der Mädchen. Berlin, Pädag. Zeitung, 1889.
26. Tews, Johann. Die Mutter im Arbeiterhause. Eine sozial-pädagogische Skizze. Langensalza, Beyer & Söhne.
27. Weiss, Karl. Die Fortbildungsschule für Mädchen. Berlin, Wiegandt & Grieben, 1888, 1 mark.
28. Pache, Oskar. Unsere Arbeiterfrauen. Wie sind sie? Wie sollen sie sein? Ein Beitrag zur sozialen Frage. Leipzig, Voigtländer, 1890.
29. Ordnung und Lehrpläne für den Haushaltungsunterricht im Arbeiterinnen-Verein. München-Gladbach, Oderberger, 1888.

(*b*) *Publications in opposition to the introduction of domestic economy as a school study.*

1. Reddersen, H. O. Hauswirthschaftlicher Unterricht der Mädchen aus den unbemittelten Ständen und die Bremer Haushaltungsschulen. Bremen, v. Halem, 1894.
2. Ott, A. Fortbildungsschule und Kochschule. Bühl, Konkordia, 1891.
3. Weygoldt, Dr. Haushaltungsunterricht und Schule. Bühl, Konkordia, 1892.
4. Richter, Karl. Ueber die Verbindung der Koch- und Haushaltungsschulen mit der Mädchenvolksschule. Leipzig, Hesse, 1895, gekrönte Preisschrift, 1.20 mark.
5. Kamp, Dr. Kochunterricht in Mädchenvolksschulen oder in Fortbildungsschulen? Frankfurt a. M., Rosenheim, 1898.
6. Strewe, Ad. Welche Stellung nehmen wir gegenüber der Einfügung des Handfertigkeitsunterrichts für Knaben, sowie des Haushaltungsunterrichts für Mädchen in den Lehrplan der Volksschule ein? Bonn, Sonnecken, 1898.

(*c*) *Reports of cooking schools and schools of housekeeping.*

1. Kraatz. Verwaltungsbericht des Vorstandes der Haushaltungsschule Pforzheim für 1888. Pforzheim, Binder, 1889.
2. Kraatz. Bericht über den Zweck, die Einrichtung und die Verwaltung der Haushaltungsschule Naumburg a. S. für 1889 bis 1895. Naumburg a. S., Sieling, 1896.
3. Pudor. Jahresbericht über Ertheilung des hauswirthschaftlichen und Kochunterrichts in Marienburg, Westpreussen, für 1891-1894. Schreiber, desgleichen für 1894-5.
4. Dittrich & Kühn. Ueber Kochschulen. Verhandlungen des sächsischen Gemeindetages. Meissen, Klinkicht, 1894.
5. Krötke, Hedwig. Zum Haushaltungsunterricht. Bericht über eine Stadienreise. Frankfurt a. M., Diesterweg, 1894.
6. Wilsdorf. Die Errichtung von Koch- und Haushaltungsschulen in Verbindung mit der Volksschule. Dresden, Klinke & Walters, 0.40 mark.
7. Springer, Dr. Darstellung der Gesichtspunkte, die für Errichtung und Einrichtung der Neuroder Haushaltungsschule massgebend gewesen sind. Sonderabdruck. Breslau, Korn, 1895.
8. Böhm. Bericht über die zu Leipzig-Plagwitz eingerichteten städtischen Haushaltungsschulen. Leipzig, Stephan, 1898.
9. Zwick, Dr. Jahresberichte über den hauswirthschaftlichen Unterricht in Berlin. Five reports for 1893-1898.

(*d*) *Publications which treat of the matters taught in schools of domestic economy.*

1. Ernst, Marie. Das Buch der Ernährung Gesunder und Kranker. 10 Hefte. Leipzig, Keil, 1896, 7.50 marks.
2. Heyl, Hedwig. Das A B C der Küche. Berlin, Habel, 1888, 7.50 marks.
3. Heyl, Hedwig. Volkskochbuch für Schule, Haus und Mädchenheim. 20 Lectionen zur Erlernung der einfachen Küche. Berlin, Habel, 1891.

4. Clima, Marie. Haushaltungskunde. Ein Lehr- und Lesebuch für Lehrerinnen-Bildungsanstalten. Vienna, Pichler, 1886.
5. Meinert, C. A. Wie nährt man sich billig und gut? Ein Beitrag zur Ernährungsfrage. Mayence, Mittler & Sohn, 1882.
6. Gruber, Ignaz. Die Haushaltung der arbeitenden Klassen. Jena, Fischer, 1887, 3 marks.
7. Das häusliche Glück. Vollständiger Haushaltungs-Unterricht, nebst Anleitung zum Kochen für Arbeiterfrauen. M.-Gladbach, Riffahrt, 1882, 1 mark.
8. Wegweiser zum häuslichen Glück. Kurze Belehrung über alle Haus- und Handarbeit und Kochen, Gesundheits- und Krankenpflege. M.-Gladbach, Riffahrt, 1888.
9. Eberty, E. Die Hauswirthschaft und der Markt. Berlin, Habel, 1886, 0.75 mark.
10. Johnston. Chemie des täglichen Lebens. Bearbeitet von Dr. Fr. Dornblüth. Stuttgart, Krabbe, 1887, 5 marks.
11. Smith. Unsere Nahrungsmittel. Deutsch in "Internationale wissenschaftliche Bibliothek." Leipzig, Brockhaus.
12. Franke, E. Die Chemie der Küche auf Grundlage der allgemeinen Chemie für höhere Töchterschulen, sowie zum Selbstunterricht. Eisleben, Maehnert, 1883, 1.75 marks.
13. Heppe, G. Hauswirthschaftliche Chemie. Hamburg, Voss, 1890, 2 marks.
14. Gesundheitsbüchlein, bearbeitet von Kaiserlichen Gesundheitsamt. Berlin, Springer, 1894, 1 mark.
15. Rebe, Marie, Die Haushaltungskunde und ihre Stellung zum Unterricht in weiblichen Handarbeiten. Gotha, Perthes, 1885, 3 marks.
16. Nostiz-Wallwitz, A. von. Die Haushaltungsschule, 3 parts. Leipzig, Twietmeyer, 1894, 1.20, 1.20, and 1 mark.
17. Springer, Dr. Der Haushaltungsunterricht. Gera, Hofmann, 2 vol., at 2.20 marks.
18. Themer, G. Handbuch der Haushaltungskunde zur Fortbildung für erwachsene Mädchen. Vienna, 1892.
19. Kalle, Fritz. Wirthschaftliche Lehren. Berlin, 1890, 0.40 mark.

The following are textbooks for the use of the pupils:

20. Nouvel, Mathilde. Leitfaden für die Hand der Schülerinnen beim Haushaltungsunterricht in Volks- und Fortbildungsschulen. Breslau, Hirt, 1894, 0.75 mark.
21. Kühn, A. Lehrbuch für den hauswirthschaftlichen Unterricht in der Volksschule. Chemnitz, Winter, 1893, 0.60 mark.
22. Merkel, Ida. Hilfsbuch für den Unterricht in Koch- und Haushaltungsschulen. Meiningen, 1896, 0.60 mark.
23. Lüneburg, G., und Hertha Rehfeldt. Leitfaden für den Unterricht an Koch- und Haushaltungsschulen. Eberswalde, Lemme, 1894, 0.50 mark.
24. Hebebrand, Lina, und Emil Leuttner. Leitfaden für die Hand der Koch- und Haushaltungsschülerinnen. Wittenberg, Herrosé, 1895.

V. CONTINUATION (OR SUPPLEMENTARY) AND TRADE SCHOOLS IN GERMANY.

Continuation schools (Fortbildungsschulen) in Germany are mostly day schools; some are evening, some secular Sunday schools. Their object is to supplement the elementary education acquired in the common schools, and to bridge over the time from the fourteenth to the seventeenth year of age of boys who do not attend a high school or a secondary industrial school, the law prohibiting factory or shop labor of children under 17 years. These continuation, or, as they are sometimes termed in English, supplementary schools, are essentially elementary schools, for as a rule they teach no languages, except the mother tongue, and no higher mathematics, hence can not be classed among secondary institutions, as that term is understood in this country.

There is very little if any uniformity in the courses of study of these schools. They adapt themselves readily to local needs, some being designed to serve the needs of agricultural, others of industrial popu-

lations. Nor are the educational authorities anxious to subject these schools to a uniformity such as seems necessary for common schools, because if anywhere it is in these supplementary agencies of the people's education that the individuality of the pupils should be fostered and attempts be made to meet local needs.

Oskar Pasche's Handbuch des deutschen Fortbildungsschulwesens (three parts, Wittenberg) offers, for the first time, comprehensive statistics of these schools, from which the following tables are gleaned. The following list shows the number of pupils in continuation schools to every 1,000 inhabitants in German States. The only two States from which no statistics are available are Bavaria and Alsace-Lorraine.

TABLE 1.—*Number of pupils in continuation schools to every 1,000 inhabitants.*

Würtemberg	50	City of Bremen	10⅜
Baden	35¼	Schwarzburg-Rudolstadt	8½
Hesse-Darmstadt	34⅓	City of Hamburg	7⅓
Saxony	28½	Brunswick	7
Waldeck	22½	Mecklenburg-Schwerin	7
Coburg-Gotha	22½	Prussia	6⅞
Saxe-Weimar	22	Reuss (senior line)	6⅛
Saxe-Meiningen	21	Saxe-Altenburg	6
Schwarzburg-Sondershausen	20	Lippe	5½
City of Lubeck	18	Anhalt	5¼
Mecklenburg-Strelitz	14½	Oldenburg	3½
Reuss (junior line)	12½	Schaumburg-Lippe	2¼

The Bavarian official returns state that in 1892–93 the Kingdom had 304,227 "holiday"—that is, supplementary—school pupils. Besides, there were 232 industrial schools with 1,048 courses and 31,321 pupils, and 477 agricultural schools with 516 courses and 9,022 pupils. This would give Bavaria the first rank in the foregoing list, with 57 pupils in supplementary schools to every 1,000 inhabitants. But this is misleading, since the Bavarian elementary course of study reaches only to the thirteenth year of age, hence the many evening and "holiday" schools, which are virtually common schools. The city of Berlin, if placed in the foregoing list, would occupy a high rank, having 24½ pupils to every 1,000 inhabitants in such schools.

Several communities in German minor States have decreed compulsory attendance for pupils of continuation schools, which is, however, enforced only where children are employed in factory and shop labor.

In Saxony the school system has been greatly benefited by the establishment of a large number of trade schools and schools for foremen (Werkmeisterschulen). The city of Chemnitz, in its technical institutions for foremen, has given the example for other cities. Chemnitz has a dyers', a cotton-printers', a bleachers', and a soap-boilers' school, and other technical schools. The Kingdom of Saxony had in 1894, aside from the technical schools in Chemnitz, 64 trade schools, of which 30 were found in the large cities. The number of these schools is steadily increasing. Previous to 1874 there were 7; in 1884 there were 21; in 1894 there were 64. These trade schools

had 227 teachers, who taught 63 trades to 4,040 pupils, 3,383 of whom were natives of Saxony, 489 natives of other German States, 104 came from Austria, and 64 from other foreign countries. Of the 1,766 hours of instruction in 1894 there were devoted to practical exercises 720, and 565 to drawing and designing. The annual expenditure of 55 of these schools (the others not reporting) was about $60,000. This sum was secured by (*a*) tuition fees, $27,000; (*b*) state subsidies, $13,000; (*c*) contributions from associations, corporations, and trade-unions, $6,000; (*d*) communal appropriations about $5,000, and the remainder was secured through the sale of the products of the pupils' labor.

The school law of the Grand Duchy of Hessia of 1874 contains the following provisions: "Every community is obliged to establish at least one continuation school. All continuation schools shall be common schools in the sense that they are free from tuition fees and open to all without regard to the occupation or previous preparation of the pupil. Several small communities may combine to maintain such a school in common, if centrally located, to facilitate the better grading of the pupils." All Hessian continuation schools are subject to the supervision of the State authorities. Their plan of organization and management must be submitted to the State school inspector of the district. According to legislative enactment the State supports these schools. In 1894 they cost the State $42,150. In 1895–96 the State had 900 of such schools, with 24,623 pupils. The per capita was insignificant, to wit, $1.71. Hessia had also 10 agricultural schools, 4 schools of pomology, a large number of Sunday drawing schools, industrial and advanced trade schools, all of which cost in 1894 the sum of $87,485, which sum was defrayed by the State, private corporations, and communal governments.

The State authorities of the Kingdom of Prussia do not seem to bestow so much attention upon continuation schools as those of the minor German States. But the city government of Berlin exercises a great deal of parental care over the boys. The number of pupils in continuation schools in Berlin has increased from 9,837 in 1887 to 40,969 in 1896 (32,489 of whom are boys). But since there are about 50,000 boys of the age between 14 and 18 in the city not attending secondary schools, it would seem that nearly 18,000 do not attend continuation schools. Efforts are made to induce the city council to decree compulsory attendance, but thus far the authorities have not yielded to the pressure brought upon them, probably owing to the steady increase in the attendance upon such schools.

TABLE 2.—*Statistics of continuation schools in Germany: A. The Kingdom of Prussia.*

Provinces of Prussia.	Number of inhabitants.	General continuation schools.		Industrial continuation schools.		Trade schools.		Commercial schools.		Agricultural schools.		Schools for girls.				Total.	
												General.		Special.			
		Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.
East Prussia	2,006,689	.....	.....	51	4,262	3	269	6	275	18	549	.....	.....	7	327	85	5,682
West Prussia	1,494,360	.....	.....	50	7,386	2	240	9	469	20	472	.....	.....	8	285	89	8,852
Posen	1,828,658	.....	.....	86	5,234	1	250	3	312	33	565	1	20	2	320	126	6,681
Silesia	4,415,309	.....	.....	142	14,995	12	760	62	3,239	46	2,234	3	70	20	849	285	22,147
Brandenburg	2,821,695	.....	.....	104	5,888	7	536	13	658	27	742	.....	.....	6	82	157	7,906
City of Berlin	1,677,304	12	8,718	57	20,314	4	1,039	5	2,039	3	379	9	3,409	13	5,071	103	40,969
Pomerania	1,574,147	.....	.....	71	3,464	9	155	11	351	16	430	.....	.....	3	158	110	4,558
Sleswic-Holstein	1,286,416	.....	.....	91	7,576	7	430	5	463	64	827	2	90	6	680	175	10,066
Hanover	2,422,020	.....	.....	122	15,200	18	674	33	2,280	176	3,506	2	100	14	228	365	21,988
Saxony	2,698,549	.....	.....	122	11,910	5	348	26	2,171	57	1,281	2	80	8	345	220	16,135
Hesse-Nassau	1,756,802	.....	.....	125	14,509	7	645	9	1,379	350	5,553	2	52	16	1,733	509	23,871
Westphalia	2,701,420	.....	.....	128	12,300	5	1,115	16	1,342	47	1,736	.....	.....	4	395	200	16,888
Rhenish Prussia	5,106,002	.....	.....	169	22,452	17	2,184	18	2,030	283	5,020	5	190	16	1,081	508	32,957
Hohenzollern	65,752	.....	.....	2	182	.....	.....	1	21	53	537	.....	.....	1	50	57	790
Kingdom of Prussia	31,855,123	12	8,718	1,320	145,672	97	8,625	217	17,029	1,193	23,831	26	4,011	124	11,604	2,989	219,490

Kingdom of Bavaria, 5,818,544; see text.

TABLE 3.—*Statistics of continuation schools in Germany: B. The minor States of the Empire.*

States.	Number of inhabitants.	General continuation schools.		Industrial continuation schools.		Trade schools.		Commercial schools.		Agricultural schools.		Schools for girls.				Total.	
												General.		Special.			
		Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.	Number of schools	Number of pupils.
Lubeck	83,324	1	23	1	1,180	1	33	1	220	1	30					5	1,486
Bremen	196,278			4	1,669	4	110	2	343							10	2,122
Hamburg	681,632			4	2,319	11	1,224	3	858					1	480	19	4,881
Lippe Detmold	134,617			6	722											6	722
Schaumburg-Lippe	41,244	2	65							1	30					3	95
Reuss, jr. line	131,469	1	294	2	406	4	413	2	198	1	120	1	175			11	1,605
Reuss, sen. line	67,454			1	350			1	70							2	420
Waldeck	57,782	119	1,094	2	75					4	126					125	1,295
Schwarzburg-Rudolstadt	88,590	12	463	2	130	3	138					1	20			18	751
Schwarzburg-Soudershausen	78,248	93	1,199	6	264	1	40	2	50							101	1,553
Anhalt	293,123			17	1,393	1	10	3	137							21	1,540
Saxe-Coburg-Gotha	216,624	152	3,720	3	368	3	256	3	182			3	317			164	4,843
Saxe-Altenburg	180,012	11	482	5	350	1	126	1	50	1	50	1	15			20	1,073
Saxe-Meiningen	233,372	298	4,199	1	200	2	67	3	89	2	98	14	202	2	47	322	4,902
Brunswick	433,906	1	250	11	1,734	2	261	4	214	1	50	1	139	2	178	22	2,826
Oldenburg	373,662	1	50	8	480	6	290	1	50	7	277			1	20	24	1,167
Mecklenburg-Strelitz	101,513			9	711	1	736	1	14							11	1,461
Mecklenburg-Schwerin	596,883			45	3,250	1	620	8	164	3	52			2	40	59	4,136
Saxe-Weimar	338,887	452	5,152	10	1,552	7	332	5	226	2	90	2	46			478	7,398
Hessia	1,039,388	905	25,268	81	8,322	6	654	7	865	11	307	2	116	4	184	1,016	35,716
Baden	1,725,470	1,591	25,649	106	8,390	12	1,099	17	1,500	21	567	(*a*)	16,717	154	6,894	1,901	60,816
Würtemberg	2,080,898	2,079	31,176	169	15,592	6	1,670	14	1,938	22	366	2,093	51,087	37	2,929	4,420	104,128
Saxony	3,783,014	1,943	76,994	39	10,660	112	10,119	40	4,871	11	691	7	1,596	13	2,445	2,170	107,376

a The number of these schools is contained in the number of schools for boys.

There are no means of determining the actual cost of maintaining industrial and trade schools in the whole Empire, partly because the sources of their income are so numerous—State, provincial, and communal governments, associations, trade-unions, and private benevolence all contributing to their support; partly because the trade schools are not under uniform supervision. Some are under the jurisdiction of the department of education, others under that of the department of public works; again, others are purely communal, and still others are private institutions. Only so far as the State appropriations are concerned can a definite statement as to expenditures be made. Professor Lüders in his memorial on the subject of industrial education in Prussia (1898) offers a few interesting items of information, which are here inserted.

While in 1892 the State as such paid for industrial and trade schools (exclusive of polytechnical and art schools) $452,940, in 1897 the sum thus expended was $586,166. In 1892 the communal governments paid for the same purpose $116,126; in 1897 the sum thus expended had increased to $177,262.

The following table shows the State's participation in the support of industrial and trade schools for six years:

TABLE 4.—*Prussian State appropriations for industrial education.*

Kinds of schools.	1891–92.	1892–93.	1893–94.	1894–95.	1895–96.	1896–97.
1. Trade schools (building trades, weavers', metal workers', designers' schools)	$213,484	$232,164	$241,766	$278,807	$300,431	$340,050
2. Lower continuation schools	104,720	104,720	104,720	104,720	130,900	130,900
3. Same kind of schools in the provinces of West and East Prussia	93,300	93,300	93,300	93,300	71,400	71,400
4. Industrial art schools	8,330	8,330	8,330	8,330	8,330	10,710
5. Industrial education offered in connection with other institutions	33,106	33,106	33,106	33,106	33,106	33,106
Total	452,940	471,610	481,222	518,363	544,167	586,166

The same writer also gives a table which shows the attendance in Prussian schools for the builders' trades. These schools are very popular, and many students are denied admittance every year.

The following table mentions the cities and provinces, and states not only the actual number of students, but also the number of applicants who could not be accommodated for want of room.

TABLE 5.—*Number of students in Prussian schools for the building trades.*

Cities and provinces.	Students in attendance.					Students denied admission for want of room.			
	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1891.	1892.	1893.	1894.
Berlin, Brandenburg	256	270	265	269	266	230	289	388	215
Breslau, Silesia	218	243	266	264	257	72	151	216	114
Buxtehude, Hanover	210	214	184	203	233	12	10	57	.....
Deutsch-Krone, W. Prussia	223	227	212	224	228	10	50	55	6
Eckernförde, Sleswic-H	197	214	207	208	205	97	139	172	110
Görlitz, Silesia	.....	.....	.....	84	168	.....	.....	.....	.....
Höxter, Westphalia	304	299	302	299	306	285	432	510	256
Idstein, Hesse-Nassau	222	237	257	283	283	141	136	101	73
Königsberg, E. Prussia	.....	.....	132	153	182	.....	.....	65	8
Madgeburg, Saxony	200	201	216	225	221	63	126	141	50
Nienburg, Hanover	235	230	240	221	214	103	192	275	130
Posen, Posen	100	141	178	185	225	25	60	70	9
Total	2,165	2,276	2,450	2,618	2,788	1,038	1,585	2,050	976

The foregoing table shows that there is need for more schools of this kind. But a more pressing need is found in the lack of properly trained teachers, since merely skilled artisans will not do. The author of the aforementioned memorial recommends increasing the salaries and admitting the teachers to the privilege of the pension law, as well as making these trade schools purely State schools, so as to remove them from the influence of communal politics.

In Dortmund, province of Westphalia, the city authorities established in 1892–93 a secondary technical school in connection with the existing trade school for foremen. The plan for this school was furnished by the Association of German Engineers. This school was opened with 40 students, and has prospered so well that the city authorities have concluded to build a schoolhouse with twelve classrooms and many shops and laboratories, the cost of which will be $142,500.

In Gleiwitz, province of Silesia, a secondary engineering school was opened in 1896–97, while in Hagen, Westphalia, a regular secondary school has been changed to a school for mechanical engineers. Prussia now has six such schools, all of which are intended for foremen, to wit, Dortmund, Duisburg, Gleiwitz, Magdeburg, Cologne, and Hanover. However, their courses of study and plans of organization are not uniform. Weaving schools are found in Berlin, Crefeld, Sorau, Kottbus, and Mühlhausen (in Thuringia).

Since 1892 the State has employed a number of itinerant teachers in Silesia. These teachers travel from village to village and teach the weavers in their own shops at home. They examine their looms, suggest improvements, and act as agents for the purchase of new and better looms or parts of looms. It was found that since these teachers began their work the weekly earnings of the weavers in Silesia has increased from 10 to 50 per cent. The King of Prussia has given a large sum of money for the purchase of new looms, regulators, and other tools. Great tact would seem an indispensable quality of such

a teacher, and their popularity is probably owing to their prudent selection.

Six weaving schools—that is, those in Aix-la-Chapelle, Berlin, Kottbus, Crefeld, Mülheim, and Sorau—serve to prepare factory owners and superintendents, and hence are called higher weaving schools. According to the courses of study now in force, the weaving schools of Berlin, Crefeld, Einbeck, and Mülheim treat all branches of the weaving trade, while those of Aix-la-Chapelle, Kottbus, Falkenburg, Forst, Nowawes, Rummelsburg, Sommerfeld, and Spreenberg pay special attention to wool weaving, that of Sorau to linen and cotton weaving. The author of the memorial claims that each school should direct its attention chiefly to that branch which is represented in factories of the locality in which the school is situated. He recommends the granting of diplomas of graduation and thorough inspection by experts.

In 1891 it was urged that in every city of the Kingdom having 33,000 and more inhabitants, an industrial drawing school be established (a school of design, as we term it). The government granted the required appropriation for three cities besides those which had such schools already: Elberfeld, Barmen, and Charlottenburg (Berlin), but since that time other cities have reached and passed that number of inhabitants, so that in 1897 the number of cities of the kingdom entitled to the same appropriation was 37.

The number of industrial continuation schools has increased from 722 in 1891 to 761 in 1895, and the schools in which attendance is compulsory from 413 to 472, while those in which attendance is optional has decreased from 309 to 289. The commercial schools have increased from 100 in 1891 to 138 in 1895. The schools maintained by guilds (labor unions) have decreased in number, to wit, from 123 to 104.

The continuation schools of West Prussia and Posen occupy an exceptional position, inasmuch as the State government in these two provinces is required to bear the entire burden of the maintenance of such schools. The State government increased the appropriation from $50,000 in 1886 to $93,000 in later years. As early as 1886 the two provinces had 157 continuation schools, but since the supreme court of Prussia declared illegal the act of obligatory attendance for such schools, the employers of boys (the shopmasters) kept their apprentices from attending these schools, and in consequence 34 schools were closed in 1891. It was of little avail that in 1891 (June 1) a paragraph was inserted into the new law concerning labor, which contained the prerogative, granted to local governments of communities, of decreeing compulsory attendance. The local authorities failed to execute this right since the law expressly termed it a right, but not a duty. And hence, since 1891, again 43 schools have had to be closed.

In connection with the foregoing it may be of interest to quote United States Consul W. K. Anderson at Hanover, Germany, who

writes to the State Department, under date of December 9, 1898, as follows:

German tradesmen and manufacturers are alive to the importance of increasing the efficiency of their mechanics and artisans and improving the quality of their goods. They are resolved that "made in Germany" shall no longer pass as a term of opprobrium, but be a synonym of excellent materials and good workmanship.

On December 8, 1898, there took place in this city a meeting likely to exercise a very important influence in this direction. It was in the nature of a conference, under governmental sanction and direction, to discuss German trade and manufacturing interests and to devise plans for their extension and improvement. It was held at the instance of the Prussian minister of trade and commerce, and was presided over by the president of the province of Hanover, Count von Stollberg. Representatives of the Government from Berlin, the highest officials of the Hanoverian provincial and municipal administrations, leading manufacturers and business men, delegates from the chamber of commerce, the manual training and industrial or trade schools, and from the workingmen's trades unions, attended and took part in the deliberations.

As a result of the conference it was unanimously resolved—

(1) To establish at once in the city of Hanover advanced lecture courses, in which artisans and apprentices in all trades shall have an opportunity to complete their mechanical education and be instructed by experts how to install and manage a model workshop and work and use machines and tools to the greatest advantage. Instruction will also be given in bookkeeping, the making and rendering of accounts, the making of estimates of the cost of work and materials, how to conduct business correspondence, drawing, and other practical branches.

(2) The oversight and control of the said lecture courses shall be under the direction of a commission composed of representatives from the imperial, provincial, and municipal administrations, the chamber of commerce, the manual and art schools, and from the trades unions.

(3) The first course of lectures will be to cabinetmakers, locksmiths, shoemakers, and tailors. Those to other trades will follow.

(4) A fee for tuition will be exacted from mechanics able to pay, but those unable to pay will be instructed free. Funds for the payment of the tuition of the poor will be provided by the Hanover provincial and municipal governments.

(5) Only mechanics and apprentices will be admitted to the classes whose theoretical and practical knowledge is such as to give promise of success as students. The commission has power in all cases to decide as to qualification of applicants for admission.

(6) Teachers are to be selected by the commission and confirmed by the minister of trade and commerce.

(7) The cost of the establishment and maintenance of the lectures is to be supplied by the general government and that of the province and city of Hanover, together with the trades unions, the chamber of commerce, and others interested therein.

(8) It is further intended that great care shall be used in teaching apprentices how to obtain the most practical advantages from the knowledge acquired by them in the classes. To this end, the creation of workingmen's cooperative societies is to be urged.

(9) A permanent exposition of all power machines and tools used in the small trades is to be established in the Gewerbe-Halle (Industrial Hall) at Hanover. The machines exhibited there are to be worked by competent mechanics, who, on request, will exhibit their uses and management to all inquirers.

In connection with the machine exhibition there will also be established an exposition of sample products, in process of manufacture as well as finished.

(10) In order to enable small manufacturers and tradesmen to purchase their raw materials at wholesale prices and to facilitate the sale of their products, the formation of cooperative stores at designated places is to be encouraged.

I am informed that the establishment of these courses of lectures to mechanics is the initial move in a general plan to be inaugurated in all the main labor centers of Germany, dependent upon the success of this experiment.

The expositions of tools and machinery proposed to be established in connection with the lecture courses, in my opinion, offer an excellent opportunity to American manufacturers to make exhibits.

In the boot and shoe trade, from the making of the lasts to the finished product, American machines are the favorites. Perhaps the same result might be reached with the other small trades, if masters and workmen in Germany had an ocular demonstration of the superiority of our tools and machines over those they have been using.

In the summer of 1897 a committee appointed by the city council of Manchester, England, visited many monotechnical and polytechnical schools in Germany and reported upon what they had observed. This special report contains, among other highly important features of the German school system, some remarks about trade schools which may be quoted in this connection:

At Crefeld, in Rhenish Prussia, the textile school enjoys a world-wide repute for the splendor of its equipment and the effectiveness of its influence in promoting the special industry for which Crefeld is famous. The Prussian Government has built and equipped a large three-story building in the neighborhood of the present textile school and museum, to be used as a dyeing and finishing school. It is, indeed, very clearly understood and accepted that the designing, coloring, and finishing of the goods are factors of supreme importance if they are to command the market. Hence the efforts made to give the best artistic and technical training to the students who will be the manufacturers of the future.

This school contains extensive chemical laboratories for instruction in qualitative and quantitive analysis, physical laboratories, rooms for designing, lecture and testing rooms, chemical museum, reading room, and library. In the library are found technical books of all nations bearing upon textiles, all of which are introductory to the special work of the school, namely, the dyeing and finishing of textile goods, particularly those of importance to the special industries of Crefeld and the district.

The equipment is on a most liberal scale, and includes, among other appliances, machinery for dyeing yarn and piece goods in bulk, bleaching vats and kiers, washing machines for piece goods, hydroextractors, yarn washers, milling machines, hydraulic presses, steam drying chambers and machines, jiggers, stretching machines, raising machines, silk and velvet finishing and velvet cutting machinery, and printing machinery. These machines and appliances are in constant use, and under skilled guidance the students carry out the work, which is on a commercial scale.

Much attention is given to the examination of coloring matters and to mordanting on all kinds of fibers and cloth; and constant experimenting with a view to new materials and processes is a special feature of the instruction. As an example of the esteem in which the dyeing school is held as an institution competent to undertake highly responsible work and important researches, the visiting committee was informed that the school is intrusted by the Royal Gobelins Factory, in Berlin, with the dyeing of the yarns used in its special productions, which offer many serious difficulties in producing the delicate shades required. Experiments

are undertaken in testing the colors employed, and in dyeing the yarns for exposure to light, adverse atmospheric influences, resistance to acids, alkalies, and soaps; and investigations are made with a view to the production of coloring matters formerly employed in the dyeing of ancient tapestries.

Every effort is made to assist the manufacturers and merchants; and on their behalf the school will undertake investigations as to the dyeing and finishing of materials submitted, which, when completed, are reported to the manufacturer, with information as to the methods used and the chemicals employed on the fabric, together with the cost of production. These investigations are carried on by the students under the direction of the teachers, and are of inestimable value to them as a training in solving real industrial problems. The importance of this help to the merchant is considerable. He often gets patterns from abroad of goods dyed to a particular shade, which, if he can get produced, probably involve considerable business. These patterns are sent to the school for examination and report. On the occasion of the visit of the committee the students of the school were all, for the time being, engaged in dyeing for a manufacturer 100 kilos of yarn to a particular color which the dyer himself could not produce.

It was a matter of very great interest to the committee to see the highly satisfactory way in which all the appliances and the material in course of working throughout the weaving and dyeing school were kept. Especially is this the case in the weaving school, where there is a great variety of weaving machinery of every class and make, continental and foreign, wide and narrow hand and power looms, driven by belt, rope, and by electric motors. Whenever a new loom comes upon the market it is immediately bought and placed in this school, provision being made for the easy replacement of one loom by another. There are looms for all classes of goods, whether weaving simple patterns in all kinds of yarn, or looms weaving elaborate designs in costly materials for damasks, quilts, tapestries, broché velvets, ribbons, cut and embossed velvets, towels, plushes, pearl gauze, silk and half silk goods of every kind, and worsted and woolen goods. The number of looms in the school, each engaged on separate and specific work, exceeds 130, of which two-thirds are power looms.

It is, indeed, the express object of the school to give variety of experience, and everything is directed to make the teaching vital and inspiring to the students. The beneficial results of this, and of the practical character of the studies is seen in the fact that when the silk trade was depressed, owing to a change in fashion, manufacturers were enabled to start new branches of the textile industry, and so have helped Crefeld to maintain its position as an important textile-producing center.

In the weaving school there are 108 regular day students, most of them sons of manufacturers, chiefly native, but with some foreigners. On Sunday the school is attended (for drawing and lectures only) by about 250 weavers and others employed in the mills. The tuition fees for day students, natives of Prussia, are $30 and $45 per session; for other Germans, $45 and $72.50 per session; for foreigners, $120 and $180 per session. The dyeing school has 45 day students.

The museum, which is open free to the public, is of especial interest and value. It contains not only an admirable collection of ancient and mediæval stuffs, but no opportunity is lost of obtaining samples of the best modern productions, and it is visited by many thousands of designers in the course of a year—a striking evidence of the value of an intelligently conceived and well-organized museum under competent direction. Exhibitions of textile fabrics are occasionally held. The last resulted in the establishment of a new industry in the town for making Smyrna rugs.

It is interesting to note with what discrimination and judgment the educational authorities of Prussia pursue their objects. The authorities at Crefeld were

anxious to see the establishment, as a development of their school, of a department for cotton spinning, but the royal authority declined to give effect to the representations made, and expressed their determination to build and equip such a school in the center of the cotton industry at Gladbach (also in Rhenish Prussia).

There are no less than 13 schools in Prussia devoted to textile training, each with its own peculiar conditions. This enables a certain elasticity and variety of method to be established and tried, and the evils of undue educational competition and rivalry, which are found in England, and which go so far to prevent the establishment of really efficient institutions attended by competent students, are obviated. An instance of this differentiation is seen at Aix la Chapelle (also in Rhenish Prussia), whose textile school was also visited by the committee. This school is devoted to the worsted and woolen industries of the district, and is a good instance of what is called a "Fachschule," or special professional school. The feature which specially characterizes and differentiates it from Crefeld and other like schools is that the spinning and weaving school is conducted upon the principles and, with obvious limitations, on a similar scale to that of a woolen factory. A considerable number of regular workmen are employed in the spinning, weaving, and finishing of woolen cloth, and these men instruct and are assisted by the 60 students in attendance upon the studies of the school.

At Crefeld, on the other hand, the students do the work entirely themselves under the direction of two weaving or two dyeing masters, and the committee venture the opinion that the methods pursued at Crefeld are better calculated to promote sound technical training in the industry and the greater efficiency of the student. At Aix la Chapelle yarn is supplied to the school by the manufacturers, who pay the actual cost, the school being responsible for its quality and workmanship. About 60 pieces of cloth, finished for manufacturers, are turned out each week. As many different kinds of machines as possible are used—for instance, there are three different kinds of doubling. The school possesses a very fine museum, of which the distinctive feature is a collection of patterns of all the goods manufactured in Aix la Chapelle since 1801. Its collection of models is also very extensive, and the students have access to all the textile journals of Germany and other countries.

The committee also visited the municipal weaving school of Berlin, which is devoted mainly to the manufacture of materials for which Berlin enjoys a special repute, namely, buttons, gimp, braids, gold and silver threads, lace and plush goods, and machine embroidery, many of which goods were formerly manufactured to a considerable extent in Manchester, England, and the manufacture of which might be again revived. Dyeing also forms part of the school course. The mantle and ladies' clothing trade of Berlin, in which these small wares are largely used, is exceedingly important: of mantles alone it is said that upwards of $5,000,000 worth are annually exported to England. This school, like others visited by the committee, was exceedingly well equipped, and the goods in course of manufacture in the looms were characterized by great variety of materials and make, and were being most carefully executed.

As showing the thoroughness and the zeal with which the Government supplies the means of technical training in the various industries of the country, it was stated that if any paper—dealing, for example, with some department or detail of the textile industry—is read before any foreign society, and is published or appears in any journal, the communication is immediately translated and circulated throughout the textile schools of Prussia, with directions to have it dealt with as a lecture to the students, and if models, illustrations, or lantern slides are required by way of illustration, they are prepared and sent with the paper. Moreover, in Berlin there exists a department in the bureau of education, not accessible to visitors or inquirers, where models, diagrams, or other means of illustration are prepared

and circulated to the technical schools of the country. The director of the Berlin school superintends the other textile schools of Prussia, and spends three months of each year in visiting them, reporting upon their condition and progress, observing their work, giving information relating to the best points of each, and generally keeping them well abreast of textile improvements and developments. In addition to this, and to insure the advantages to be derived from mutual discussion and serviceable comparison on all points of difficulty and practice, periodical meetings are held of representatives from the textile schools.

The municipal textile school of Berlin is attended by 50 regular day students and 300 evening students, 100 of whom attend on Sundays and in the evenings, and 200 on Sundays only. The evening students include shop assistants and workmen (weavers and dyers). The complete course of study in weaving and dyeing extends over three years, and the weekly hours of study and exercise are 44. Certificates of competence are granted to day students. From the figures given it will be observed that these splendidly equipped schools are intended to accommodate only a small number of day students. These, however, are the men who for the most part will be the "brains" of the industries into which they will shortly enter as foremen, managers, or employers.

Evidence was forthcoming of the value of these schools to the industries concerned, and of the interest taken in them by merchants and manufacturers alike. There is no disposition to question their value, though it is recognized that the cost of their equipment and maintenance, which is mainly provided by the State for the benefit of particular industries or localities, is very great. Not less surprising was it to find the quality of the general education possessed by the students attending these special schools was exceptionally high. Of those in attendance at the Berlin municipal weaving school, 95 per cent possessed the leaving certificate of the highest grade of the "Realschule," which ranks with the best class of our secondary schools, and gives the holder the privilege of only one year's military service, reducing it to one-third. There is no entrance examination for evening students, but the excellent system of instruction in the public schools, continued until 14 years of age, insures educational attainment equal to the standard required before entering upon courses of scientific and technical instruction. Poor students can attend without charge upon application being made. Here, as elsewhere, the manufacturers receive from the school every assistance in problems affecting their industry.

The committee are convinced that the textile schools of Germany, so far as they have observed them, are of singular value in training up a supply of exceedingly well-instructed men, capable, by reason of the methods employed, the examples studied, the variety of the appliances used, and the investigations and experiments made, to take the lead as foremen, managers, and manufacturers in the industries concerned.

VI. THE PREPARATION OF NORMAL SCHOOL TEACHERS IN PRUSSIA.

During recent years the preparation, professional and general, of normal school teachers in Germany has been under discussion. Frequently the complaint is raised, in Prussia particularly, that too many theologians are appointed to the principalship of such schools; and with equal emphasis it is said that not enough university men—that is, graduates of the philosophical faculty—are appointed. Many writers urge that appointing only, or chiefly, normal school gradu-

ates as teachers and principals would have a tendency to lower the standard of these schools. They would rise in usefulness and influence with the appointment of teachers who have acquired a higher education than normal schools can and do give.

The following tabular statement, which is taken from the Pädagogische Blätter (No. 1, 1899), Gotha, is the result of an inquiry instituted by the editor of that journal, and states the facts as they existed on May 1, 1898. The table includes also the royal school inspectors (superintendents). Their professional training has also been under discussion in the press and the House of Deputies (lower house of Parliament).

The sum total of 1,191 (including the 277 school inspectors) does not tally with the statistics published by the State authorities in 1896; for at that time the number of teachers in normal schools for men was 832 and that of teachers in schools for women 97. Together with the number of inspectors (277) the total is 1,206. It is evident that some schools failed to report, but the report shows a large enough number to safely judge from it.

Comparisons are to be made with caution; unless the conditions are the same a comparison with normal schools in this country can not be instituted, the course of study of Prussian normal schools being one of four years, and the legal age for admission of students being 18.

Table showing the professional preparation of normal school teachers in Prussia.

Province.	Rank or position of teacher.	Total number.	Studied theology in university.	Studied philology in university.	Studied science and mathematics.	Normal school graduates.	Normal school and university graduates.
East Prussia	Principals	7	4	1		1	1
	Head teachers	9	6	2		1	
	Regular teachers	37	2	2		33	
	Assistant teachers	7		1		6	
	District school inspectors	23	12	9	1	1	
West Prussia	Principals	6	2	2		2	
	Head teachers	4	2		1	1	
	Regular teachers	25	2			23	
	Assistant teachers	9		1		8	
	District school inspectors	41	7	18	2	14	
Brandenburg	Principals	11	8	2		1	
	Head teachers	14	1	6	2	3	2
	Regular teachers	57	1	3	1	50	2
	Assistant teachers	14	1	1		12	
	District school inspectors	3	2	1			
Pomerania	Principals	7	6	1			
	Head teachers	7	5	1		1	
	Regular teachers	34		1		33	
	Assistant teachers	1				1	
	District school inspectors	2	2				
Posen	Principals	6	2	2	2		
	Head teachers	7	4	2		1	
	Regular teachers	39		1		38	
	Assistant teachers	3				3	
	District school inspectors	43	5	25		13	
Silesia	Principals	18	7	8	2	1	
	Head teachers	20	6	2		10	2
	Regular teachers	84	3	2	1	78	
	Assistant teachers	18		2		16	
	District school inspectors	52	4	36	1	11	

Table showing the professional preparation of normal school teachers in Prussia—Continued.

Province.	Rank or position of teacher.	Total number.	Studied theology in university.	Studied philology in university.	Studied science and mathematics.	Normal school graduates.	Normal school and university graduates.
Saxony	Principals	11	9	2			
	Head teachers	12	7	2		3	
	Regular teachers	59	1	1		55	2
	Assistant teachers	12	3			9	
	District school inspectors	3	1			2	
Sleswic-Holstein	Principals	7	5	1		1	
	Head teachers	7		2	2	2	1
	Regular teachers	28	1	2		25	
	Assistant teachers	7				7	
	District school inspectors	8	4	2		2	
Hanover	Principals	11	7	2		1	1
	Head teachers	10	4	1		5	
	Regular teachers	50	1	2		47	
	Assistant teachers	13	1			12	
	District school inspectors	3	1	1		1	
Westphalia	Principals	9	6		2	1	
	Head teachers	10	8	1		1	
	Regular teachers	38		2		35	1
	Assistant teachers	15				13	2
	District school inspectors	34	6	17		11	
Hesse-Nassau	Principals	6		3		1	2
	Head teachers	6	3	1		2	
	Regular teachers	26	2	2		22	
	Assistant teachers	5	1			4	
	District school inspectors	1		1			
Rhenish Prussia	Principals	19	7	6	1	2	3
	Head teachers	19	3	5		10	1
	Regular teachers	70	6	1		62	1
	Assistant teachers	20	2	1	1	16	
	District school inspectors	64	5	35	3	18	3
			No. *%*	*No.* *%*	*No.* *%*	*No.* *%*	*No.* *%*
The whole Kingdom.	Principals	118	63 53	30 25	7 6	11 10	7 6
	Head teachers	125	49 39	25 20	5 4	40 32	6 5
	Regular teachers	547	19 3	19 3	2	501 92	6 1
	Assistant teachers	124	8 6	6 5	1 1	107 86	2 2
	District school inspectors	277	49 18	152 55		73 26	3 1
Total		1,191	188 16	247 21		732 61	24 2

VII. EDUCATION IN THE KINGDOM OF SAXONY.

CONTENTS.—Introduction.—I. Higher education.—II. Military schools.—III. Institutions devoted to secondary education.—IV. Normal schools.—V. Institutions devoted to industrial education: (*a*) Polyindustrial schools; (*b*) Monoindustrial or trade schools.—VI. Secondary mining schools.—VII. Elementary industrial schools: (*a*) Supplementary schools; (*b*) Drawing schools; (*c*) Industrial schools for girls.—VIII. Agricultural, horticultural, and dairy schools.—IX. Commercial schools.—X. Elementary or common schools.—XI. Kindergartens.—XII. Other institutions.

INTRODUCTION.

Saxony, one of the 26 States that constitute the German Empire, has a population of 3,783,014 (census of 1895) and an area of 5,787 square miles, or 654 persons to the square mile. Next to Belgium it is the most densely populated country in Europe. This density facilitates the educational efforts of the authorities. Where the population is clustered together in centers, such as cities, towns, and villages, it is easy to provide for schools. But Saxony is chiefly an industrial State,

and hence we find in that State a bewildering number of industrial schools of every kind and description, lower, middle, and higher.

It is interesting to know what agencies combined to make Saxony a perfect beehive of industry. Before and at the time of Martin Luther (1483–1546) the ore mountains (Erz-Gebirge), a long range of mountains separating Saxony from Bohemia, were the seat of an active mining industry; silver, iron, copper, and other ores, as well as coal, were found there. From all parts of the Empire people flocked toward the rich treasures of these mountains.[1] The country's topography is simple: Saxony shelves down toward the north from its southern border, the ore mountains; and the rivers all have a northern direction. Trade and commerce naturally took a northern course.

The silver and other mines in the course of time attracted from all parts of Germany not only a large mining population, but commercial and tradespeople flocked to Saxony also. The population increased enormously. The mines in course of time became exhausted, and a large portion of the population was obliged to resort to other pursuits, it not being so fluctuating as now. Agriculture was out of the question for the majority, hence industrial pursuits, as the other alternative, were resorted to. The rushing mountain streams gave water power for factories, in which household goods and wooden toys were made. The slopes of the mountains, being well provided with various kinds of wood, offered material for a variety of woodworking industries. The woods soon disappeared on the ore mountains, and the people had to resort to other pursuits. Human ingenuity was taxed to find occupation for a large population. The Saxony of to-day has the most varied assortment of industries, textile and otherwise.

The density of population explains in a great measure why the school facilities are so ample. They in turn have led to an ever-increasing differentiation, and improvement in the methods of teaching has gone hand in hand with increasing specialization. At present it may be stated that nowhere else is there such a variety of schools as in Saxony.

The latest governmental report of that State on the educational system, comprising the statistics of 1894 (published in 1897), begins with higher education. Saxony has one university, at Leipsic; one polytechnic institute, at Dresden; one veterinary school, in Dresden; one mining academy, in Freiberg; one forestry academy, in Tharandt;

[1] Luther's father was a miner, and in his time the coins struck from the silver found in the mines of the Joachim's Valley (Joachim's Thal) were called Joachimsthaler. For brevity's sake the adjective Joachim was dropped, and the coins were called "thaler." This word was used universally in Germany, and also in Holland, where it was changed into "daler." This term was carried into England, where it soon changed its spelling and became "dollar." Subsequently it was adopted as the name of the standard monetary measure in the United States. Thus we see that the common everyday word dollar has its origin in Saxony.

one academy of fine arts, in Dresden; one conservatory of music, in Leipsic, and other institutions that may be classed among the higher seats of learning.

I. Higher Education.

The University of Leipsic.—The university was founded in 1409. In 1896 it had 196 professors, who gave, during the scholastic year of 1895–96, 859 series of lectures, consisting of from two to five lectures each. The number of students was 3,112, ranging in age between 20 and 26. Among the total number of students there were 127 not matriculated. These are called "hearers," and are not included in the detailed statistics. Seventy students were Americans. The university has a great number of adjuncts, such as libraries, museums, and seminaries, clinical, surgical, and pathological institutes, an observatory, physical and chemical laboratories, linguistic and philosophical, economic, agricultural, and veterinary seminaries, trial or experimental stations, and is one of the most interesting centers of intellectual life in Germany. While in 1889 the value of the buildings belonging to the university amounted to about $600,000, it was $1,209,000 in 1894, an increase of more than 100 per cent. The current expenditures rose from $342,802 in 1889 to $422,181 in 1894.

The Polytechnic Institute at Dresden.—This institution was founded in 1828, and is now one of the largest of its kind in Germany. In 1894 it had 47 professors, who gave, during the scholastic year of 1893–94, 140 series of lectures, ranging between five and eight lectures each. The number of students was 645, of whom 380 were not matriculated; 9 students were Americans. Like the university, the polytechnic has many institutes, laboratories, and experimental stations. The current expenditures rose from $71,594 in 1889 to $91,863 in 1894.

The Veterinary School at Dresden was established in 1780. In 1894 it had 12 professors and 125 students. The expenditures rose from $15,855 in 1888 to $19,138 in 1894.

The Mining Academy at Freiberg was founded in 1766. In 1894 it had 12 professors and 161 students, 20 of whom were Americans. The expenditures decreased from $27,419 in 1888 to $25,588 in 1893.

The Forestry Academy at Tharandt was founded in 1811. In 1894 it had 13 professors and assistants and 65 students, among whom were 27 foreigners. The report fails to state the number of American students attending. The expenditures increased from $16,098 in 1888 to 19,823 in 1893.

The Royal Academy of Fine Arts at Dresden was founded as an academy of painting in 1705, but in 1764 it was changed to its present form. It gives instruction in drawing, painting, sculpture, engraving, wood carving, and architecture. The academy has 18 professors and 114 students. The current expenditures in 1884 amounted to $21,000; in 1895, to $32,000.

The Royal Academy of Fine Arts and Industrial Arts at Leipsic was founded in 1764. In 1871 this institution was directed by the government to devote its chief energy to industrial art; since that time it has increased in attendance considerably. While in 1871, when it was still an academy of fine arts, it had 42 students, in 1894 the number of students had increased to 306. The number of professors is 23. The expenditures during the year 1894 amounted to $23,000.

The Royal School of Industrial Arts and Industrial Art Museum at Dresden was founded in 1875 as a separate school. Previous to that date it had been connected with the Polytechnic Institute. It has 20 professors and 317 students, among whom are 21 foreigners. The entire expenditures during the year 1894 amounted to nearly $40,000.

A Preparatory Department of the School of Industrial Arts at Dresden and the *Royal Industrial School* at Plauen may both be considered preparatory schools for industrial art schools in Saxony.

The Royal Conservatory of Music at Leipsic was established in 1843 and has now 35 professors and 617 students, 239 of whom are foreigners.

The Royal Conservatory of Music and Theater School at Dresden was founded in 1850. This institution has elementary, secondary, and higher classes, but it is difficult to state details.

Sixteen private music schools in Chemnitz, Colditz, Dresden, Jöhstadt, and Leipsic. These schools have together 295 professors and 2,575 students.

The Theater School at Leipsic was founded in 1875. It promotes the dramatic arts.

Other institutions, such as the *Royal Stenographic Institute* at Dresden and the *Royal Woman's Clinic* at Dresden, are also classed among the higher institutions of learning.

II. Military Schools.

These schools should properly be classed among secondary schools, but their singularly exclusive character and special purpose demands a separate classification.

The Cadet-Corps at Dresden, a school for army officers, is an institution similar to that at West Point, N. Y. It had in 1894 a total of 200 students.

The Military School for Non-commissioned Officers at Marienberg had 249 students in 1894.

Soldier-boys' schools at Kleintruppen and the Fortress Königstein have 98 students.

A system of examinations has been arranged for the privilege of serving only one year in the army instead of three years. Every

student of a secondary school may pass that examination after having attended a secondary school for six years. (All secondary instruction in Germany begins with the 11th year of age of the students.) These examinations show a marked increase in the number of successful candidates.

III. Institutions Devoted to Secondary Education.

To this group of institutions belong all schools the scope of which ranges between elementary schools and higher seats of learning. They may be devoted to general culture and prepare for higher education, notably for the university and polytechnica, or for more practical pursuits. The former are divided into gymnasia (or classical high schools), Realgymnasia (schools with Latin, but without Greek), and Realschulen (schools in which modern languages take the place of Latin and Greek). Saxony has 17 gymnasia, 10 Realgymnasia, and 23 Realschulen.

The following table gives the statistics in detail, but to understand the figures correctly it must be stated that this group of schools admits only boys:

Preparatory schools for boys.	Number of teachers.	Number of students.	Total expenditures.	Amount paid by State.	Amount of tuition fees.
Gymnasia (17)	432	5,451	$537,748	$214,245	$153,986
Realgymnasia (10)	243	3,317	223,038	54,978	74,494
Realschulen (23)	330	5,516	291,977	48,552	56,406
Total (50)	1,005	14,284	1,052,763	317,775	284,886

Of secondary schools for girls Saxony has two which rank with the preparatory schools for boys. These two schools have 40 teachers and 741 students. The total expenditures amounted to $39,728, of which the State contributed nothing. The chief supporters of these schools are the city governments of Leipsic and Dresden. About $23,800 tuition fees were paid by the students.

Aside from the public secondary schools a number of small private schools for boys exist in Saxony. Their students numbered 1,343, and their course of study commonly corresponds to that of Realschulen.

IV. Normal Schools.

The Kingdom of Saxony had, in 1894, 19 normal schools, 15 of which are for men, 2 for women, 2 are mixed. Together they had 302 teachers or professors and 2,931 students. The practice schools connected with these normal schools were attended by 2,040 children. The expenditure for the maintenance of normal schools is entirely borne by the State. It amounted to $421,929 in 1894. Aside from these normal schools, which prepare teachers for elementary schools, there

exists in Dresden a normal school for gymnastic teachers. It is open, also, to the students of the Dresden polytechnicum, and was attended by 1,439 students in 1894. The State supports this school almost exclusively. The expenditures amounted to $3,089 in the same year.

V. Institutions Devoted to Industrial Education.

(a) for general industrial education.

The schools grouped here under (a) are secondary in character and results, but do not prepare for admission to higher seats of learning.

General industrial schools.	Number of teachers.	Number of students.	Number of foreigners.	Total expenditures.	Tuition fees.
In Chemnitz:					
Technical school	49	297	13	$70,000.	$13,691
School for builders		141	1		
School for foremen		241	10		
Industrial design		155	8		
In Leipsic:					
City industrial school	38	730	3	21,000	4,500
In Mitweida:					
Technical school	30	1,226	333	(a)	(a)
Total	117	2,790	368	.....	.....

a Private support and tuition fee.

(b) for special industrial education.

The following-named schools are trade schools—i. e., not poly-industrial, but mono-industrial:

Special industrial schools.	Number of teachers.	Number of students.	Total expenditures.	Amount of State's contribution.	Tuition fees.
5 schools for the building trades	41	769	$26,582	$22,432	$4,150
27 weaving and passementerie schools	167	2,430	30,978	22,825	8,153
64 schools for other trades	267	4,052	56,477	31,106	25,371
Total	475	7,251	114,037	76,363	37,674

To the foregoing schools, which represent 47 different trades, should be added 6 navigation schools, which were attended by 118 pupils. The State supports these schools and pays a per capita of about $3.50.

There should also be added 13 courses arranged for machinists and stokers, which were held in the year mentioned in 27 different cities and attended by 4,312 students.

VI. Secondary Mining Schools.

There are three of these, at Freiberg, Zwickau, and Zittau. The one first mentioned is not to be confounded with the mining academy at Freiberg, which is a higher institution.

Secondary mining schools.	Number of teachers.	Number of students.	Total expended.	Amount of State's contribution.	Tuition fees.
Freiberg	5	62	$2,829	$1,629	$200
Zwickau	5	78	4,232	1,249	.....
Zittau	2	8	300	125	.....
Total	12	148	7,361	3,003	.....

VII. Elementary Industrial Schools.

(*a*) industrial supplementary schools.

Saxony has 30 such schools, in 8 of which attendance is compulsory for boys between 14 and 17. Thirty per cent of the whole time given to this kind of instruction is taken in secular Sunday schools, 41 per cent in evening schools, and 29 per cent in full-day schools. The number of teachers in 1894 was 364, and that of pupils 8,053. These schools are not free, but liberally supported by the communities, the tuition fees amounting to 64 per cent of the total income, which was nearly $40,000 in 1894.

(*b*) industrial drawing schools.

Industrial drawing is one of the branches of the elementary schools, but not satisfied with that, the State, large cities, and private corporations combined to establish 9 special drawing schools to aid industry in a very essential way. Many of the students of such drawing schools afterwards enter upon some trade and some even secondary industrial schools. These 9 drawing schools had 28 teachers and 554 pupils and cost about $3,000, of which sum about $800 was defrayed, by tuition fees.

(*c*) industrial schools for girls and women.

There are 18 of these in Saxony, chiefly devoted to pursuits especially adapted to women; among them are sewing, embroidery, domestic economy, designing, etc. They had in 1894 121 teachers, 1,562 pupils, and cost the corporations and communities about $27,000, but of this sum about $16,000 were defrayed by tuition fees.

VIII. Agricultural, Horticultural, and Dairy Schools.

There are 10 such schools in Saxony, mostly supported by agricultural societies, having 105 teachers and 628 students. Cost of maintenance about $33,000, of which sum $8,000 were defrayed by tuition fees. None of these schools can be classed among the secondary schools.

IX. Commercial Schools.

Of these, Saxony, though a minor State, has 41, 4 of which are of so high an order that they are classed among the secondary institutions. Taking them all together, they had, in 1894, 254 teachers and 4,819 students. The amount necessary to maintain them was $121,000, of which sum $105,000 were defrayed by tuition fees.

X. Elementary or Common Schools.

These schools are the pride of the people. The Kingdom had 2,254 schoolhouses, with 11,278 teachers, 9,041 of whom were class teachers, and 617,848 pupils. To this number should be added 79,289 pupils who attend continuation or supplementary schools (evening or secular Sunday school). This system of schools costs $5,846,786 to maintain, 61 per cent of which is defrayed by communal or local taxation, 17 per cent by the State, and the remainder by tuition fees paid chiefly by city children.

Among the agencies for elementary education may be mentioned the schools for defective children, deaf mutes, blind, idiotic, and depraved children, detailed statistics of which are not available. Their pupils are not included in the foregoing total of elementary school pupils. All these institutions for defective children together have 1,313 pupils, while 5,076 defective children are provided with instruction by competent teachers at home.

Twenty-seven lace-making schools for little children are found in the mountainous districts of Saxony. They have 1,295 pupils. Also three braiding schools are maintained with 251 pupils. These manual training or handiwork schools are of course supplementary to the elementary schools, and are maintained chiefly to stimulate the local industries, a policy which is found often under paternal governments such as that of Saxony.

XI. Kindergartens.

In 142 localities of the Kingdom 234 institutions for the training or safe keeping of children of pre-scholastic age are kept; but only 95 of these 234 institutions are real kindergartens. It is difficult to draw a line between kindergartens and "crêches," that is, places to which laboring people bring their very young children to be kept during the day, for all of them attempt kindergarten occupations and plays without laying claims to being kindergartens. All these institutions had in 1894 13,747 children who were cared for by 346 nurses and kindergartners.

XII. Other Institutions.

In large cities, such as Dresden, Leipsic, Chemnitz, and Zwickau, institutions are maintained in which boys are kept after school hours to keep them from evil associations. In these places well-trained and

enthusiastic teachers keep the boys employed (and in some cases the girls) with manual work and plays until the hour arrives when fathers and mothers come home from the factories. All these and many (at least 50) other manual-training schools for boys and girls are private institutions and do not receive subsidies from State or city authorities. They are doing very excellent work training the children in order, diligence, cleanliness, and general moral conduct, children who would be lost in the slums for want of proper direction and guidance.

From this array of educational institutions it is obvious that few, if any, States in the world can claim to have set afoot so many moral and educational agencies as the small State of Saxony in Germany.

VIII. FEDERAL AID FOR ELEMENTARY SCHOOLS IN SWITZERLAND.

TOPICAL OUTLINE—Introduction of the Translator—Original Resolution in Parliament—Arguments in Favor—Basis of Distribution—Estimate of Expenditures—Resubmission of the Project.

The following important document will be more readily understood if it be stated that in Switzerland, as in the United States, education—elementary, secondary, and higher—is a matter that concerns each individual State (canton). The Federal Government maintains only a polytechnic institute (at Zurich) and spends a limited sum (annually appropriated by Parliament) for physical and industrial education, because these are affairs of the general State, or union, and affect the army or common defense. Now, elementary education in the different cantons varies greatly in organization, management, and results. The schools maintained in cantons such as Basel, Berne, Geneva, Zurich, and others, are excellent, and the communities and cantonal governments spend large sums of money in maintaining them in a high state of efficiency; while in poorer cantons, especially in mountainous and other rural sections, the schools are rather backward.

This state of affairs it is the object of the following report to improve through Federal aid. The report was occasioned by a resolution in the National Council (upper house of Parliament), which was referred to the Federal Council (lower house), where it was pigeonholed. The question was taken up by various cantonal governments, and the combined replies of these authorities, under the lead of those of Zurich, were reported back to the Federal Executive and Parliament.

The movement has its origin in the desire of a certain influential part of the communities to procure a Federal subsidy for primary education, the granting of which the Federal constitution expressly forbids, but which it is hoped can be obtained on the same grounds on which Federal subsidies for manual and industrial training, phys-

ical education, and the training of apprentices were obtained, namely, on the plea of the general welfare of the Federation.

It is doubtful whether the Federal Council (lower house of Parliament) and the Executive will concede the point, but the document is very well adapted to serve as an object lesson in Swiss government.

REPORT OF THE CANTONAL GOVERNMENTS TO THE SWISS CENTRAL EXECUTIVE AND PARLIAMENT (FEDERAL COUNCIL) CONCERNING A LAW FOR SUBSIDIZING PUBLIC PRIMARY SCHOOLS THROUGH THE FEDERAL GOVERNMENT, APRIL 15, 1898.

To his Excellency, the President, for his own notice and that of the members of Parliament.

Mr. PRESIDENT: Gentlemen of the Federal Council:

I.

On the 7th of June, 1893, the National Council[1] declared the following resolution of Messrs. Curti and confrères in order, and it was subsequently passed:

"The Federal Council is requested to investigate whether the provisions of article 27 of the Federal Constitution, which requires sufficient elementary instruction for every Swiss child, are everywhere within the limits of the union complied with, and whether the several cantons may not be subsidized by the union, in the measure that its means permit, for the purpose of securing sufficient primary education."

The Federal Council accepted this commission, and in the year 1895, on the basis of a report by one of its members, Dr. C. Schenk (since deceased), defined the principles upon which a federal subvention to the primary school systems of Switzerland might be granted.

Since then the question has not been agitated. The plan of 1895 received no further recognition from Parliament, but was laid aside, probably on account of the great unsettled questions of insurance for accident or sickness and federal control of the railroads.

The fact that the school question did not receive the consideration from the members of the Federal Council which was popularly desired caused a state of excitement among the teachers in all parts of the country. This excitement found expression in an initiative measure proposed by the teachers' union of Switzerland, relating to federal aid to public schools. According to this an amendment to the federal constitution is contemplated as the foundation for subsidizing primary schools.

Particularly because of the pressure brought to bear by the teachers of different cantons, this measure of initiative[2] was to be among the first in order at the beginning of the year 1897. At this juncture the educational authorities of several cantons took the matter under advisement, and upon invitation of the board of education of Zurich, the director of which took the chair, the various boards met four times to discuss the question.

Various reasons explain the interference of cantonal boards of education in the question of subsidizing public primary schools through the Federal Government:

(1) The desire to have the Federation administer the affairs of public education

[1] Upper house of Parliament, consisting of deputies chosen by the cantonal legislatures; the Federal Council is the lower house, members of which are elected by popular ballot.

[2] A law may be proposed by the people, who are said in such case to take the "initiative"; if it has 40,000 subscribers it is to be taken up by Parliament, which, in case the bill is passed, submits it to the "referendum", or popular vote.

is based upon the inadequacy of means at the disposal of cantons for the extension of school organization. The invitation addressed to the various cantonal school authorities to come together for consultation (January 20, 1897) emphasizes this in the following terms:

"A glance at the efforts made in behalf of public schools shows that all the cantons, without exception, are striving to advance as far as they are able their school systems. Imbued with the spirit of emulation, they are making every endeavor to give them that form required by the modern development of the condition of life. Despite the best of intentions, the cantons are often unable to proceed as far as they might wish; for, at the present time, ever-increasing demands in every direction are made upon them. The necessary consideration of these claims, especially those of an economic nature, which the cantonal governments must meet, makes it impossible for them to allow ample means for the extension of school organization, and particularly that of the elementary schools. Experience teaches that any development of the school means a greater outlay, for which a number of cantons find it difficult to provide. This is especially the case where taxation has reached almost the limit as regards the individual or where the revision of revenue laws does not keep pace with the increase of expenditures.

"We have intimated that a deep-felt desire prevails in all the cantons to extend their school systems. A few of them have already bills to be submitted to their legislatures; but the fate of nearly all these measures is uncertain, as they involve important financial consequences. A cursory review of the Swiss cantons will shed a clearer light on this subject:

"In the Canton of Zurich, where a new school law is to be submitted to the authorities and the people, it is more than probable that the project, which calls for an increased expenditure of a quarter of a million of francs, will come to naught on account of the consequent increased taxation.

"The Canton of Berne in 1894 added a number of progressive amendments to its primary school law to be successively carried into effect. The law as amended came into full force in 1897; and in consequence of its faithful execution the finances of the cantonal government for the year 1897 showed a rather depressing deficit. The increase in the expenditures for primary schools amounts to over three-fourths of a million of francs.

"The authorities of the Canton of Lucerne are engaged in discussing a bill relative to a change of the law of September 26, 1879, in which bill are incorporated a number of material improvements in popular education.

"The Canton of Uri is about to make considerable progress in education by the introduction of compulsory attendance at continuation schools and the extension of time of attendance in primary schools. Such an advancement will hardly be brought about without a noticeable increase of expenditures.

"In the Canton of Zug an excellent bill for the reorganization of the school system has been under consideration for years; its financial consequences alone prevent its adoption for trial.

"The Canton of Soleure has for years been engaged in reorganizing its school system. A preliminary fruit of this work, the law passsed by the legislature changing the regulations of compulsory attendance, was annulled by popular vote on February 28, 1897.

"St. Galle has considerably increased the teachers' salaries by voting in favor of periodical increments (Alterszulagen), and at the same time greatly enlarged the State's contributions toward the school fund and deficits of elementary and secondary schools, as well as continuation schools. It has built many schoolhouses and increased the teachers' pension fund.

"Thurgau is preparing a new school law. A similar attempt in Grisons failed of popular approval. St. Galle is carrying out the measure of free text-books for

children with indomitable energy, despite financial difficulty at the beginning. During the summer of 1893, in Thurgau, an attempt in this direction was defeated by popular vote, influenced, no doubt, by the consideration of expense. Since then no further effort in that direction has been made, although the measure is regarded with favor.

"In Appenzell Inner Rhodes the progressive school regulation of October 29, 1896, demonstrates the settled purpose of that State to perfect its school system. Appenzell Outer Rhodes is waiting for a favorable opportunity to present a new school bill.

"The Canton of Aargau likewise has an excellent draft of a school law in readiness, which will entail an increase of expenditure amounting to hundreds of thousands.

"The Cantons of Ticino and Valois, during the past year, revised their laws regulating the salaries of elementary school teachers. These were considerably increased, and the discussions which took place gave ample evidence that only insufficient means prevented further increases.

"In the Canton of Vaud the question of teachers' pensions was solved, February, 1897, by a liberal interpretation of the excellent laws for primary schools (1889) and for secondary schools (1892).

"Thus throughout Switzerland a number of bills are awaiting official consideration and the confirmation of the State. They all represent decided progress in educational affairs, and it would be regretted if their latent force should not be utilized. All the cantons desire their bills to become law. Such action, however, will, in many cases, be possible only when the question of attendant increased expenditures shall have been satisfactorily solved."

Since the publication of this circular the facts mentioned in the foregoing paragraphs have been somewhat changed. A bill for the extension of the course of study at the normal school at St. Galle to four years met with negative popular vote during the year 1897, partly because of the increase of expenditure which it would have entailed. In the Canton of Thurgau a new law respecting teachers' salaries received the sanction of the State by only a small majority of votes.

As regards the cantons not mentioned in the circular quoted, Glarus, among others, has made efforts at different times within the last ten years to model its otherwise well-organized school system so as to meet the increased demands of modern society. We need only call to mind the projected reforms of secondary schools. The prime cause that prevented the adoption of these reforms was the very considerable increase of expenditure involved.

That no important changes in the school laws have been considered in the cantons of Schwyz, Obwalden, Nidwalden, Baselland, and Schaffhausen is likewise due to insufficiency of means. All these cantons have been obliged to develop their school system as far as possible within the limits set by existing laws and school regulations.

Freiburg has revised its law concerning the age allowances of teachers. In respect to the remaining cantons, Basel City, Vaud, Neuchâtel, and Geneva, it may be said that they have taken the lead in Switzerland during the past five or ten years, as far as progressive legislation affecting education is concerned.

(2) An active interest on the part of the teachers in the school initiative would hardly have met with successful issue, considering the great questions just then pending, namely, the law of compulsory insurance for accident and sickness, and even in the most favorable case would have deferred the final solution of the question of Federal subsidy for many years.

The aforementioned conferences of school authorities were well attended by representatives from all the cantons, excepting Vaud and Geneva, delegates of which were present at the first sitting only.

II.

A proposition prepared by a select committee, consisting of the representatives from the cantons Zurich, Berne, Lucerne, St. Gall, and Neuchâtel during the first conference, defined the principles which in the opinion of the leaders of education should be accepted in framing a Federal law relative to subsidizing State primary schools by the Federal Government. The result of the discussions was the draft of a proposed Federal law, as given below. This bill is based on the one adopted by the Federal Council, July 5, 1895, following the report of Dr. Schenk, but in essential points proposes far-reaching changes. It may be advisable to make brief mention of the separate points in the bill which was the outcome of the discussions at the directors' conferences and to quote the Federal bill only when necessary for comparison:

ART. I. The bill treats of compulsory and State primary education, and therefore the wording of its title and of article 1 corresponds with the demands of article 27 of the Federal constitution. It must not be forgotten at the same time that the conception of primary instruction varies in the cantonal school laws in signification and extent. The conference of cantonal school directors is of opinion that the interpretation of the idea as to what constitutes primary education should be as comprehensive as possible.

The varied interpretation of the idea of primary education which characterizes cantonal legislation is promoted by considerations of a purely practical nature. Many cantons are no longer able to institute improvements for the primary school in its narrower sense (week-day and supplementary schools), as they are restricted by the industrial relations of the people, considerations of a geographical nature, etc. On the other hand, the higher grades of primary instruction (so-called continuation schools and preparatory courses for army recruits, either compulsory or optional), which the school laws of some cantons expressly declare to be a part of primary instruction, open a broad field to State activity.

Since thus the conception of primary education is specified in the new Article I, the same rule (or measure) will be fairly and justly applied to the school systems of all the cantons; hence there can be no dickering with individual cantons for consideration of grades of schools instituted specially by them to meet local demands.

ART. II. The purposes for which the Federal subsidy may be lawfully expended, according to the judgment of the canton, are also described in this circumscribed sense of primary education. Too wide an interpretation, of course, would result in a complete loss of the subsidy. On this account a proportionately small number of purposes was mentioned in Article II; still it gives room enough for the consideration of the manifold cantonal school arrangements, and too great a variety of needs would create too many hindrances. By means of the Federal subsidy, soup may be distributed to hungry school children in one canton; in another, old, deserving, disabled teachers may be pensioned, and the vexed question of pensions settled by a fair and humane measure. In a third canton female handiwork may be generally introduced, or the law of compulsory attendance at continuation or supplementary schools may be enforced. In some cantons the purposes mentioned may all be considered in order, according to existing conditions.

ART. III. Instead of the text of the Federal proposition, which was intended simply to apply the regulations for subsidizing industrial and technical schools to elementary schools, a form was selected which does not imply an immediate greater burden for cantons and communities, or, in other words, does not require a continuation of their present heavy taxation for school purposes; but in presenting something like financial equalization in detail Article III makes a fair allowance for the fact that in many cantons and communities the citizens have arrived at the limit of economic capacity as regards primary schools. The facts of what has

been accomplished until now were clearly defined, and the average of the accomplishments of cantons and communities within the last ten years was accepted as a standard. By this consideration of a longer period of time allowances are made for the cantons of western Switzerland, which during the last ten or fifteen years have made decided sacrifices in behalf of the improvement of their schools, as well as for those (Bern, for instance) whose appropriations for primary schools have in the last two years largely increased in consequence of the new primary school laws.

ART. IV. This article contains the most important measure of the bill. It mentions the limit of Federal subsidies and the methods of their calculation. As Article IV, which takes the place of Articles IV and V of the Federal proposition, is altogether different from the latter, a closer examination of it is deemed advisable. According to it the basis of calculation is the number of appointments of teachers; whereas the Federal proposition divides the cantons into different classes, with varying quotas of 30, 40, and 50 cents per capita of the population. The following details are worthy of notice:

A. THE BASIS OF CALCULATION.

In determining the annual payments to the cantons, the Federal Council had in its plan taken population and economic capacity for a basis of calculation. As seriously as these two factors should be considered theoretically, it can not be denied that especially in reference to economic capacity the classification of cantons would be determined more by sentiment than by calculations and considerations based on economics and tax rolls, because of the lack of reliable data. Every classification based on economic capacity of the cantons is necessarily liable to arbitrariness, and in consequence the most just efforts to secure the correct medium would provoke criticism. The division of the cantons into categories by the Federal Council is by no means free from objection.

The basis of calculation, especially in Switzerland with its 25 cantonal governments, must be, as far as possible, reliable and unchangeable. The necessary "standard measure" has therefore been sought. The different bases, as schools, class rooms, percentage of attendance, and force of teachers in the different cantons, could all be and were considered in that connection.

A more minute study of the conditions of the primary schools[1] in Switzerland discloses the fact that the meaning of the terms school and class or grade changes from canton to canton; attendance could with even less surety be taken as a basis, since it is difficult to quote the exact number of pupils in the different cantons. It would not be practical to take the attendance at week day and supplementary schools, review classes, drill classes, continuation schools, female work schools, and singing schools as the sum total upon which to determine the amount of subsidy. In the categories of pupils mentioned the number of hours a week per annum varies between one-half hour and thirty-three hours, according to the limit or organization of compulsory education as determined by the cantonal school laws. In all good faith, different opinions might be formed as to the understanding of the term pupil, by which the amount of Federal subsidy should be decided.

Hence the number of teachers or appointments was finally accepted as a standard measure. This basis best expresses, absolutely and relatively, the burden which the several cantons have undertaken to carry, for from three-fourths, to four-fifths of the total expenditures for public schools in Switzerland is paid to teachers. Cantons with a smaller force of teachers receive a smaller quota corresponding to their activity in the field of education; others with a stronger force

[1] In Switzerland the primary school is usually an elementary school of six years; sometimes one of four years.

of teachers a proportionately larger sum. Taken absolutely the average per teacher is the same for all. Relatively, it is true, the poorer cantons paying only modest salaries would, of course, receive a proportionately larger amount than the richer cantons. This fact only contributes to the elevation of schools principally where it is most necessary and without hurting other justifiable claims. The accepted basis of calculation exercises an immediate and directly favorable influence on schools, even under the most varied territorial conditions. Important rational improvements in school systems pay at once.

If the number of appointed teachers determines the amount of subsidy, the relief of overcrowded classes and the erection of new schools become easier.

Therefore the number of primary school-teachers definitely appointed is taken as the basis of calculation. It has also the advantage of being easily and accurately determined. Appointments in cantons where for geographical reasons half-year schools predominate (Grisons, Ticino, Valais, and part of Uri) could be reckoned with those of full term.

By reckoning on the number of primary school appointments the factor of population is, up to a certain point, likewise considered, though it must be conceded that this is done in an indirect and inconspicuous manner.

Since the factor of population influences the amount of subsidies only in a secondary or indirect way, and depends upon the annually changing number of appointments, so that it can keep pace with the development of school conditions, any unfairness is avoided which would necessarily result from basing the calculation on the latest Federal census. The basis adopted originates in the fact that the annual increase of population, particularly in industrial cantons, and other fluctuations in cantons situated near the boundaries, could not receive consideration in the calculation of subsidies during the interim between census reports.

B. The Quotas of the Different Cantons Compared with Those of the Proposition of the Federal Council.

Article IV of bill newly submitted (see supplement) prescribes 200 francs (about $40) per primary school appointment, which makes the total Federal subsidy for the 10,000 appointments in Switzerland amount to 2,000,000 francs (about $400,000) in round numbers.

To form a correct idea of the comparative significance of the Federal subsidy, one must necessarily take into account the total expenditures of cantons and communities for primary schools.

The following tabulated review presents the subject clearly and needs no further comment:

No.	Cantons.	Number of primary school-teachers, 1896–97.	Total expenditures for primary schools in 1896.		Federal subsidy.		Per cent of present expenditures.
			Cantonal.	Local.	Calculated by the Council, July, 1895.	Calculated by the conference, July, 1897.	
1	Zurich	837	$346,442	$780,000	$22,231	$35,480	10
2	Bern	2,106	265,915	500,000	42,936	84,200	32
3	Lucerne	335	57,515	80,000	10,829	13,400	23
4	Uri	56	2,818	8,135	1,725	2,240	80
5	Schwytz	144	8,557	13,421	5,031	5,760	68
6	Obwalden	47	831	8,451	1,203	1,880	227
7	Nidwalden	39	2,100	8,883	1,254	1,560	74
8	Glarus	95	15,000	43,000	2,030	3,800	32
9	Zug	76	5,316	21,704	1,382	2,800	53
10	Freiburg	460	28,000	70,000	9,532	18,400	66
11	Soleure	280	38,000	86,000	6,850	11,200	30
12	Baselstadt	268	300,000	.....	4,425	10,720	4
13	Baselland	169	45,055	57,419	4,955	6,760	15

No.	Cantons.	Number of primary school-teachers, 1896–97.	Total expenditures for primary schools in 1896.		Federal subsidy.		Per cent of present expenditures.
			Cantonal.	Local.	Calculated by the Council, July, 1895.	Calculated by the conference, July, 1897.	
14	Schaffhausen	130	$40,000	$54,000	$2,267	$5,200	13
15	Appenzell I	116	4,687	56,684	4,329	4,640	99
16	Appenzell II	32	5,913	7,000	1,289	1,280	22
17	St. Gall	547	54,000	421,906	18,254	23,880	44
18	Grisons	483	30,302	48,450	7,585	19,320	64
19	Aargau	588	79,223	301,126	15,486	23,520	30
20	Thurgau	296	30,000	130,000	8,374	11,840	40
21	Ticino	536	35,530	62,000	12,675	23,440	66
22	Vaud	1,144	110,650	240,000	14,859	45,760	41
23	Valais	560	5,000	57,000	10,198	22,400	448
24	Neufchâtel	531	74,966	136,615	6,489	21,240	28
25	Geneva	495	97,000	44,000	6,330	16,200	17
	Total, Switzerland	10,274	1,692,820	3,235,834	222,423	416,920	24

NOTE.—Slight deviations from the data of columns 2, 3, and 4 have been disregarded by the translator. In computing the value of the sums stated in the report in American money, 5 francs have been taken to be equal to $1.

According to the foregoing scheme the Federal budget would in future suffer an increase of expenditure of over 2,000,000 francs, or about $400,000. This sum is the minimum of what the future reserve fund for public schools must be. The ever-increasing receipts make this a possibility, although we are confronted by the further fact that the Federal insurance in cases of accident or sickness will consume a great portion of tax and custom receipts, and hence much of the available income intended for administrative purposes. We, too, honestly desire that that new and eminently important measure be favorably decided. All other demands on the Federal treasury must take that measure into consideration. Too far-reaching claims must be modified in the interest of social progress, which will follow upon the realization of these insurance schemes. The school-subsidy proposition must therefore be content with modest Federal assistance, and this consideration has led us to set the federal subsidy for primary schools at as low a figure as possible. If any noteworthy progress in public education is to be made by means of Federal subsidy, the amount can not be less than 2,000,000 francs.

In contradistinction to the federal proposition, which allows a subsidy to definite classes of cantons for five years unchanged, our plan offers a greater adaptability to conditions.

Articles V, VII, and VIII require no further explanation, since they contain the application of the principles laid down in Articles I to IV. As regards Article VI, it upholds the principle that the sovereignty of the cantons in school affairs must not be encroached upon. The cantons reserve the full right of distributing and accounting.

III.

The foregoing propositions are the result of mature deliberations of the representatives of the cantonal departments of education. In this form they may be accepted as the view of the majority and are the product of loyal reciprocation. In the last conference, therefore, the report of the chairman met with no opposition. It moved that the bill for subsidizing public primary schools through the Federal Government be recommended to the legislatures of the several cantons for approval. The report adopted reads that the result of the deliberations contains that which is useful and necessary for the Federal law to include, and it expresses the sense of competent representatives of public education. Consequently the proposed bill presents a concurrence of opinion on the part of the cantonal departments of education as a whole, but several representatives expressly declared dur-

ing the conference that the question of Federal subsidy in behalf of primary schools could be made possible only by a previous revision of article 27 of the Federal constitution and by a law based on such an amendment, and not by a law alone.

Still, the majority of the members of the conference were of opinion that the Federal authorities should decide the constitutionality of the question and that the material side alone deserved their consideration.

Through the influence of the members of the Federal Council from the Canton of Zurich, the bill proposed, together with foregoing report and argument, was laid before all the cantonal governments with the request to express either their agreement or disagreement to its terms.

By the middle of April, 1898, the following cantons reported in its favor: Zurich, Bern, Lucerne, Glarus, Zug, Soleure, Baselstadt, Basel Land, Schaffhausen, Appenzell I and II, St. Gall, Grisons, Aargau, Thurgau, Ticino, Valais, Neuchâtel, Geneva (together 19 cantons). Uri, Schwytz, Obwalden, Nidwalden, Freiburg, and Vaud (6 cantons) declared against it.

In presenting this report now we make the request that if at all possible it be discussed during the next session of the Federal Council.

For the government of the Canton of Zurich:

J. E. GROB,
President.
STÜSSI,
State Secretary.

ZURICH, *April 15, 1898.*

SUPPLEMENT.—DRAFT OF A LAW FOR SUBSIDIZING PUBLIC PRIMARY SCHOOLS THROUGH THE SWISS FEDERAL GOVERNMENT.

[Proposed by the cantonal educational authorities.]

ARTICLE I. The Federal Government is hereby allowed to subsidize the cantons for the purpose of properly supporting their public primary schools.

ART. II. The Federal subsidy shall be expended only for public primary schools, and for the following-named purposes, as the cantons may see fit: (1) equipment of gymnastic halls; (2) new school buildings and remodeling old ones; (3) increase of teaching force and new appointments; (4) appliances for instruction and object-lesson material; (5) free text-books and stationery for pupils; (6) clothing and food for pupils during school hours; (7) higher professional preparation of teachers; (8) increase of salaries and pensions of teachers; (9) establishment of special classes for weak-minded pupils; (10) improvement of continuation schools supplementing primary education.

ART. III. The amounts of subsidy shall not lessen any canton's expenditures for primary schools, estimated by what it spent during the last ten years (cantonal and local expenditures together).

ART. IV. For the said purpose an annual sum, allowing at least 200 francs ($40) for every primary teacher appointed, shall be provided by the Federal Government.

ART. V. Every canton shall be at liberty to accept or refuse the amount of subsidy.

ART. VI. The organization and supervision of schools shall remain a matter for cantonal legislation and administration. The cantons, however, shall be required to hand in a yearly report to the Federal Government showing how the amounts received have been expended.

ART. VII. The subsidy shall be paid in the year following that in which the canton presents its financial statement and after the examination of the latter by the Federal Government.

ART. VIII. The Federal Executive shall decide upon any necessary regulations for the execution of this law.

IX. HISTORY OF SECONDARY SCHOOLS IN HUNGARY.

CONTENTS.—Introduction—Historical review, laws, courses of study and medium of instruction, biographical sketches of Hungarian ministers of education.

The millennial celebration of the foundation of Hungary, coupled with an international exposition in Budapest, gave rise to a great number of retrospective reviews of public life. In every domain of public activity an inventory seems to have been taken in Hungary in 1896. Especially interesting to teachers has proven a monograph on secondary schools in Hungary prepared by Prof. Franz Kemény. His work has been authorized by the minister of education and published in several languages, but not in English. The following chapter, translated from the German, is intended to give the essential points of Kemény's work. It seems prudent, though, to express the technical terms of school organization in American equivalents, so as to present the facts to the American reader in a convenient form for comparison with those of our own schools.

1. HISTORICAL REVIEW.

An exhaustive and authoritative history of the Hungarian secondary school system has not yet been written. Valuable contributions to such a work are not lacking, especially since the minister of public instruction has ordered a separate history to be written of every secondary institution of the Kingdom. This material, chiefly consisting of interesting chronicles, needs to be summarized. The scientific utilization of these monographs and of numerous existing archives will, in time to come, furnish a history both authoritative and exhaustive. At present a sketch of the past in brief outlines may suffice.

The historical development of the Hungarian secondary schools may be divided into four epochs: (1) The time in which the church founded and maintained secondary schools. This exclusive action of the church reached to the middle of the eighteenth century. (2) The beginning of an organization of such schools on the part of the State, during the reign of Maria Theresa. (3) The awakening of a national consciousness and the desire to prove it by organizing the entire educational system under State control. (4) In the last period, the present, the principle of the supremacy of the State is further strengthened, and the eminent importance of secondary education for the entire national intelligence is recognized.

During the earliest of these four epochs the church ruled supreme in educational matters in Hungary as well as in other countries. Wherever the church stepped upon the scene the clergy, with the well-understood purpose of strengthening its own position, established schools as an irresistible means for the assertion of its power. The Latin language and ecclesiastical teachers predominated, and the object of the schools consisted exclusively in preparing clergymen and believers.

This tendency received a new impetus through the Reformation. The competition arising between the different denominations called into existence a new school at every step, which school was to act as a fortress of the faith. The unequal territorial distribution of secondary schools in Hungary to-day is partly the result of this competition. Another peculiar feature of this period was the predominance of foreign models. Scholars, who had returned from the West, brought with them an eagerness to reform and remodel, much to the disadvantage of home traditions. Thus the national individuality suffered. Moreover, the country suf-

fered during several centuries almost constantly from the ravages of war. In considering this, the energy which the people displayed in self-preservation, though it followed foreign models, deserves to be highly appreciated. The national characteristics suffered injuries thereby, but the bloody centuries that rolled over Hungary must be borne in mind when the civilization of the Kingdom is measured. During the ecclesiastical period no distinction was made between secondary and higher education. The institutions (gymnasia) of that time had the exclusive object of promoting the humanistic studies; classical education and general education meant the same thing. The schools of the Protestants and those of the Catholics (Jesuits) spurred one another to increased efforts, and generally exercised a wholesome influence upon each other.

The second epoch, the one which worthily and significantly is named after that illustrious Queen Maria Theresa, appears highly important in consequence of two abiding monuments: (1) the "ratio educationis" of 1777, a study order, and (2) the establishment of a school fund. Beside these the founding of a great number of educational institutions is worthy of mention. There were founded law academies, mining schools, military academies, post-graduate schools, boarding and select schools for the nobility. During this period several important administrative reforms were inaugurated. Unfortunately, under Joseph II a reaction took place which was not advantageous to the schools. This energetic ruler attempted too many reforms. After his brief reign, and after the impetus which national agitation received during the decade beginning with 1790, which culminated in the fostering of the Hungarian language as the national tongue, there followed a time of peace, a standstill as it were (1790–1848). In 1806 the second "ratio educationis" was issued, and remained in force for over forty-two years.

The Protestants replaced Latin by the mother tongue as a medium of instruction in gymnasia or classical schools much earlier than the Catholics. Finally the Government, after a prolonged discussion in Parliament during 1843 and 1844, followed the example of the Protestant Church, and decreed that instruction should be given in the Hungarian language, while Latin was to be treated as a foreign language—i. e., as a branch of study. This met a long-felt desire of the best educated stratum of society, and did much toward consolidating the heterogeneous population. This decree, by means of which the high schools became an important factor of national life, opened the third epoch of development. While formerly the graduates could exhibit only knowledge of Latin as the fruit of eight years' study, now the mother tongue became the medium for the acquisition of a general education and real practical and scientific knowledge. Higher education in consequence was also modernized.

In 1848 the minister of education, Baron Joseph Eötvös, began to reform the entire system of education in Hungary, especially the secondary schools, by introducing so-called departmental teaching; that is to say, appointing the teachers with special regard to the branches they could teach best, and giving into the hand of each one or several kindred branches, thus abandoning the former class-teacher system. But the political revolution of that year interrupted his work. After the country was pacified the then absolute imperial government imposed foreign models upon the high schools, by decreeing for Hungary the same order of organization as was in vogue in Austria proper and in Germany. This order remained in force till 1860. Though the local school authorities tried to materially modify the order to meet local conditions, nothing new was formulated or established. The denominational high schools continued to follow their privileges of autonomy and deviated considerably from the course pursued in state schools.

The "year of adjustment," 1867, was the year in which the Empire of Austria, after the disastrous war with Prussia, was divided into two separate autonomous States, Austria (Cisleithania) and Hungary (Transleithania), each of which is

now sovereign in all matters pertaining to internal affairs, hence also in school affairs. In this year it was that a new life began for Hungarian secondary education. Methods of teaching, organization, and management that dated back several centuries were thoroughly improved; the natural and exact sciences found ample representation in the faculties and the course of study; the system of departmental teaching was adopted; elements that had no legitimate place in secondary schools, as elementary, higher, and professional branches, were lopped off or transferred to other special institutions; and now the classical schools (gymnasia) and the modern high schools (Realschulen) could devote themselves entirely to the purpose of continuing and perfecting a general education and prepare the students for universities and professional schools. The secondary schools of Hungary became the centers of national culture.

Simultaneous with the efforts in reorganizing the whole school system was the attempt to change the various branches—elementary, secondary, and higher—according to the modern demands of pedagogy. After Minister Eötvös had succeeded, in 1868, in submitting a general elementary school law which was passed by Parliament, he began a general secondary school law, but his untimely death put an end to his memorable labors. His bill, though it did not pass as he had prepared it, is noteworthy in one respect—it provided for uniformity in the lower grades, and for a trifurcation of the course in the upper grades, which gave the students an opportunity to choose a profession much later than was possible in former years. This bill was followed by no less than five others, submitted to Parliament by succeeding ministers of education, all of which failed to pass, until at last the bill prepared by Minister August Trefort, in 1883, became a law.

2. Laws and Courses of Study.

(1) *Laws.*—The earlier centuries, owing to constant warfare and denominational quarrels, were not favorable to progressive legislation in behalf of schools. However, there are a few legal regulations dating from the middle of the sixteenth century, which in a general way refer to the establishment and maintenance of schools, but particularly to the protection granted to them. The laws of 1715 and 1723 define the royal supervision of the schools, and that of 1773 refers to the education of the sons of noblemen.

The first noteworthy royal decree referring to schools is the "ratio educationis," the first edition of which appeared under the title "Ratio Educationis Totiusque Rei Literariæ per Regnum Hungariæ et Provincias eidem adnexas. Tomus I. Vindebonæ MDCCLXXVII (pp. 496, 8°). The second complete edition of the "ratio" (two volumes) was issued in 1806, and embraced all the branches of the public educational system. It remained in force till 1848, but was not recognized as authoritative by the Protestants, who had, by a law of 1790–91, secured autonomy in religious and educational affairs. The adherents of the Greek Catholic faith acquired this privilege by law in 1868.

The laws of 1791 and 1792 have reference to instruction in the mother tongue; that of 1844 made the Hungarian language the medium of instruction. This law, however, failed to be generally obeyed, owing to political disturbances that began soon after its passage. During the period from 1849 to 1860 provisional ministerial regulations were followed, until at last, in 1883, a fundamental law for secondary schools was adopted which, with slight modifications, has been in force till today.

(2) *Courses of study.*—The courses of study of secondary schools may generally be considered standards of measurement for the culture development of any age or country, and they offer instructive information if chronologically compared. In Hungarian courses of study individual features began to appear during the reign of Maria Theresa.

The first officially prescribed course, the "ratio educationis," in force from 1777 to 1806, met with many obstacles, which had to be removed before its requirements could be generally followed. The organization it provided for was one of three steps: The lower embraced three years of elementary Latin; the middle, two years of "gymnasial studies," and the upper, two years of philosophical studies. Latin grammar and literature claimed the lion's share of time, to wit, 10 hours a week during the first three years, 6 hours during the fourth and fifth years. The other studies, mathematics, history, etc., were reasonably well provided for; but the mother tongue of the students had only 2 hours a week in the two lowest grades, and none above those grades.

The second "ratio educationis," in force from 1806 to 1848, was in truth merely a second, though somewhat modified, edition of the first. It provided for a course of eight years, a grammar department of four years, which was called "the little gymnasium," a humanistic department of two years, and a philosophical course of two years. The course of study provided for the languages, Latin, Hungarian, and German, the latter as an optional study.

From 1849 to the passage of the law that is now in force the secondary schools were governed by ministerial regulations, binding on all kinds of public secondary schools. The chief features in the first administrative order, called the "Entwurf," were departmental teaching and increased attention to instruction in literature and modern studies. In place of the three departments, lower, middle, and higher courses, two courses were arranged, in both of which the classical languages remained the center. Greek was changed from an optional to a regular study. The mother tongues were amply provided for—that is, German was made the medium of instruction in schools of predominating German communities, Hungarian in others. But in schools where the Hungarian language was treated as the mother tongue German was taught also as a foreign tongue. These regulations provided for graduation examinations and also for professional examinations for teachers.

A noteworthy reform measure was the establishment of modern high schools (Realschulen), called modern in contradistinction to classical schools. These new schools had a course of only six years and were intended to serve as preparatory schools for polytechnical and other professional schools.

These "modern" high schools aimed to impart a general education without the aid of the classical languages and to offer a suitable preparation for agricultural, industrial, and commercial pursuits, as well as to prepare their students for technological universities. To meet the requirements of various pursuits the ministerial regulations provided courses for six, four, three, and even two years. In small towns a three-year "Realschule" was allowed to complete its course by relying upon one year's attendance upon a higher burgher school. "Realschulen" of only two years were connected with elementary schools and served tradesmen and skilled laborers. There was one more kind of school which deserves mention; it was a mixed school, the course of which was framed like that of "Realschulen," but in the upper grades the so-called technical branches, drawing, etc., were replaced by Latin and Greek. The "Realschulen" or modern high schools devoted twenty-seven hours per week (in all the grades) to the mother tongue, twenty-five hours per week to a second modern tongue. The third class studied technology and acquired a limited knowledge of merchandise.

When Hungary was granted the institution of a royal Hungarian council of education an attempt was made in 1861 to reform the secondary-school system, but, no definite school law existing, the Emperor of Austria, in his capacity as King of Hungary, decreed that no changes be made except such as were demanded by modern conditions. Within these restrictions the following alterations were then made: The departmental system was curtailed and the class-teacher system

employed in the first two years. In the classical course of study Latin was given forty-five hours a week (total in all the grades); Greek, eight hours (beginning with the fifth to the eighth grade); Hungarian and literature, thirty-three hours, but only twenty-seven in schools with a purely Hungarian constituency. The course in modern high schools remained as before.

After the readoption of the constitution and the appointment of responsible ministers Baron Joseph Eötvös began a great reform, the principal features of which may be shown in brief outlines, proving that the much-discussed plan of uniformity in secondary education (Einheitschule in Germany) came very near being realized in Hungary. The proposed secondary school was to have a course of nine years, with three divisions—the lower and the upper gymnasium and the lyceum. As has been said before, the noble statesman did not live to see his plan realized, for he died before he had completed his work in detail and before Parliament could pass upon the measure. Neither the spirit of the time nor the educational men were in sympathy with the plan, and the autonomous ecclesiastical schools shunned the costs which the ministers' plan necessitated. The following time-table will explain the plan:

Time-table of Eötvös's uniform secondary school.

[The figures indicate the number of hours per week.]

Branches.	Lower. Gymnasium.				Upper. Gymnasium.		Lyceum.		
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
Religion	2	2	2	2	2	2	Regular branches continued, and universal and church history, archæology, philosophy, political economy added. After the first year in lyceum only those branches are continued which prepare the student for his future profession.		
Hungarian language	3	3	3	3	4	4			
Latin	6	6	5	5	6	6			
German	----	----	2	3	3	3			
Geography	2	2	3	----	2	3			
History	----	----	3	2	3	3			
Mathematics	5	5	3	3	4	4			
Physics	----	----	3	4	----	----			
Chemistry	----	----	----	(4)	----	----			
Natural history	2	2	----	----	2	2			
Drawing *a*	4	4	4	4	----	----			
Gymnastics	2	2	2	2	2	2			
Penmanship	1	1	----	----	----	----			
Total	27	27	28	28 (32)	28	28			
Optional branches	Singing, French, English, Italian.				Drawing and shorthand.				

a I to III, geometrical; IV, freehand drawing.

The minister of education who succeeded Baron Eötvös, Theodor Pauler, returned to the former policy, modified the "Entwurf" (provisional law or regulations), and decreed a new course of study, according to which the classical high school was divided into a lower and an upper gymnasium, each with a four years' course. This decree came into force in 1871. It is worth mentioning that the German language, which had been an optional study in most of these schools, was now made a regular study, to which two hours a week was devoted.

But this ministerial decree did not meet with much approval. The division into lower and upper gymnasium and the want of a gradual development of intellectual culture by means of the mother tongue, and the impossibility of harmonious growth, led to a desire to introduce a better course of study and a more suitable method of instruction based upon psychological foundations. Thus originated the new course of 1879, which was amended by the law of 1883. In this course the Hungarian language, as the mother tongue, for the first time in the

history of secondary schools of the country, became the center of the course and the medium of the entire instruction. The provisions of this law will be found further on.

The "Realschulen" (modern high schools) of Eötvös's Entwurf remained unchanged till 1875, when a new course was prescribed for them. At about this time the professors of the polytechnicum in Budapest began to oppose these modern schools, though specifically intended as preparatory schools for polytechnical studies. They claimed that the graduates of the classical schools were better prepared than the graduates of modern schools, and attributed this fact to the study of classical languages, while the true cause was evidently the fact that the modern secondary school had a course of only six, while the classical had one of eight and nine years. Moreover, another fact was not considered, that the students of these modern schools were not as well prepared when they began their secondary studies, the requirements for admission being low, while those for classical schools were high and very rigidly enforced. Still, the effect of the professors' statement was that the "Realschulen" themselves raised their course from six to eight years, and succeeded in having this course legally established. Hence the plan of former years of establishing a uniform lower secondary course, which might end in a bi- or trifurcation, thus meeting all the various requirements of preparation for university, polytechnicum, and other higher seats of learning, was abandoned, and the dual school, the "gymnasium" or classical, and the "Realschule" or modern school, has been perpetuated.

Time table of the completed "Realschule."

[The figures indicate the number of hours per week.]

Branches.	Grades.								Total.
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	
Religion	1	1	1	1	1	1	1	1	8
History *a*	2	2	2	3	3	3	3	3	21
Hungarian language and literature	5	5	4	4	4	3	3	*b* 5	33
German language and literature	4	3	3	3	3	2	2	2	22
French language and literature	.....	3	3	3	3	3	2	2	19
Geography	2	2	2	2	2	2	2	2	16
Natural history	3	2	.....	.....	2	3	3	2	15
Physics	.....	.....	4	2	.....	.....	4	5	15
Chemistry	.....	.....	.....	3	2	3	2	.....	10
Mathematics	4	3	3	3	5	5	4	3	30
Geometry and geometrical drawing	4	3	2	2	2	3	2	3	21
Freehand drawing	.....	2	4	4	4	2	2	2	20
Gymnastics	2	2	2	2	2	2	2	2	16
Total	27	28	30	32	33	32	32	32	246

a History: Grades I to III, native history; IV to VI, universal history; VII, history of modern times; VIII, philosophy of history.

b Two hours devoted to philosophy, elements of psychology, and logic.

The secondary schools, up to 1883, maintained by the churches and enjoying independence from State control, had a great number of study plans, almost as many as there were schools, and they changed quite frequently. Previous to 1883 two conflicting interests, that of the State and that of the autonomous church, which maintained private schools, clashed, The State was an opponent of weak private schools; the autonomous church, however, saw in them a means of existence. Thus it may be seen that the courses of study of church schools had no influence upon those of public schools, but the latter essentially influenced those of the private schools. To enter into this more minutely would be unprofitable, inasmuch as by the uniform law of 1883 the causes of antagonism were removed.

(3) *Language of instruction.*—Originally the language in which knowledge was

imparted was the Latin, in which also the text-books were printed. Even in the lowest grades of secondary schools (representing the age of 10 or 11 years) the mother tongue was used only to make brief explanations until the knowledge of Latin had progressed far enough for conversation between teacher and pupils. During the reign of Joseph II, German was, by decree, made the medium of instruction, which decree, however, was carried out only in regions where German was the mother tongue of the community; at other places and sections of the Kingdom the professors disobeyed the order, simply because neither teachers nor pupils understood the language; hence Latin was again made the "official" medium of instruction after the death of Joseph II.

But we find that the denominations, as well as the community, and in many cases the likes and dislikes of the professors, decided the language to be used in teaching. The use of the Hungarian language was first practiced by the Protestants toward the end of the eighteenth century. There were Protestant secondary schools with Latin, Hungarian, and German speaking teachers in endless variety in Hungary, while in Siebenbürgen German text-books were in use as early as 1678. Those who tenaciously held on to Latin were the Catholics, until the law of 1844 put an end to Latin as a medium of instruction. During the fifties the imperial government of Austria made new attempts at Germanizing the schools, and permitted other mother tongues as media of instruction, as Bohemian in the upper regions, Servian in Neusatz, Roumanian in Siebenbürgen.

This chaos of languages was at last definitely ended by the law of 1868. The law of 1883 also contains precise statements concerning the school language in secondary schools, which has been mentioned as "The Law of 1883."

BIOGRAPHICAL SKETCHES OF HUNGARIAN MINISTERS OF EDUCATION.

A sketch of the life of each of the ministers of education may close this brief glance into the past. Hungary has had six such ministers since the year 1848, which was the beginning of constitutional government.

(1) *Baron Joseph Eötvös* (1813–1871), after completing his school studies, entered government service first as simple clerk in the office of the Hungarian court, acted for some years as district assessor, traveled much through foreign European countries, then devoted himself to literature, and later on to politics. When the revolution in March, 1848, had led his party to victory, and the first responsible cabinet of ministers was formed, he was called to enter the cabinet as minister of public worship and education. But his work of reform was greatly hampered by conservative influences, and when the revolution in September broke out he resigned. For several years he lived outside of Hungary, and employed his time in literary pursuits, until after the "adjustment" between Austria proper and Hungary in February, 1867, when he was called upon by Count Andrássy to enter his cabinet. He took the same portfolio he had once held and kept it till his death, in 1871. His most noteworthy achievements in office are the drafting of a school law for elementary education, which was passed by Parliament in 1868, and the institution of school inspection, by which the control of the education on the part of the State was secured. With regard to secondary and higher education also, Eötvös effected reforms by establishing a normal school for teachers in high schools and by inviting noted men of science to occupy chairs in Hungarian universities.

(2) *Theodor Pauler* (1816–1886) was professor in the law academy at Agram in 1838, at Raab in 1847 and professor of natural and criminal law at the university at Budapest in 1848–1869. After that he was appointed to the bench (Curial-Richter). From February, 1871, till September, 1872, he was minister of public worship and education, from 1872 to 1875 minister of justice. In 1875 he resumed his work in the university; but in 1878 he was again appointed minister of jus-

tice, which he retained till his death. Pauler is the author of several works on the science of law, history, and philosophy. With his name is coupled the course of study for secondary schools of 1871.

(3) *August Trefort* (1817–1888) studied law and traveled much throughout Europe; was clerk in the Hungarian court-office, representative in Parliament, academician, and in 1848 became chief secretary in the department of commerce. From September 4, 1872, until he died, in 1888, he was minister of public worship and education. In 1885 he was made president of the Hungarian Academy of Sciences. Bishop K. Szász says of him: "The characteristic feature of his work as a minister is the universality with which he promoted every branch of his large office. With equal affection he cared for all kinds of educational institutions and promoted their interests." Of greatest importance is the creation of a law for secondary schools, passed in 1883, which will forever be coupled with his name. He published in German "Speeches and Studies" (Leipzig, 1883), and "Essays and Memorial Orations" (Leipzig, 1887).

(4) *Count Albin Csáky* (born in 1841) attended a classical secondary school in Lőcse, studied law in Kaschau and Budapest, and acquired the diploma for practicing law in 1863. In 1865 he was elected representative in Parliament, in 1867 governor of the Zipser Comitate. During this period he wrote extensively about questions of administration. At the beginning of 1888 he was made vice-president of the upper house of Parliament, and in September of the same year was appointed minister of public worship and education. Aside from his important work in settling vexing denominational questions, it may be stated that he has been one of the stanchest advocates of modern education. The following measures are his work: He introduced gymnastics into the schools, reduced Greek to the position of an optional study, reorganized the state board of education, revised the teachers' pension law, and prepared a new law for the introduction of the kindergarten. In regard to making the secondary institution uniform throughout the kingdom, well-meant efforts were made by him. His term of office lasted till 1894.

(5) *Baron Roland Eötvös*, son of Baron Joseph Eötvös, born in 1848, studied law and administrative science for two years, then followed his inclination and turned to the study of natural science in Königsberg and Heidelberg (Germany). In 1871 he occupied a chair as professor of science in Budapest. In 1883 he became a member and in 1889 the president of the Hungarian Academy of Sciences. In 1894 he was called to the ministry of education, but after little more than a half year he resigned to take up his work in the university. His chief aim, while minter of education, was directed at raising the standard of university professors.

(6) *Julius Wlassics*, born in 1852, is a doctor of laws and a practicing lawyer. In 1875 he entered the service of the State, became in 1882 state prosecutor, and in 1890 professor of law in the university of Budapest. He wrote several works on jurisprudence, which were also translated and published in other countries, and prepared bills which were submitted in Parliament. Since 1892 he has been member of the Hungarian Academy of Sciences and representative in Parliament. His acceptance of the ministry of education dates from January, 1895. He is eagerly laboring in behalf of secondary school reform by assisting the State board in examining the text-books, by instituting examinations, and improving the secondary and higher education of woman.

X.—SEVENTY YEARS' ATTENDANCE IN GERMAN UNIVERSITIES.

Prof. J. Conrad, of the University of Halle, Germany, published in his "Jahrbücher der National-Oekonomie und Statistik" a review of the attendance at German universities, which is very complete and interesting, owing to the fact that it goes back to the year 1831, and shows in ratios to 1,000,000 of the inhabitants how the number of students in the highest seats of learning in Germany has at times fluctuated, yet since the year above mentioned has risen from 395 to 599 in every 1,000,000 of inhabitants. Only matriculated students are counted—no "hearers"—hence few foreigners are among the numbers given, since they only in rare cases matriculate, partly because they have not gone through the regulation routine of the preparatory schools, and partly because they do not aspire to academic degrees or state positions.

From the year 1831–32 to 1896 the numbers in the following tables are given in averages for periods of five years each, while the attendance during the five semesters since 1896 is given in detail. See Tables I, II, III, IV, V, VI, following. Blanks in these tables indicate that the universities have not that particular faculty mentioned in the heading; thus, for instance, in Table II, Münster, Braunsberg, Munich, Würzburg, and Freiburg have no Protestant theological faculty, while in Table III, Berlin, Halle, Greifswald, Königsberg, Göttingen, Marburg, Kiel, Erlangen, Heidelberg, Leipzig, Jena, Rostock, and Strasburg have no Catholic theological faculty. In Giessen the Catholic theological faculty was abandoned in 1850.

The old German University of Strasburg, which had been discontinued during the possession of Alsace by the French, was reestablished in 1871, after the conquest of Alsace and Lorraine; hence the figures given date from that year.

Fluctuations in the attendance are particularly noticeable in Tables II and III, showing that the study of theology is subject to the prevailing political complexion and the economic conditions of the nation. It is certainly significant that 69 years ago 137 Protestant and 100 Catholic students were enrolled as theological students for every 1,000,000 Protestants and Catholics respectively, while in 1899 only 75 Protestants and 77 Catholic students were so enrolled.

On the other hand, we see the number of students of law first decrease from 110 in 1831 to 74 in 1886, and then gradually increase, till it reaches in 1899 a ratio of 165 to every 1,000,000 inhabitants.

The students in medicine numbered only 78 in every million in 1831, decreased to 35 in 1850, rose to 182 in 1890, and since then has decreased to 145 in 1899.

The least fluctuation is noticeable in the attendance of the faculty of philosophy, which prepares teachers for secondary schools, as well as

technologists, mathematicians, political economists, and pharmacists. It began with an attendance of 83 to every 1,000,000 inhabitants in 1831, and rose to 213 to every 1,000,000 in 1899. This great increase gives expression to the fact that this faculty attracts the students of natural sciences, political economy, and financial and administrative sciences, the State administration in Germany requiring many more officers versed in these sciences than formerly. The phenomenal expansion of German industry and commerce also has its influence upon the attendance of this faculty, and induces an ever-increasing number of students of empirical sciences to enroll in the universities, though the number of students of mental philosophy and philology is not decreasing, owing to the great demand for teachers of secondary schools in Germany.

Münster and Braunsberg are incomplete universities, having neither a law nor a medical faculty.

A very interesting feature of the attendance at German universities is seen in the fluctuations of summer and winter semesters. In the winter of 1896–97 Berlin had 1,816 law students; in summer of 1897, only 1,297. Again, in the winter of 1897–98 there were 1,921 law students, and in the following summer only 1,407; the number rose again in the winter following to 2,107. These fluctuations are partly explained by Prof. J. Conrad, who says: "Only a small number of students complete their studies in one university. A large number change universities several times; many attend two or three different universities in order then to return to the first." During the year 1891–92 a comparison resulted in the fact that the average length of attendance was 3.12 semesters, or 1.56 years. These numbers may not express the truth accurately, since foreigners are included in the comparison. The longest time was found to be spent by students in Königsberg, namely, 4.5 semesters; in Breslau and Tübingen, 4; while Heidelberg and Bonn, to which the students flock in summer, owing to the beautiful surroundings of the cities, show only 2 semesters. Naturally the facility with which students change their universities has constantly increased during the last five decades; for during the thirties the average time spent by students in universities was more than four semesters. The strongest migratory tendency is displayed by the law students, who, during recent years, spent on an average 2.58 semesters in one university; the Protestant theologians, 3.15; the Catholic theologians, 4.62; the medical students, despite their very extensive course, 3.72; the students of the philosophic faculty, 3.55 semesters.

TABLE I.—*Number of students in German universities, 1831–1899.*

[Number of matriculated students; averages for several years, or semesters, respectively.]

Years.	Berlin.	Breslau.	Halle.	Greifswald.	Königsberg.	Bonn.	Münster.	Braunsberg.	Göttingen.	Marburg.	Kiel.	Munich.	Würzburg.	Erlangen.	Tübingen.	Heidelberg.	Freiburg.	Leipsic.	Jena.	Giessen.	Rostock.	Strasburg.	Total number.	To every 1,000,000 inhabitants.
1831–32 to 1836	1,821	902	810	208	421	795	261	24	865	331	275	1,556	445	278	806	661	474	1145	501	355	95	.....	13,029	394.89
1836–37 to 1841	1,762	681	655	198	391	647	212	30	744	273	242	1,392	440	297	745	770	343	1002	433	307	95	.....	11,519	
1841–42 to 1846	1,715	707	712	218	347	632	238	33	670	263	208	1,329	477	316	889	727	235	917	421	484	88	.....	11,626	345.88
1846–47 to 1851	1,462	766	671	190	323	806	284	42	676	265	151	1,696	582	396	832	661	291	970	402	476	87	.....	12,029	
1851–52 to 1856	1,599	822	639	214	378	846	348	37	684	245	141	1,701	743	475	764	684	331	843	396	383	98	.....	12,351	334.83
1856–57 to 1861	1,593	831	710	274	390	813	473	42	688	254	149	1,202	648	528	697	584	313	854	427	356	121	.....	12,037	
1861–62 to 1866	1,972	958	768	345	445	896	524	36	721	264	194	1,245	625	474	777	742	303	991	482	378	144	.....	13,284	343.25
1866–67 to 1871	2,219	927	839	420	469	866	453	19	772	332	172	1,215	613	369	755	632	277	1,436	384	293	152	.....	13,611	338.27
1871–72 to 1876	1,948	1,037	968	508	606	776	409	12	1,007	401	175	1,142	890	404	863	651	289	2,686	423	318	141	470	16,124	385.99
1876–77 to 1881	3,102	1,279	1,017	538	723	944	289	18	1,002	510	262	1,582	930	452	1,077	643	426	3,044	491	350	176	713	19,568	444.91
1881–82 to 1886	4,660	1,447	1,509	820	883	1,117	344	19	916	786	419	2,545	1,209	724	1,312	835	858	3,214	599	495	265	830	25,858	561.55
1886–87 to 1891	5,185	1,297	1,577	907	781	1,279	423	28	944	873	538	3,495	1,544	954	1,334	958	1,049	3,288	631	548	352	886	28,861	599.48
1891–92 to 1896	4,573	1,282	1,403	804	679	1,489	417	41	818	813	624	3,552	1,328	1,126	1,212	1,083	1,206	3,030	667	560	421	951	28,079	550.88
1896–97	5,278	1,424	1,511	789	695	1,660	464	63	1,030	864	546	3,706	1,467	1,074	1,170	1,001	1,065	3,126	705	626	499	1,013	29,770	563.40
1897	4,388	1,497	1,548	825	687	1,899	489	61	1,149	1,032	745	3,871	1,430	1,140	1,289	1,230	1,449	3,064	704	663	499	1,016	30,675	577.47
1897–98	5,606	1,488	1,621	744	671	1,690	525	59	1,161	908	838	3,817	1,425	1,068	1,226	1,084	1,073	3,277	632	674	451	1,066	31,194	582.25
1898	4,648	1,568	1,612	858	748	1,996	530	61	1,191	1,107	858	4,028	1,312	1,070	1,377	1,384	1,545	3,174	755	733	462	1,080	32,097	597.65
1898–99	6,151	1,522	1,605	775	778	1,780	479	54	1,227	1,040	645	3,905	1,343	1,026	1,306	1,142	1,141	3,413	763	717	449	1,075	32,336	598.92

TABLE II.—*Number of students of Protestant theology in German universities.*

[Number of matriculated students; averages for several years, or semesters, respectively.]

Years.	Berlin.	Breslau.	Halle.	Greifswald.	Königsberg.	Bonn.	Münster.	Braunsberg.	Göttingen.	Marburg.	Kiel.	Munich.	Würzburg.	Erlangen.	Tübingen.	Heidelberg.	Freiburg.	Leipsic.	Jena.	Giessen.	Rostock.	Strasburg.	Total number.	To every 1,000,000 Protestants.
1831–32 to 1836	534	211	505	90	169	94	.....	.....	224	92	102	.....	.....	140	177	46	.....	402	220	72	15	.....	3,103	137.19
1836–37 to 1841	469	144	380	36	125	84	.....	.....	117	73	70	.....	.....	139	150	18	.....	283	160	68	15	.....	2,321	
1841–42 to 1846	317	89	435	33	75	69	.....	.....	154	72	63	.....	.....	102	164	35	.....	251	110	83	25	.....	2,117	
1846–47 to 1851	197	63	366	27	49	47	.....	.....	137	76	37	.....	.....	179	159	50	.....	212	98	76	25	.....	1,798	80.99
1851–52 to 1856	263	53	368	25	61	60	.....	.....	122	66	25	.....	.....	214	143	71	.....	149	90	51	27	.....	1,751	
1856–57 to 1861	316	96	471	31	122	60	.....	.....	160	80	32	.....	.....	262	185	93	.....	225	118	51	22	.....	2,374	80.02
1861–62 to 1866	396	109	391	35	110	61	.....	.....	145	80	48	.....	.....	276	225	93	.....	261	135	56	41	.....	2,497	99.01
1866–67 to 1871	324	67	318	35	89	56	.....	.....	141	76	55	.....	.....	191	253	57	.....	347	101	50	43	.....	2,154	84.17
1871–72 to 1876	179	46	220	27	59	53	.....	.....	95	49	51	.....	.....	135	259	19	.....	384	85	26	31	.....	1,780	67.00
1876–77 to 1881	191	70	248	51	89	65	.....	.....	112	63	44	.....	.....	170	268	28	.....	407	73	38	38	52	1,961	70.10
1881–82 to 1886	547	143	538	216	186	96	.....	.....	191	137	60	.....	.....	251	367	52	.....	656	127	83	53	82	3,880	142.49
1886–87 to 1891	732	169	660	305	201	130	.....	.....	205	194	86	.....	.....	325	498	88	.....	640	126	99	61	143	4,572	149.32
1891–92 to 1896	483	115	518	240	114	89	.....	.....	155	121	73	.....	.....	252	394	72	.....	416	79	71	44	165	4,002	122.36
1896–97	436	88	416	258	79	76	.....	.....	132	100	56	.....	.....	252	240	47	.....	343	42	51	38	85	3,223	82.33
1897	340	86	421	257	79	80	.....	.....	156	130	52	.....	.....	234	256	59	.....	351	39	54	33	84	3,771	88.35
1897–98	417	83	411	256	65	59	.....	.....	157	110	60	.....	.....	240	241	54	.....	348	35	58	30	82	3,696	78.98
1898	360	81	433	250	69	77	.....	.....	135	125	60	.....	.....	235	309	58	.....	319	47	59	27	71	3,657	78.00
1898–99	412	76	385	205	64	81	.....	.....	142	93	59	.....	.....	181	270	56	.....	317	48	59	32	72	3,552	75.36

TABLE III.—*Number of students of Catholic theology in German universities.*

[Number of matriculated students; averages for several years, or semesters, respectively.]

Years.	Berlin.	Breslau.	Halle.	Greifswald.	Königsberg.	Bonn.	Münster.	Braunsberg.	Göttingen.	Marburg.	Kiel.	Munich.	Würzburg.	Erlangen.	Tübingen.	Heidelberg.	Freiburg.	Leipsic.	Jena.	Giessen.	Rostock.	Strasburg.	Total number.	To every 1,000,000 Catholics.
1831–32 to 1836	.....	218	.....	.....	.....	195	187	24	.....	.....	.....	281	90	.....	142	.....	143	.....	.....	30	.....	.....	1,310	100.32
1836–37 to 1841	.....	171	.....	.....	.....	99	150	30	.....	.....	.....	185	88	.....	91	.....	99	.....	.....	37	.....	.....	960	
1841–42 to 1846	.....	198	.....	.....	.....	117	153	33	.....	.....	.....	183	89	.....	132	.....	85	.....	.....	37	.....	.....	1,027	93.36
1846–47 to 1851	.....	219	.....	.....	.....	184	174	42	.....	.....	.....	241	114	.....	136	.....	138	.....	.....	49	.....	.....	1,297	
1851–52 to 1856	.....	230	.....	.....	.....	202	193	37	.....	.....	.....	214	96	.....	143	.....	185	.....	.....	.....	.....	.....	1,300	95.95
1856–57 to 1861	.....	180	.....	.....	.....	219	258	42	.....	.....	.....	136	96	.....	134	.....	179	.....	.....	.....	.....	.....	1,244	
1861–62 to 1866	.....	176	.....	.....	.....	211	254	36	.....	.....	.....	95	89	.....	130	.....	162	.....	.....	.....	.....	.....	1,153	81.85
1866–67 to 1871	.....	139	.....	.....	.....	186	231	19	.....	.....	.....	92	82	.....	100	.....	133	.....	.....	.....	.....	.....	982	67.05
1871–72 to 1876	.....	95	.....	.....	.....	107	213	12	.....	.....	.....	76	134	.....	115	.....	84	.....	.....	.....	.....	.....	836	54.08
1876–77 to 1881	.....	65	.....	.....	.....	87	94	18	.....	.....	.....	84	142	.....	149	.....	43	.....	.....	.....	.....	.....	682	42.60
1881–82 to 1886	.....	151	.....	.....	.....	78	172	19	.....	.....	.....	121	181	.....	155	.....	73	.....	.....	.....	.....	.....	952	56.81
1886–87 to 1891	.....	180	.....	.....	.....	135	263	25	.....	.....	.....	147	152	.....	156	.....	173	.....	.....	.....	.....	.....	1,231	70.25
1891–92 to 1896	.....	236	.....	.....	.....	210	273	27	.....	.....	.....	140	132	.....	169	.....	221	.....	.....	.....	.....	.....	1,408	76.87
1896–97	.....	251	.....	.....	.....	235	306	33	.....	.....	.....	146	131	.....	179	.....	212	.....	.....	.....	.....	.....	1,493	79.15
1897	.....	238	.....	.....	.....	253	300	43	.....	.....	.....	143	131	.....	176	.....	218	.....	.....	.....	.....	.....	1,502	79.21
1897–98	.....	235	.....	.....	.....	247	314	43	.....	.....	.....	152	146	.....	168	.....	218	.....	.....	.....	.....	.....	1,523	79.60
1898	.....	301	.....	.....	.....	291	305	44	.....	.....	.....	155	135	.....	170	.....	210	.....	.....	.....	.....	.....	1,611	84.28
1898–99	.....	211	.....	.....	.....	273	271	40	.....	.....	.....	167	152	.....	169	.....	199	.....	.....	.....	.....	.....	1,482	76.94

TABLE IV.—*Number of students of law in German universities.*

[Numbers of matriculated students; averages for several years, or semesters, respectively.]

Years.	Berlin.	Breslau.	Halle.	Greifswald.	Königsberg.	Bonn.	Münster.	Braunsberg.	Göttingen.	Marburg.	Kiel.	Munich.	Würzburg.	Erlangen.	Tübingen.	Heidelberg.	Freiburg.	Leipsic.	Jena.	Giessen.	Rostock.	Strasburg.	Total number.	To every 1,000,000 inhabitants.
1831–32 to 1836	560	227	137	34	90	244	.....	.....	324	109	92	490	75	53	90	312	88	439	144	90	44	.....	3,642	109.71
1836–37 to 1841	496	116	87	12	74	223	.....	.....	374	94	94	427	74	75	117	314	88	370	129	77	38	.....	3,179	
1841–42 to 1846	524	137	96	39	75	215	.....	.....	205	90	81	439	92	108	226	466	54	330	150	104	36	.....	3,467	110.1
1846–47 to 1851	572	235	144	40	120	295	.....	.....	334	76	54	640	171	152	211	469	51	387	126	109	35	.....	4,061	
1851–52 to 1856	640	274	147	53	149	273	.....	.....	324	56	54	722	181	149	163	447	64	334	94	106	39	.....	4,169	95.5
1856–57 to 1861	476	152	75	33	86	151	.....	.....	171	37	53	451	133	94	102	274	29	297	81	46	48	.....	2,782	
1861–62 to 1866	483	157	46	14	69	158	.....	.....	176	41	63	439	121	89	86	384	44	315	78	51	53	.....	2,867	74.1
1866–67 to 1871	589	168	56	24	91	172	.....	.....	158	28	31	418	124	68	94	337	48	412	81	52	60	.....	3,011	74.83
1871–72 to 1876	614	326	139	70	188	213	.....	.....	283	50	15	251	108	40	162	339	43	911	94	72	40	163	4,121	98.6
1876–77 to 1881	1,073	373	110	81	175	268	.....	.....	247	90	31	463	116	50	280	278	103	970	110	85	35	187	5,134	116.7
1881–82 to 1886	1,133	225	113	58	129	270	.....	.....	170	84	42	195	147	89	255	273	180	709	90	62	40	105	5,034	100.3
1886–87 to 1891	1,317	214	126	73	136	266	.....	.....	168	118	45	1,280	281	178	257	270	203	895	93	84	45	189	6,248	120.8
1891–92 to 1896	1,378	317	216	99	182	356	.....	.....	203	210	93	1,189	253	227	320	376	317	979	149	133	86	255	7,338	143.86
1896–97	1,816	407	297	133	206	393	.....	.....	306	212	120	936	253	186	319	340	259	1,012	178	175	132	336	8,016	151.67
1897	1,297	443	342	150	197	478	.....	.....	336	282	183	1,083	262	224	372	470	467	964	186	193	130	328	8,387	157.84
1897–98	1,921	410	355	164	206	412	.....	.....	330	229	198	948	249	182	326	340	249	1,032	158	198	119	335	8,391	157.07
1898	1,409	417	376	185	212	506	.....	.....	349	335	202	1,082	239	219	328	513	531	991	208	207	116	305	8,730	162.55
1898–99	2,107	456	373	177	227	473	.....	.....	349	302	122	1,102	320	200	278	345	257	1,089	209	211	98	330	8,925	165.31

TABLE V.—*Number of students of medicine in German universities.*

[Number of matriculated students; averages for several years, or semesters, respectively.]

Years.	Berlin.	Breslau.	Halle.	Greifswald.	Königsberg.	Bonn.	Münster.	Braunsberg.	Göttingen.	Marburg.	Kiel.	Munich.	Würzburg.	Erlangen.	Tübingen.	Heidelberg.	Freiburg.	Leipsic.	Jena.	Giessen.	Rostock.	Strasburg.	Total number.	To every 1,000,000 inhabitants.
1831–32 to 1836	346	115	100	58	69	144	.....	.....	204	75	61	338	193	55	165	219	146	120	75	76	30	.....	2,579	78.8
1836–37 to 1841	392	128	120	66	72	136	.....	.....	201	42	51	196	143	53	126	149	114	145	72	70	20	.....	2,294	
1841–42 to 1846	331	120	108	83	75	95	.....	.....	207	42	41	94	120	26	110	130	75	149	57	62	18	.....	1,943	35.1
1846–47 to 1851	226	88	90	79	56	103	.....	.....	189	49	35	149	145	43	104	116	60	152	57	70	16	.....	1,827	
1851–52 to 1856	280	110	64	79	77	90	.....	.....	197	65	41	277	317	78	95	109	61	168	73	91	19	.....	2,291	
1856–57 to 1861	298	119	45	128	97	108	.....	.....	162	62	35	133	239	80	103	113	52	182	56	96	23	.....	2,333	60.7
1861–62 to 1866	363	152	89	202	115	139	.....	.....	173	38	50	151	253	68	124	91	54	189	62	91	32	.....	2,435	60.9
1866–67 to 1871	423	188	126	262	120	192	.....	.....	150	112	57	213	268	75	116	77	49	210	69	64	37	.....	2,838	70.5
1871–72 to 1876	339	176	152	280	155	140	.....	.....	142	144	59	287	446	108	160	92	98	380	80	63	33	157	3,191	83.5
1876–77 to 1881	425	205	135	249	136	140	.....	.....	132	122	88	378	431	102	158	109	182	395	86	61	38	162	3,734	84
1881–82 to 1886	1,137	379	268	399	234	252	.....	.....	186	215	171	849	681	167	206	213	350	757	159	88	77	209	6,860	149.1
1886–87 to 1891	1,487	363	302	427	255	339	.....	.....	223	252	273	1,151	910	307	251	266	388	830	215	102	138	289	8,768	182.1
1891–92 to 1896	1,216	301	231	379	232	287	.....	.....	211	239	305	1,172	715	345	226	247	362	749	206	122	118	311	7,974	156.71
1896–97	1,199	307	236	313	245	270	.....	.....	237	246	238	1,188	749	349	221	180	288	677	219	139	105	309	7,716	145.99
1897	1,024	345	242	324	247	318	.....	.....	238	273	369	1,205	763	393	270	234	511	650	210	135	109	311	8,051	151.52
1897–98	1,259	347	205	290	254	266	.....	.....	244	249	428	1,146	674	340	255	293	392	670	198	155	106	329	8,050	150.69
1898	1,051	356	245	318	253	339	.....	.....	222	273	439	1,182	627	316	278	272	522	586	233	159	99	324	8,094	150.71
1898–99	1,311	321	241	284	248	252	.....	.....	228	270	321	1,081	650	325	261	240	394	643	224	146	105	335	7,880	145.95

TABLE VI.—*Number of students of philosophy, including pharmacy and political economy, in German universities.*

[Number of matriculated students; averages for several years, or semesters, respectively.]

Years.	Berlin.	Breslau.	Halle.	Greifswald.	Königsberg.	Bonn.	Münster.	Braunsberg.	Göttingen.	Marburg.	Kiel.	Munich.	Würzburg.	Erlangen.	Tübingen.	Heidelberg.	Freiburg.	Leipsic.	Jena.	Giessen.	Rostock.	Strasburg.	Total number.	To every 1,000,000 inhabitants.
1831–32 to 1836	381	131	68	26	93	118	74	....	113	55	20	447	87	30	332	84	97	184	51	88	16	.....	2,395	83
1836–37 to 1841	467	122	68	84	120	105	62	....	92	64	27	584	135	30	261	89	42	204	72	115	22	.....	2,765	
1841–42 to 1846	543	163	73	63	122	136	85	....	104	59	33	613	176	20	257	95	21	207	104	198	9	.....	3,072	89.5
1846–47 to 1851	467	161	71	44	98	177	110	....	116	64	25	666	152	22	232	86	42	219	121	172	11	.....	3,046	
1851–52 to 1856	476	155	60	55	71	221	155	....	141	58	20	488	149	34	220	57	21	172	139	135	13	.....	2,840	87
1856–57 to 1861	503	284	119	82	85	275	215	....	195	75	29	572	180	52	173	104	53	150	172	163	18	.....	3,499	
1861–62 to 1866	740	373	242	104	151	327	270	....	223	95	33	560	162	41	212	174	43	226	207	186	18	.....	4,392	113.5
1866–67 to 1871	883	365	339	109	178	260	222	....	323	116	29	492	139	35	162	161	47	464	133	157	12	.....	4,626	114.9
1871–72 to 1876	816	394	457	131	204	263	196	....	487	158	50	528	202	101	167	201	64	1,011	166	168	34	98	5,896	141.1
1876–77 to 1881	1,413	566	524	157	353	384	195	....	511	235	99	657	241	130	213	232	98	1,272	232	178	65	312	8,057	183.2
1881–82 to 1886	1,874	539	589	147	327	421	173	....	478	352	147	782	201	118	322	296	255	1,212	220	263	94	315	9,123	198.1
1886–87 to 1891	1,714	371	491	101	189	409	160	3	318	309	134	911	201	142	252	333	285	911	181	268	108	292	8,083	167.9
1891–92 to 1896	1,497	313	438	76	152	547	143	14	249	291	115	1,051	227	253	194	387	307	883	233	232	172	278	8,054	157.68
1896–97	1,827	371	568	85	165	686	158	30	355	306	132	1,436	334	287	221	434	306	1,094	266	261	223	283	9,829	186.37
1897	1,727	385	543	94	164	770	189	18	419	347	141	1,440	331	289	215	467	253	1,099	269	281	227	293	9,964	187.52
1897–98	2,009	383	590	84	166	706	211	16	450	329	152	1,571	356	306	256	487	244	1,227	241	263	196	320	10,504	196.62
1898	1,888	413	558	105	214	783	325	17	484	373	157	1,609	311	300	292	541	282	1,278	267	308	220	340	11,065	204.91
1898–99	2,321	458	606	109	239	701	208	14	508	375	143	1,555	321	320	328	501	291	1,364	282	301	214	338	11,497	212.94

CHAPTER V.

EDUCATION IN SWEDEN.

Information on Swedish education in previous Reports.

Character of information.	Report of—	Page.
Swedish school law of 1842	1871	477–480
Brief statement of the schools of Sweden, with statistics	1878	clxxi–clxxii
Another brief statement	1884–85	ccxciii–ccxcv
The school system of Sweden	1888–89	196–221
Education in Sweden	1895–96	966–994

[The following survey of education in Sweden is condensed from a pamphlet of 147 pages, by Dr. C. G. Bergman, inspector of elementary schools of Stockholm, which was prepared for the Art and Industries Exhibition held in Stockholm in 1897.

Dr. Bergman's arrangement is retained, the schools for the defective classes preceding the normal and secondary schools, the universities preceding the technical and manual training schools.]

ELEMENTARY EDUCATION (FOLKUNDERVISNINGEN).

[Infant schools (Småskolor); higher elementary schools (Folkhögskolor); elementary schools (Folkskolor); schools for defective classes (Abnormskolor); normal schools for elementary grades (Folkskoleseminarier).]

The education of the common people is now carried on in accordance with a royal decree of January 20, 1882. Preparatory to the elementary grades are schools for little children, who obtain therein the first elements of knowledge. Lower grade elementary schools are found in outlying sections of the country where the topography does not permit attendance at the elementary schools proper. Higher people's schools are also found in rural districts which may be too remote from the centralized graded schools. According to the reports of inspectors there are 13 of these higher schools in the 2,385 school districts of Sweden. One-fourth as many ambulatory as stationary schools are reported, namely, 8,296 stationary, 2,861 ambulatory, or a total of 11,157 schools (including the higher people's schools, 11,170). If the parents or guardians are too poor to fully equip their children for attendance in school, then the district provides the needed garments or text-books. The schools are under regular inspection, about 20 inspectors having been appointed in 1861; for the years 1893–1898 there were 50, to which may be added others in large cities, their numbers depending upon the needs of the schools as recognized by the city authorities. In 1895 there were 806,981 children of school age in Sweden; of these 409,977 were boys and 397,004 girls.

Children between 7 and 14 years of age classified, with the per cent in each class.

	1882.		1885.		1890.		1895.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Pupils in public elementary schools	587,337	83.9	622,872	84.3	653,457	84.9	686,671	85.1
Pupils in burgher and special schools	11,500	1.6	11,791	1.6	13,159	1.7	11,962	1.5
Pupils in schools for defective classes							914	.1
Pupils in private schools	19,145	2.7	18,365	2.5	16,337	2.1	16,146	2
Children instructed at home	41,883	6	40,586	5.5	34,019	4.4	25,969	3.2
Children not under instruction, but familiar with elementary school course	5,551	.8	6,047	.8	7,013	.9	10,103	1.3
Children who have passed satisfactory final examination	10,560	1.5	14,546	2	19,849	2.6	29,210	3.6
Children kept from school through illness or incapacity during the year	3,227	.5	3,730	.5	3,629	.5	3,388	.4
Children who, for other reasons, have had no instruction	11,410	1.6	10,640	1.4	12,873	1.7	14,672	1.8
Children not reported upon	9,410	1.4	10,118	1.4	9,148	1.2	7,946	1
Total	699,973	100	738,695	100	769,675	100	806,981	100
Among the children 7 to 14 years of age there were instructed in public schools		89		89.8		91.1		92.6

A still closer subdivision, in which the class of school enters into view, is found in the following table:

Children 7 to 14 years of age instructed in public educational institutions.

	1882.		1885.		1890.		1895.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
In stationary infant schools of their own district	99,327	12.9	102,490	13.9	111,729	14.5	127,222	15.8
In ambulatory schools of their own district	105,362	15	93,161	12.6	78,577	10.2	64,481	8
In stationary lower-grade elementary schools of their own district	23,689	3.4	24,174	3.3	28,231	3.7	35,710	4.4
In ambulatory lower-grade elementary schools of their own district	20,801	3	23,143	3.8	28,988	3.8	29,297	3.6
In stationary elementary schools of their own district	260,394	37.2	289,517	39.2	323,569	42	355,963	44.1
In ambulatory elementary schools of their own district	77,735	11.1	73,560	9.9	67,059	8.7	57,798	7.2
Children in these lower-grade schools outside of their own district	8,776	1.3	11,579	1.6	15,121	2	16,001	2
In higher people's schools (högre folk skolor)	253		248		183		199	
Total	587,337	83.9	622,872	84.3	653,457	84.9	686,671	85.1
Children 7 to 14 under instruction in their own district in—								
Stationary schools		64.7		68.1		72.6		77.4
Ambulatory schools		35.3		31.9		27.4		22.6
Total		100		100		100		100

In order to become a teacher of the elementary schools it is necessary to hold a certificate of capacity from a State normal school, to be of good moral character, and to have passed the twenty-first year of age. For the lower grade elementary and infant schools similar prerequisites are expected, also special aptitude as teacher; a diploma of a seminary in the vicinity and proof of teaching capacity from the school committee may take the place of a State normal certificate. For the position of teacher of a high-grade public school a university diploma is to be held by the candidate, who must also have had experience as teacher in the practice department of a normal school.

Teachers in infant and elementary schools.	1868.		1876.		1880.		1885.		1890.		1895.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Men teaching in infant schools	1,676	49.6	860	20.1	657	13.7	456	9	380	7	302	5.2
Women teaching in infant schools	1,707	50.4	3,429	79.9	4,156	86.3	4,624	91	5,058	93	5,487	94.8
Total	3,383	100	4,289	100	4,813	100	5,080	100	5,438	100	5,789	100
Men teaching in lower elementary schools	(*a*)	(*a*)	312	40.5	255	31.1	266	23.8	253	19.9	259	17.5
Women teaching in lower elementary schools	(*a*)	(*a*)	458	59.5	564	68.9	850	76.2	1,020	80.1	1,217	82.5
Total	(*a*)	(*a*)	770	100	819	100	1,116	100	1,273	100	1,476	100
Men teaching in elementary schools proper	3,354	89.2	3,648	86	3,904	82.7	4,178	76.5	4,415	73.3	4,606	68.9
Women teaching in elementary schools proper	408	10.8	592	14	818	17.3	1,280	23.5	1,606	26.7	2,077	31.1
Total	3,762	100	4,240	100	4,722	100	5,458	100	6,021	100	6,683	100
Total male teachers	5,030	70.4	4,820	51.8	4,816	46.5	4,900	42	5,048	39.6	5,167	37
Total female teachers	2,115	29.6	4,479	48.2	5,538	53.5	6,754	58	7,684	60.4	8,781	63
Total	7,145	100	9,299	100	10,354	100	11,654	100	12,732	100	13,948	100

a In 1868 the teachers were classified under infant and elementary school-teachers.

As the number of pupils for the year 1895 in the public schools was 724,252, so it happens that, there being in all 13,962 teachers, an average of 52 pupils to a teacher is found. The pay of teachers varies in the different schools, and for each class of school only the minimum amount is regulated by law. For a regular teacher, the length of school term being eight months, 600 crowns ($161) is the salary, 700 crowns ($188) after five years' service. Additional are a suitable lodging, firewood, summer and winter feed for a cow (or the same amount for other purpose), a piece of land on which potatoes and vegetables for one's own use may be planted.[1] In some cities the pay is sufficient to cover these necessities. For teachers of the above class of schools (i. e., elementary), in cities of over 15,000 inhabitants, the following table gives more specific details:

Cities.	Salaries (in crowns) of men teachers in elementary schools.				Salaries (in crowns) of women teachers in elementary schools.				Salaries (in crowns) of women teachers in infant schools.			
	For the first 5 years.	After 5 years' approved service.	After 10 years' approved service.	After 15 years' approved service.	For the first 5 years.	After 5 years' approved service.	After 10 years' approved service.	After 15 years' approved service.	For the first 5 years.	After 5 years' approved service.	After 10 years' approved service.	After 15 years' approved service.
Stockholm:												
I	1,400	1,600	1,800	.....	1,100	1,200	1,300	.....	.....	.....	.....	.....
II	1,800	2,000	2,200	.....	1,400	1,500	1,600	.....	.....	.....	.....	.....
III	2,000	2,200	2,400	.....	.....	.....	.....	.....	.....	.....	.....	.....
Göteborg	1,350	1,670	2,000	.....	1,200	1,275	1,350	.....	550	700	850	.....
Malmö	1,300	1,550	1,800	.....	1,100	1,250	1,400	.....	550	650	750	.....
Norrköping	1,300	1,600	1,800	2,000	1,100	1,200	1,300	.....	600	700	800	.....
Gäfle	1,500	1,750	2,000	.....	1,000	1,100	1,200	.....	500	600	700	.....
Helsingborg	1,400	1,600	1,800	.....	1,100	1,300	1,500	.....	600	700	800	.....
Upsala	1,300	1,550	1,800	.....	1,000	1,100	.....	.....	.....	.....	.....	.....
Jönköping	1,200	1,450	1,700	.....	1,000	1,100	1,200	.....	500	550	600	.....
Örebro	1,200	1,400	1,600	.....	900	1,050	1,200	.....	.....	.....	.....	.....
Lund	1,200	1,400	1,600	1,800	1,000	1,100	1,200	1,300	600	650	700	750
Karlskrona	1,225	1,325	1,425	1,525	1,225	.....	.....	.....	.....	.....	.....	.....

[The crown is valued at 26.8 cents, and hence the amounts can be reckoned at a little over one-fourth in dollars.]

[1] By decision of Parliament in 1898 the salaries of teachers after ten years' service must not be less than 800 crowns ($214.40), with lodging, board, and fuel. The same decree establishes a basis for more substantial pension. (Allgemeine Deutsche Lehrerzeitung, den 7ten August, 1898.)

The pension of ordinary teachers in the elementary and higher elementary schools is managed by the "Folkskolärarnes pensionsinrättning." Every school district pays toward this institution from 30 to 50 crowns ($8 to $13.40) annually. The State also gives a certain subsidy, which amounted to $95,762 in the last few years. The maximum pension is 750 crowns ($201); the minimum, 525 crowns ($141). Every teacher who has been in the service thirty years and is 55 years of age is entitled to a pension. Widows and orphans of teachers also receive a pension, which varies from 140 ($38) to 200 crowns ($54) for widows alone, and from 210 ($56) to 300 crowns ($80) where there are children. Marriage leads to loss of pension. Instruction is free in the elementary grades, the district and State authorities, as heretofore remarked, having arranged that matter satisfactorily, so that subsidies, State or local, support the schools. The expenditures for the elementary schools in 1895 were as follows:

	Crowns.
For teachers' salaries:	
In money, 9,102,072 crowns; Lodging, etc., 1,103,642 crowns	10,205,714
For school buildings and fixtures	2,655,734
For educational appliances	296,544
Incidentals	2,441,144
Total	15,599,136
United States equivalent	$4,170,570

From the State, for the salaries of teachers in elementary and infant schools, subsidies of 4,253,731 crowns ($1,140,099) were expended; for teachers of continuation schools, 61,050 crowns ($16,371). In the same year (1895) 2,483 schools received 185,236 crowns ($49,643) for slöjd instruction, and 13 people's high schools received 15,600 crowns ($4,280). Substitutes for 242 teachers received 42,245 crowns ($11,321) from the State. The number of students being 724,253, the average cost for each pupil was 21 crowns 54 öre, about ($5.50). Reckoned per inhabitant, the expenditure becomes 3 crowns 17 öre (or about 72 cents).

The teaching force receives its preparatory training, if men, in some one of the seven normal schools at Upsala, Linköping, Växjo, Lund, Göteborg, Karlstad, and Hermosänd; or if women, at one of the five normal schools in Stockholm, Skara, Kalmar, Falun, and Umeå, all of which are State institutions. Four classes of a year each, covering thirty-six weeks of instruction—autumn and spring terms—are found in each of these schools. Three years of theoretical and one of practical instruction is the rule, the latter in the subjoined practice school. The studies are grouped as follows:

Branches of study.	Hours per week.			
	First class.	Second class.	Third class.	Fourth class.
Religion	6	5	5	4
Swedish language	6	5	5	5
Arithmetic and geometry	4	4	4	2
History and geography	4	4	4	2
Natural sciences	3	3	3	2
Pedagogy and methods	.....	3	4	5
Penmanship	2	1	.....	.....
Drawing	3	2	2	2
Music and singing	3	3	3	3
Gymnastics	3	3	3	3
Horticulture and arboriculture	1	1	1	.....
Slöjd	4	3 (4)	3 (4)	.....
Practical school exercises	.....	2	2	6

Admission to these schools is accorded if proper certification from the elementary grades is presented, and if the ages range between 16 and 26 years.

Examinations for promotion to a higher class occur at close of each year until the fourth year is reached. The diploma accorded at close of that year entitles to a position as teacher in elementary grades. At the close of 1896 there were 697 students in the 7 normal schools for men and 502 in the 5 normal schools for women, and there were 265 graduates (146 men and 119 women). The students of the first and of the second class of the normal schools can, by passing a certain examination, obtain positions as teachers of infant schools. In 1896 there were 2 men and 82 women students who passed this examination for teachers in infant schools. There are also private and provincially supported normal schools which prepare teachers for infant schools. The former graduated 231 teachers for infant schools, the latter 436, during the year. For teachers of the infant schools in Lapland there is a normal school, with a two-years course, at Mattisudden, in Jockmock district, from which 6 men and 30 women graduated in 1896. For teachers of the Finnish infant schools (småskolor) there is a school, with a three-years course, at Haparanda, which school graduated 5 men and 22 women teachers in 1896. The State gave 75,000 crowns ($20,020) in stipends to students of the normal schools, plus 16,765 crowns ($4,493) to those of the Lapland and Finnish normal schools, in 1896. For 1896 (stipends not included) a total of 353,325 crowns ($94,691) was appropriated to prepare teachers for the elementary grades.

The people's high schools (Folkshögskolor) are an outgrowth of district regulations of 1862 and a parliamentary decree of 1866, which aimed to inculcate knowledge of the history of the fatherland and to so train the children of the peasant class that they would feel special interest in the problems of citizenship. In 1868 the first of these schools was opened; now there are 27 of these—11 for boys and 16 for girls. The term of study is from beginning of November to May for boys and from May to August for girls. No entrance examination is required, but the candidate must have passed through the elementary grades and be 18 years of age (boys) or 16 years of age (girls). There were 1,211 students in 1896; of these 760 were boys and 451 girls. The majority of these schools are established by private corporations or the provincial or district authorities aid in carrying them on. State subsidies are also given at stated periods. In 1896 the State subsidy was 65,850 crowns ($17,647); for indigent students 15,000 crowns ($4,020) were appropriated by Parliament.

The studies arranged for the boys are: General and Swedish history, geography, political economy, physics, chemistry, geology, hygiene and sanitation, Swedish language, arithmetic and geography, agricultural and commercial bookkeeping, linear drawing, surveying, penmanship, singing, and gymnastics. There is a more limited course for girls, viz: History and geography, hygiene and sanitation, domestic economy, Swedish language, arithmetic and bookkeeping, penmanship, singing and drawing, sewing, weaving, etc.

Schools for the defective classes include those for the deaf and dumb, in which instruction is given by three methods—articulation, writing, and drawing. The plan of study is that of elementary schools, and covers eight years. Expenses are defrayed by the districts. There are also private schools for this class of pupils. For deaf and dumb persons who are between 12 and 30 years of age there are three institutions, at Vadstena, Skara, and Bollnäs, but as the teaching of this class of unfortunates has been made obligatory, the schools for adults will eventually be closed.

The blind are taught at Tomteboda, near Stockholm, in a preparatory school and also in a regular institution at Växjo. Special aptitude for skilled handiwork is developed. At Kristinehamn there is a manual training school for persons who have become blind late in life. The cost is paid in part by State subsidies. The course of study varies from four to six years in the different schools.

The twenty schools for idiots endeavor to develop whatever may be lacking in

the children. Supported by provincial governments, associations, and private individuals, these schools give physical training, moral and religious instruction, and when possible they give an elementary education. Children incapable of development are placed in asylums. Teachers for these defectives are especially trained for such purpose either in normal schools or other similar institutions.

SECONDARY EDUCATION (DEN HÖGRE UNDERVISNINGEN).

[General educational institutions of secondary grade (Allmänna läroverk); private educational institutions for boys (enskilda läroverk för gossar); coeducational schools (samskolor); royal higher normal schools for women teachers in Stockholm (kungl. högre lärarinneseminarium i Stockholm); private higher schools for girls (enskilda högre skolor för kvinnlig ungdom); boarding establishments for teachers (pensionsrättningar för lärarinnor).]

Secondary schools are those which aim to train the youth to become good citizens, by continuing the education commenced in the elementary grades or by preparing them for universities or special schools. These general high schools are divided into higher (7-class divisions or grades) and lower (5 or 3 classes or grades). The 5 lower grades are one-year classes; the 2 higher grades (sixth and seventh) occupy two years each; the school course, therefore, is of nine years. From the fourth grade the students follow either the classical or Real course. The first has Latin; the latter does not include that language. From the sixth grade there is another bifurcation for those who study Greek, or do not study it. These secondary schools are not all arranged on a similar plan, however, as some few of them are (1) complete classical schools, (2) others are complete Real schools, and (3) others have similar courses in all classes, from the fourth down. There are also pedagogier, or 2-class schools, with a course of study similar to that of the lower classes of the "Reallinien and Latinlinien." The number of secondary schools is 75. Of these 22 have 5 classes, 17 have 3 classes; in 20 there are complete courses for both divisions—Latin or Real. Twelve are complete for the Latin course and 4 for the Real course. One school is purely classical in its course of study; that is, the studies of the practical course (Reallinie) are not found therein. Two schools are purely Reallinien, the classical studies not being found throughout. Two 5-class schools are pure Real schools; the remainder have both classical and Real courses (Real och Latin linien). There are 4 "pedagogier." Three of these have 2 classes and 1 has 1 class. In Stockholm there are 4 higher grade schools, and 3 with only 5 classes; in Göteborg there are 2 higher grade schools and 1 of 5 classes. The other cities have only 1 high-grade school. Generally speaking, these higher schools are found in the chief towns of districts or in the larger cities; the 5-class schools in other important places; the 3-class schools and the pedagogier in the small cities.

The length of term is thirty-six weeks, divided into two semestri, autumn and spring. The former commences at close of August and ends in the middle of December; that is, sixteen weeks. The spring term is twenty weeks—from the middle of January to the beginning of June—when vacations commence and the school year is ended. During the thirty-six weeks there is a week's vacation at Eastertide and four days at Michaelmas. The number of hours of study per week varies in the different classes between twenty-seven and thirty-two, wherein are included instruction in singing and gymnastics. English is optional in the seventh class. Drawing and instrumental music are optional in all classes. Obligatory instruction in singing is given for two hours each week in each class, obligatory gymnastics for three hours. The daily hours of instruction—four to six hours—vary in different places. In the most of the schools it is from 7 to 9 o'clock and from 11 to 2 o'clock, and on afternoons from 4 to 5 o'clock. The hours for gymnastics, music, and drawing are still otherwise arranged, generally in the afternoon. Before the morning study hours the pupils have prayers, singing of psalms, and Bible reading. This is not reckoned in their study hours.

The hours of instruction are thus arranged:

Studies.	Common to both divisions.			Latinlinie.										Reallinie.					
	Class I.	Class II.	Class III.	Class IV.	Class V.	Class VI A.		Class VII A.		Class VI B.		Class VII B.		Class IV.	Class V.	Class VI.		Class VII.	
						1.	2.	1.	2.	1.	2.	1.	2.			1.	2.	1.	2.
Religion	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Swedish	5	5	6	4	3	2	2	2	2	2	2	2	2	4	3	2	2	2	2
Latin				7	7	6	6	7	7	6	6	7	7						
Greek						6	6	6	6										
German	6	7	6	4	3	2	2	2	2	1	1	1	1	4	3	1	1	1	1
English										3	3	2	2	6	6	3	3	3	3
French					3	4	4	3	3	4	4	4	4		3	4	4	4	4
History	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Geography	2	2	3	1	1									1	1				
Psychology and logic								1	1			1	1					1	1
Mathematics	4	5	5	5	4	3	3	3	3	4	4	5	5	5	4	6	6	7	7
Natural sciences	2	2	2	3	3									3	3				
Natural history										1	1	1	1			1	1	1	1
Physics						1	1	2	2	1	1	2	2			2	2	3	3
Chemistry																2	2	2	2
Penmanship (Välskrifning)	2	2	1																
Drawing	1	1	1	1	1					2	2	1	1	2	2	3	3	2	2
Dictation (Skrifning på lärorummet)						3	3			3	3					3	3		
Total	27	30	30	30	30	32	32	31	31	32	32	31	31	30	30	32	32	31	31

Work is given out for the vacation period in languages, arithmetic, reading, and penmanship, and an examination at beginning of the term indicates the advancement made by the students. Admission is usually at commencement of the fall term. The pupils must be 9 years of age and give proof of ability to read fluently in Swedish, to write that language correctly, to have knowledge of Biblical history, of arithmetic, of the animals of the kingdom, geography of Scandinavia, with some information regarding the geography of the world. These requirements have been arranged lately so as to aid the student in his desire to enter the secondary grades. Examinations are also held from class to class, and if a pupil is forced to remain over two years in one class he is dismissed as unprepared or incapable of going on.

The examination at close of the school course, both oral and written, is attended by prominent officials. The written exercises for the classical *A* division consist of: Composition in Swedish, translation from Latin into Swedish, translations into German and French. For classical schools, *B* division, the written examinations include Swedish composition, translations from Latin into Swedish, translations into French or German, mathematics, four exercises in plane geometry and analytical geometry, exercises in mechanics and physics. Those who in the teacher's opinion have indicated sufficient knowledge in the written examination (the above exercises being sent to the minister of ecclesiastical affairs and public instruction) are given opportunity to pass the oral examination. This includes the studies in the highest grade, except the Swedish language, although a censor may absolve the students from examination in one or more of the branches pursued. If these examinations are passed, the student obtains a diploma which indicates fitness for entrance to the university. Of the 705 certificated students in 1896 there were 51 women. Of the students, 502 were from the public secondary schools, 75 from private schools, and 68 who had home instruction. As has been stated, the minimum age of admission to the secondary grades is 9 years. The course being of nine years, the age of graduation would be about 18 years. But in 1894 the average age in classes was 1.40 years above the normal; in 1895 the graduation examination showed that the pupils averaged 19.21 years of age.

The number of teachers and directors of these schools was in 1896 as follows:

Teaching force.	Secondary schools.	Five class schools.	Three-class schools.	Total.
Directors (rektoren)	36	23	17	75
Lecturers (lektoren)	207			207
Assistant teachers	377	115	34	526
Teachers of music	36	22	17	75
Teachers of drawing	36	22	17	75
Teachers of gymnastics	35	21	17	73
Total	727	202	102	1,031

The pay of a teacher depends upon the number of years of service; an increase of pay comes with the number of years, providing that competency to fill the position has been shown. The salary of an extraordinary (extra ordinarie lektor) is 3,000 crowns ($536); for teachers recognized as competent to fill regular positions in this grade of school, 1,800 crowns ($482); other teachers, 1,500 crowns ($402). The director receives also free lodging or money to pay rent from the city authorities, and sometimes other teachers receive similar extra compensation. All approved teachers of Stockholm and Göteborg have free lodging, and extraordinary teachers of these cities receive money for rental. Pensions are given to superannuated teachers, and teachers pay so much annually toward a fund for their widows and orphans.

The salaries of different grades of teachers is tabulated as follows:

Teaching force.	Grade of salaries.				
	First.	Second.	Third.	Fourth.	Fifth.
Director of—	*Crowns.*	*Crowns.*	*Crowns.*	*Crowns.*	*Crowns.*
Complete secondary school	4,750	*a* 5,250			
5-class secondary school *e*	3,750	*a* 4,250			
3-class secondary school	3,250	*b* 3,750			
2-class pedagogier	2,750	*b* 3,250	*c* 3,750		
Teachers (lektorer)	3,000	*d* 3,500	*d* 4,000	*d* 4,500	*d* 4,750
Assistant teachers	2,000	*d* 2,500	*d* 3,000	*d* 3,500	*d* 3,750
Teachers in 1-class pedagogier	1,750				
Music teachers in—					
Complete secondary schools	875	*d* 1,100	*d* 1,325		
5-class secondary schools	475				
3-class secondary schools	300				
2-class pedagogier	200				
Drawing teacher in—					
Complete secondary schools *f*	1,100	*d* 1,325	*d* 1,550		
5-class secondary schools	600				
3-class secondary schools	300				
Gymnastic teacher in—					
Complete secondary schools	1,100	*d* 1,325	*d* 1,550		
5-class secondary schools	600				
3-class secondary schools and in pedagogier	300				

a After 10 years' service.
b After 15 years as ordinary teachers.
c After 20 years as ordinary teachers.
d After 5 years of the salary of previous grade.
e Directors of 5-class secondary schools in Stockholm receive 4,250 crowns when they first take charge of the schools, without expectation of increased emolument.
f The drawing teachers, in the higher as well as lower grade schools, are paid for extra hours.

Students (a) in the fall term of 1896.

Number of secondary schools.	1	2	3	4		5		6:1	
	Students in common course.			Real course.	Classical course.	Real course.	Classical course.	Real course.	Classical course.
Complete schools (36)	1,315	1,707	1,762	1,060	746	787	704	621	734
5-class schools (22)	601	698	607	377	107	235	91		
3-class schools (17)	248	226	209	89	30	45	13		
Pedagogier (4)	54	66	46	22	1	10	4		
Sum total	2,218	2,697	2,624	1,548	884	1,077	812	621	734

a Of 2,281 students in classes 6 and 7, there were 854 of Division A (that is, they had instruction in the Greek language) and 1,427 of Division B (that is, instruction in Latin but not in the Greek language).

Students in the fall term of 1896—Continued.

Number of secondary schools.	6:2		7:1		7:2		Total.			Total number.
	Real course	Classical course.	Real course	Classical course.	Real course	Classical course.	Common course	Real course	Classical course.	
Complete schools (36)	398	570	347	523	255	454	4,784	3,468	3,731	11,983
5-class schools (22)	.....	.....	.....	.....	.....	.....	1,905	612	198	2,716
3-class schools (17)	.....	.....	.....	.....	.....	.....	683	134	43	860
Pedagogier (4)	.....	.....	.....	.....	.....	.....	166	32	5	203
Sum total	398	570	347	523	255	454	7,539	4,246	3,977	15,762

Upon entrance into an institution it is necessary to pay an admission fee of 10 crowns, which is divided as follows: To light and wood fund, 4.50 crowns; to library and apparatus, 3 crowns: to prize and poor fund, 2.50 crowns. For each semester each pupil is required to pay 4.50 crowns toward the library and apparatus fund, 5.3 crowns to the building fund, and 3 crowns to the light and wood fund, which amounts vary somewhat, but come to about 5 or 6 crowns. There are always students who can not pay these different fees, so that for those who are able it amounts to about 30 crowns ($8.04). At every high-grade and every 5-class school, also at every 3-class school when means permit, a physician is stationed, who aids the rector in watching over the hygienic conditions of the school. All the higher schools have a library, many of them in the diocesan centers are of great value. The chapter and school library at Linköping has 80,000 volumes, 1,600 manuscripts, 1,000 parchment letters, 1,000 foreign and 12,000 Swedish academy dissertations. There are also collections of natural history, zoological collections, instruments and apparatus for instruction in physics. Each school building must be so constructed that all rooms shall be of sufficient capacity for seating purposes and recitation, also well lighted and heated, so that the health and comfort of the pupils may be taken into consideration. Each city must give sufficient space for the school buildings, grounds, gymnastic halls, and playgrounds. In some cases the city authorities have to erect and keep up the schoolhouses, in other cases the diocesan authorities have the expenditures under their control; again State subsidies are applied for. The cost of some late school buildings, with their furnishings, was as follows.

City.	Cost of buildings. *a*	Year.	Amount.
Stockholm	The Higher Classical Institute at Normalm	1880	$225,656
	The Higher Institute at Södermalm	1891	242,888
	The Higher Real School	1890	209,844
Göteborg	The Higher Real School	1886	157,256
Sundsvall	.....	1886	83,884
Vaxjö	.....	1889	84,956
Lund	.....	1896	53,600

a Cost of grounds, 300,000 crowns ($80,400).

Each diocese has for the benefit of the schools a building fund, a prize and a poor fund, which funds are subdivided among these institutions in proportion to the number of pupils.

The State expenditures for the institutions of a secondary grade were 3,483,574 crowns ($933,594) for 1895. The average of pupils for the two semesters of 1895 was 14,971. When this amount is divided it gives State aid to each pupil of 229 crowns ($71).

The private institutions for boys have the same right to give maturity certifi-

cates as the public schools. These are the Beskowska School, in Stockholm, the Fellstedtska School, in Upsala, and the Lund Private Elementary School.[1] The Fellstedtska School trains students to become preachers in the State church; the Beskowska School takes both boys and girls in its lower division, but in the gymnasial division, the four higher classes, there are only boys.

The "Samskolor," namely, schools where boys and girls work together in all classes, are of a private character; the "Palmgrenska Samskolan," in Stockholm, is the oldest; it has the same high grade of maturity examination as in the public schools of this grade. The main effort in these coeducational schools is to have an eclectic course, to employ the best methods of instruction in foreign tongues and other studies, to train in slöjd, etc.

There are two coeducational institutes in Stockholm in addition to the Palmgren School, one in Upsala, and others in Falkenberg, Hedemoda, Lindesberg, Motala, Ronneby, Sollefteå, and at Djursholm. Generally speaking, the coeducational school is the only school of the town where a higher grade of instruction than that of the elementary school can be obtained. Several of these schools receive State aid, the largest amount, 8,000 crowns ($2,144), goes to the Palmgren School.

The Royal Higher Normal School in Stockholm and the lower normal school connected with it, serves to train women for the teaching profession, and to give them opportunities for practice. Free instruction is given to students generally; the State subsidy is about 49,500 crowns ($13,266). The length of term is thirty-four weeks, from September to June, with vacation periods at Christmas, Easter, and in summer. Examinations are held at close of the school year in the seminary, and at the close of the three years' course—a fourth year is optional—a graduation examination leads to the requisite diploma for admission to the teaching force. The course of study for the seminary includes religion, Swedish, French, German, and English languages, geography, history, mathematics, natural sciences and natural history, pedagogics and methods, physiology, and the laws of health, singing, drawing, and gymnastics. In the normal school the course is as follows:

	Preparatory school grades.			Normal school grades.							
	1.	2.	3.	1.	2.	3.	4.	5.	6.	7.	8.
Religion	....	3	3	2	2	2	2	2	2	2	2
Swedish language	12	7	6½	4	4	4	3	4	3	4	4
French (*a*)	....	....	....	6	6	6	5	3½	3½	4	4
German	....	....	....	....	....	....	3	2	2	2	2
English (*a*)	....	....	....	....	....	....	....	....	2	2	2
French and English conversation	....	....	....	....	....	....	....	1	1	1	1
Geography	....	....	2	2	2	2	2	2	1½	1	....
Swedish history	....	....	1½	2	2	2	2	1½	1	1	....
Universal history	....	....	....	....	....	....	2	2	2	2	2
Arithmetic	2	2	3	2	2	2	2	2	2	2½	3
Geometry (*b*)	....	....	....	....	....	....	....	1	1	1	1
Natural sciences	....	....	....	....	1	2	1	1	2	3	2
Laws of health	....	....	....	....	....	....	....	....	....	....	2
Fine writing	....	3	2	2	2	1	½	½	....	....	....
Drawing (*b*)	....	....	1	2	2	2	1½	1½	1½	2	1½
Singing (*b*)	....	....	1	1	1	1	1	1	1	1	1
Sewing (*c*)	4	3	3	3	3	3	2	2	1½	....	....
Fine work	....	....	....	....	....	....	1	1	1	1½	1½
Gymnastics	....	....	....	1½	1½	3	3	3	3	3	3

a Optional.
b Optional in seventh and eighth classes.
c Optional in fourth, fifth, and sixth classes.

[1] The "Elementar skola" really classes with secondary schools; hence the term elementary seems almost a misnomer.—[ED.]

Pupils of 5 to 6 years of age enter the preparatory class; at the age of 17 or 18 years they are ready for graduation. The expenditures per pupil range as follows:

Annual expenditures per grade.

	Fall term.	Spring term.	For the year.
	Crowns.	*Crowns.*	*Crowns.*
Grades 1 and 2 of preparatory school	35	40	75
Grade 3 of preparatory school	45	55	100
Grade 1 of the school proper	50	60	110
Grades 2 and 3 of the school proper	60	75	135
Grades 4, 5, and 6 of the school proper	70	90	160
Grades 7 and 8	80	105	185

Instruction is given in domestic economy in these schools since 1893. The State gives 5,000 crowns, a private individual 1,500 crowns, for that purpose. Both theoretical and practical courses are given. Private schools for girls numbered 120 in 1897; of these, 91 received State subsidies under certain conditions. According to the regulations they are expected to submit to inspection similar to that of State schools, to furnish an annual report, to have at least 30 pupils in the last three years of a five-year course, to receive gifts and donations from district or private parties in amount equal to the State gifts, to have medical inspection, and to show that all hygienic rules have been adhered to.

The general rule for these schools is a five-year course, but there are those which have eight years. The course of study is similar to that of the State normal school for girls (mentioned above); but hand work includes slöjd-training sometimes, also the history of art and literature in the highest classes. There are continuation classes to train pupils for entrance into the normal school, or even to become teachers of language or some other branch. Male teachers instruct for only a few hours. The women teachers are regularly employed, at salaries varying from 800 to 1,400 crowns ($214 to $375). The directress receives at the largest schools $536.

The Swedish Association for the Pensioning of Women Teachers accords life pensions to teachers after their fifty-fourth year. Each recipient is obliged to exhibit a certificate of graduation from a normal school or indicate that she has had two years' experience as teacher. Each teacher pays for a twenty-five-year period, or to the fifty-fourth year of age, at least 15 crowns ($4) annually toward the fund. This is in accordance with a royal statute of May 29, 1885.

There is also a "pension" or boarding institution for women teachers of the high-grade schools who have reached their fifty-fifth year, or, if unmarried and over 25 years of age, they may desire to live in a teachers' home and specified payments are made toward that end.

UNIVERSITIES AND HIGH SCHOOLS (UNIVERSITET OCH HÖGSKOLOR).

Royal University at Upsala and Lund (Kungl. universiteten i Uppsala och Lund); Royal Caroline Medico-Surgical Institute in Stockholm (Karolinska mediko-kirurgiska institutet i Stockholm); The high schools (universities) at Stockholm and Gothenburg (Stockholms och Göteborgs högskolor); Royal Central Gymnastic Institute (Kungl. Gymnastiska Central institutet.)

The University in Upsala was opened in 1477, the University of Lund in 1668, and the Caroline Medico-Surgical Institute in 1815. The chancellor, appointed by the King, holds the highest office in connection with these universities; the archbishop (Upsala) or bishop (Lund) is the pro-chancellor. The rector, academic consistory, and board of finance are under supervision of the pro-chancellor. The medical institute is under the general supervision of the rector and a body of professors. Each university has its four faculties, theological, legal, medical, and

philosophical, the last being divided into the philologic, the mathematical, and natural science divisions. The students are divided into corps in accordance with the provinces from which they come. There are 13 of these corps[1] at Upsala and 12 at Lund University, which have certain members of the professors or student force in charge.

The university library at Upsala has 280,000 volumes and 12,000 manuscripts; at Lund University there are 150,000 volumes and 1,500 manuscripts; the Caroline Medico-Surgical Institute has 30,000 volumes. All have scientific collections.

	Students.	Professors.	Expenditures.	
			Crowns.	United States equivalent.
Upsala University	1,460	131	842,752	$225,855
Lund University	570	94	535,372	143,476
Caroline Medical Surgical Institute	305	41	195,058	54,275

At Upsala there were 25 women students (philosophical faculty, 23; medical and legal, 1 each); in Lund, 10 (medical faculty, 4; philosophical faculty, 6); at the Caroline Institute, 14. They are not permitted to study in the theological faculty. In the summer of 1893 vacation courses were held at Upsala, and 329 persons, mostly teachers, attended. Similar courses were introduced in Lund in 1894. The high school, or university, at Stockholm commenced under the auspices of an association having as its object the development of science and of scientific instruction. There are four faculties—historico-philosophical, philological, mathematical, and natural scientific—and the law faculty. The board of directors consists of 7 members—1 from the Swedish Academy, 2 from the Royal Scientific Academy, and 2 from the municipal authorities; the sixth is the rector; the seventh is chosen by the other members of the board. The appointment of professors is made by the board. Each student pays 25 crowns ($6.70) at the beginning of each semester and 25 more at graduation, unless it may be proven that the financial condition does not permit of such expenditure. Hearers pay 10 crowns ($2.60) for each course taken. There are no examinations at Stockholm University. The students numbered 40 in 1897; hearers, 123. The funds of the university at close of 1896 were 3,890,248 crowns ($1,042,586). Of this amount, 3,747,576 crowns ($1,004,350) was under control of the directive board of the university and the remainder under the board of finance of Stockholm. In 1894 it was decided to establish a division for the science of law and state administration, but this has not been accomplished.

The University at Göteborg was founded through private donations, but in 1889 its statutes were ratified by King Oscar, and in 1893 it was given the right to hold public examinations. In 1897 there were 7 professors at Göteborg University, 6 docents, and 2 "extraordinary" teachers for languages. Students in 1896 numbered 52 (2 women); hearers, 36. At the public lectures there averaged 250 to 300 hearers. Since the first examination, in 1894, 8 students have passed the examination prescribed for candidates in philosophy (filosofie-kandidat examen), and 2 for that of licentiate in philosophy (filosofie-licentiat examen). The funds[2] of the university amounted to 2,035,000 crowns ($545,380) in 1897.

The Royal Central Gymnastic Institute in Stockholm trains young men and women to become gymnastic teachers or to act as masseurs. Among the students

[1] Called Studentenkåren. These indicate, as in Finland, the "nation" or section of the country from which the students come.

[2] Through donations, etc., the funds (fonder) of the university amount to the above; those form the capital for purposes indicated by the university authority.

are young officers who require gymnastic exercises. The board of directors consists of a chairman, a military man, a teacher, and a physician, which board has supervision of gymnastic instruction in all institutions. The number of students in 1896 was 87 (59 boys and 28 girls), and 665 patients (579 women) were treated for various diseases. The annual expenditure was 46,000 crowns ($12,308). This institution was founded by Per Henrik Ling in 1813 and carried on by him until 1839. The followers of Ling have since carried out his views regarding the training of the human organism, so that the youth of the land bids fair to have a good bodily (as well as mental) education.

MILITARY SCHOOLS (MILITÄRLÄROVERK).

[Educational institutions for the army (Armeens undervisningsantalter); educational institutions for the navy (Flottans undervisningsanstalter).]

The lowest grade of schools are to train recruits (rekrytskolor) for a soldier's career, for corporals and subofficers. Volunteer schools at Karlsborg, Norrköping, Hernösand, Ronneby, and Notviken are for persons who hold the diploma of a secondary school and have had a previous four months' training as recruits. A cavalry school in Stockholm trains for that branch of the service. Instruction in hospital work, in manufacture of gunshot, and horseshoeing is also given. For officers and aspirants for that position there is a military school at Karlberg, with a seventeen months' course. A high-grade artillery and engineer school is at Stockholm for those desiring to enter that branch of the service. The course includes military science, mathematics, mechanics, physics, chemistry, descriptive geometry, geodesy, and architecture. A high-grade military school at Stockholm has a two years' course which covers, among the different subjects, history of wars, the art of war, service on the general's staff, military administration, tactics, the art of making fortifications, military geography, geodesy, foreign languages, etc. Additional schools for this branch of military affairs are that for instruction in shooting at Rosersberg, for officers of infantry and cavalry; the artillery school at Marma, for field practice, and at Vaxholm, for fortification shooting; the riding school at Stockholm, where the officers of the cavalry must take a course in order to obtain a position as officer of the second degree.

For the navy there is the Royal Naval School, which gives the theoretical and practical instruction needed for a position as officer in the royal navy. Schooling is given both on sea and land, the teaching force consisting of officers in the military service and civilians for other branches of the service. The course is one of six years. There is an apprentice school at Karlskrona, and navigation schools at Stockholm, Göteborg, Malmö, Gäfle, Kalmar, Karlshamn (complete), Hernösand, Visby, Västervik, and Strömstad. The navigation school per se instructs the sailor in the requirements of his profession. A complete navigation school has two divisions—that for ship's captain, helmsman, and a division for machinists, mechanicians, etc. The courses are held during the months of September-October and April-May.

TECHNICAL INSTRUCTION (DEN TEKNISKA UNDERVISNINGEN).

[Lower technical industrial schools (De lägre tekniska yrkesskolorna); technical school at Eskilstuna (Tekniska skolan i Eskilstuna); school of Slöjd Association in Göteborg (Slöjdföreningens i Göteborg skola); technical elementary schools (De tekniska elementar skolorna); Chalmers technical school in Göteborg (Chalmers tekniska läroanstalt i Göteborg); technical school in Stockholm (Tekniska skolan i Stockholm); technical high schools (Tekniska högskolan).]

Quite a number of technical schools of higher and lower grades are found in different parts of Sweden. The technical high schools train young men who purpose entering the technical industrial field. The one in Stockholm has five divisions, the highest being an industrial art school, with a seminary for training teachers

in drawing, fine penmanship, and modeling. The Chalmers Technical School, in Göteborg, and the four technical institutions in Malmö, Norrköping, Örebro, and Borås are especially adapted to the instruction of students who devote themselves to some phase of engineering. Representative of the industrial phase of education (metal work, blacksmithing, etc.) are the schools at Eskilstuna, and the 32 technical handwork and industrial schools. These receive State subsidies and are under State inspection. Schools of a private nature, including the Slöjd Association in Göteborg, train in similar industries to the above. All the technical schools have developed during the last ten years, the number of students having nearly doubled. Expenditures were consequently greater during that period.

Instruction has become more rational, and important branches have been added to the course in the higher-grade schools, while in the lower grades there is greater tendency toward industrial training rather than toward a continuance of elementary branches.

The 32 lower technical industrial schools are evening and Sunday schools for the benefit of workmen who have no other hours apart from their labor. They receive 45,000 crowns ($10,060) annually from the State, provided a similar amount is furnished by the municipality where situated, and State inspection is allowed. Men and women receive instruction in the elementary branches in free-hand and linear drawing, geometrical combinations, Swedish language, fine penmanship, etc. Modeling, wood carving, plastic art, bookkeeping, fine sewing, and decorative art come into the woman's course; painting, mechanics, the use of machinery, and construction of buildings are branches in the course for men. If there are technical elementary schools in the same town, then those and the evening and Sunday schools complement each other.

To become a student in these schools the twelfth or possibly fourteenth year of age must have been passed and the student must have been taught the minimum course in the elementary schools. In the 32 schools in 1895–96 there were 5,392 pupils—i. e., 4,180 males and 1,212 women.

The largest of these schools is at Malmö, where 23 persons taught 900 students in 1896–97 in geometrical free-hand, perspective, and figure drawing, in algebra, geometry, mechanics, Swedish, fine writing, and bookkeeping. Entrance fees were 2 crowns (53 cents) in the autumn term and 2.50 crowns (67 cents) for the spring course. The school year commences on September 1 and ends on May 15, with seventeen days' vacation at Christmas.

The technical school at Eskilstuna has a special division for iron and metal industry, in addition to the Sunday and evening schools, which were established in 1858. Instruction is given in a regular course similar to the above course by lecture, practical application, and exhibits of the raw stuff and the manufactured article. The fourteenth year must be passed before one can enter this school. In 1895–96 there were 150 students and in the special school 33 pupils.

The school of the Slöjd Association in Göteborg is private in character. Its fees vary from 1.50 crowns (40 cents) to 2.50 (67 cents). Instruction is given from 7 to 9 and 8.30 to 10.30 a. m. and from 1 to 3 p. m. The number of pupils in 1896–97 was 941 (of whom 341 were women). This school is not inspected by the State, nor does it receive subsidies therefrom.

Between the technical industrial schools and the higher institutions there stand four technical schools—at Malmö, Norrköping, Örebro, and Borås; the first established in the year 1852, the others in the following year. The studies are arithmetic, planimetry, stereometry, logarithms, trigonometry, elements of analytical geometry, linear drawing, practical geometry, field surveying, mechanics, science of machinery, mechanical and chemical technology, experimental physics, chemistry and laboratory work, mineralogy and geognosy, the Swedish tongue (and either German, French, or English), bookkeeping, commercial correspondence, exchange, the first elements of architecture, sketching (krokiritning), free-hand

drawing, modeling, gymnastics, and practice in the use of weapons (vapenföring). A three-years course is required, of thirty-six weeks each. For one and one-half years the course is common to all; then comes a division, and the studies lead to the special technical or industrial trade or profession which the student intends to follow as a career.

To enter these schools the fourteenth year must have been passed, and an entrance examination is required. The pupil pays 10 crowns ($2.68) entrance fee and 20 crowns annually; or sometimes a sum specified by the board of directors. If there is poverty, these fees may be dispensed with. Each of these institutions receive State subsidies of 22,600 crowns ($6,056). In 1896–97 the Malmö technical had 85 pupils; Norrköping, 71; Borås, 68; at Örebro, 85.

The Chalmers Technical Institute, at Göteborg, which is a grade between the technical elementary and the technical high school, dates from 1811. Various changes in the government of the school have taken place, until the present statutes of 1877 were sanctioned by the King. Its present name, Chalmers tekniska läroanstatt i Göteborg, dates from 1883. The school has higher scientific-technical and lower-practical divisions; knowledge of, and examination in, certain branches are required for entrance into these divisions. In the higher division there is examination in mathematical branches, in history and geography, in Swedish grammar, and translations from German or English. For ship construction knowledge of English is required.

Number of students.

Years.	Students.	Years.	Students.
1829–30	29	1869–70	123
1839–40	62	1879–80	144
1849–50	68	1889–90	168
1859–60	107	1896–97	245

The income for 1896 was reckoned as follows:

	Crowns.	Dollars.
State subsidies	57,232	15,338
School fees	4,896	1,312
Revenues from donation funds	3,404	912
Gifts and from rents	1,148	307
Total	65,682	17,869

The technical school in Stockholm has the following subdivisions: (*a*) The technical evening and Sunday school; (*b*) the technical school for female pupils; (*c*) the higher industrial art school, with a division for instruction of drawing and writing teachers; (*d*) the school of architecture; (*e*) the school for machinery. Each subdivision has its special hours and course of study and its directive board, although there is a general governing board for the whole school.

In the (*a*) division the youth who are engaged in some industry are taught branches which will be helpful to them in their work, such as all kinds of drawing, ornamental work, mathematics, mechanics and mechanical drawing, technology, drawing, construction of buildings, etc. The men have opportunities, under certain conditions, to attend the courses in wood carving, metal work, and engraving in the higher art industrial school.

The school year (October 1 to April 30) is divided into school days from 8.30 to 10.30 a. m., 5 to 7 and 7 to 9 p. m. Entrance requirements are that the student be 14 years of age, have good habits, and a certificate indicating knowledge of arithmetic, composition, good penmanship, etc. If there is no certificate, an examina-

tion is required. The school fees for students who are already in the trade are 4 crowns ($1.07); for other students, 50 crowns ($13.40). The (*b*) division furnishes technical instruction to women who are already engaged in industrial work. The school year is from October 1 to April 30; the entrance requirements and fees are similar to those of division (*a*); the hours are from 9 to 11 a. m., 12 to 3, and 5 to 7 p. m. The course includes geometrical and linear drawing, the elements of geometrical drawings, perspective free-hand, figure, and landscape drawing, and special instruction in drawing for industrial art work, painting, modeling of ornaments and figures, arithmetic, geometry, natural sciences, knowledge of wares, composition, bookkeeping, and fine penmanship. Under certain conditions the pupils may attend the course of instruction in wood carving, cutting in metal, and the art of engraving in the higher school for art industry. The (*c*) division—Högre Konst industriella Skolan—instructs both men and women in a knowledge of the higher types of industrial art. The instruction aims first to train in designing, decorative art, modeling, metal work, and engraving, so that skill in such form of work will be developed. Another division of the school trains individuals to be teachers of drawing, modeling, fine penmanship, etc. The school year is from September 1 to May 31; school hours from 8.30 to 11 a. m., 12 to 3, and 5 to 7 p. m. To enter the first section of this school a certificate of good conduct and of having passed the sixteenth year is required; also some exhibit of free-hand and linear drawing, painting, and modeling. To enter the second section there are similar requirements, except that the eighteenth year must have been passed, and the certificate of having passed through the fifth class of the higher school is required; also knowledge of perspective and shading. The subjects of instruction are industrial art drawing, composition and combinations of color and fabrics, modeling, sculpture for industrial art, and practice in making of plaster casts, painting and decoration, wood carving, metal work and engraving, style in art and the elements of art history, drawing for use in painting on porcelain and glass, leather work, etc. Free-hand drawing, perspective, and instruction in methods and practice occupy the student's attention a part of the time. With care and industry the course may be completed in three years, although it is optional with the student to attend for a more or less extended period.

The annual school fees were, for students from technical industrial trades, 20 crowns ($5.36); for candidates for teachers of drawing and penmanship, 20 crowns ($5.36); other students, 60 crowns ($16.08); students taking optional branches, 15 crowns ($4.02) for each branch.

The *d* division is that for builders, who can pass the winter months (November 1–April 30) obtaining more skill and training in their special trade. Admission requirements cover the sixteenth year, good conduct, knowledge of arithmetic, algebra, linear and free-hand drawing, and a half year's practice in construction. The course of study includes construction according to a geometrical basis, linear drawing, composition of simple ornaments, arithmetic, algebra, planimetry and stereometry, land surveying, mechanics, natural science, architecture and practice in drawing of planes, description of processes of building, bookkeeping, and composition. Three years complete the course, and pupils may enter at commencement of any year. Hours of study, 8.30 to 10.30 a. m., 11 to 2 and 5 to 7 p. m. School fees, 10 crowns ($2.68).

The *e* division consists of the machine school (maskinyrkesskolan), in which from November 1 to April 30 instruction is given in similar studies, except that the tendency is toward the use of machines, mechanical drawing, mechanical technology, etc., rather than toward architectural training. A two or three years' course is given, in accordance with the needs of the pupils. Special teachers and courses are given in this Stockholm technical school in still life (stillära), ornament composition, fine needlework, painting, photography, drawing from the

form and anatomical study, gymnastics, electro-technical course in mounting (montörkurs), etc.

An annual fee for attendance at any one of these courses is 2 crowns for those in the trade and 5 crowns for others. The library of the school has 10,000 volumes, mostly of a technical character. The museum contains several thousand models. The school has its own building, paid for by the State and city. The annual income is 123,000 crowns ($32,964). Pupils in 1896–97 numbered 1,794.

The technical high school in Stockholm, the highest institution of the kind in Sweden, dates from 1798, and has undergone many transformations since that period. The statutes of 1877 are the basis of the present school work. The object is to instruct pupils who desire to follow a technical industrial career by giving scientific instruction leading to such an end.

Years.	Candidates.			Pupils admitted.			Total number of pupils.			Examined.		
	Highest number.	Lowest number.	Average number.	Highest number.	Lowest number.	Average number.	Highest number.	Lowest number.	Average number.	Highest number.	Lowest number.	Average number.
1848–1858	75	12	34	50	10	27	115	30	73	33	8	16
1858–1869	66	27	44	50	33	32	137	93	115	36	13	24
1869–1878	156	36	95	104	27	63	282	113	193	66	20	39
1878–1896	133	50	102	106	41	80	336	153	240	107	98	51

The course of study includes pure mathematics, geodesy and topography, geometry, elementary mechanics, higher theoretical mechanics, description of science of machinery, construction of simple machines, theoretical teaching about machinery and machine construction; the chemistry, mechanics, and science of mining; ship construction; mechanical technology, physics, theoretical and practical electrotechnic, general and analytical chemistry, metallurgy and metallurgical investigations, mineralogy and geology, architecture and statics of building, house construction, history of architecture, waterworks construction, road building, linear and free-hand drawing, ornamental work, modeling, work in the shop with practical exercises; as optional branches national economy, technics of hygiene, and electrolytical chemistry. There are special subdivisions of this school—one for the science of machinery and mechanical technology, with a three or four years' course; one for chemical technology, with three-years' course; one for the science of mining, with three subsections—one for the mechanical science of mining, with four-years' course; for metallurgy, quarrying, and mining-furnace work, with three or four years' course; one for architecture, with four-years' course, so arranged that the student can at close of the third year attend the Academy of Liberal Arts, and one for public works (water and roads), with four-years' course. There are two semesters, from September 10 to December 22 and from January 7 to June 10. In some of the schools there were practical exercises carried on to a later date. The teaching force consists of full-fledged professors with thorough scientific attainments, also teachers and assistants who aid in the instruction. The students numbered 319 in 1896, divided into ordinary, extraordinary, and special students. Each ordinary student pays from 20 crowns ($5.76) to 10 crowns ($2.68). For the special and the extraordinary students the fees vary in accordance with the class and number of studies pursued. The annual State subsidy for this school amounts to 146,700 crowns ($39,315). For 1897 an extra amount of 5,574, for strengthening the instruction, was given by the State. The State subsidy to indigent students amounted to $804 for the year 1896. There are also ten scholarship funds, which amounted in 1896 to $37,610. The library possessed 23,600 volumes at close of the year 1896. The technical high-school building dates from 1860–1863, but new buildings for certain purposes are in process of erection.

SPECIAL SCHOOLS (ANDRA TILLÄMPNINGSSKOLOR).

[Royal Academy of Fine Arts (Kungl. Akademien för de fria konsterna); Royal Conservatory of Music (Kungl. Musikaliska akademien och Musikkonservatorium); agricultural schools (landtbrukets undervisningsanstalter); forestry schools (skogsläroverken.]

The Academy was founded in the year 1735, and at that date was called the Academy for Painting and Sculpture. United with it is a higher institution for painting and sculpture for both sexes and a school of architecture for men. The Academy has a director and seven professors—three in drawing of figures and painting, one in figure drawing and modeling, one in landscape drawing and painting, one in architecture, and one in plastic anatomy, and three in drawing from the antique, in perspective and shading, and in art history.

The Royal Conservatory, united with the music academy, established in 1771, is an institution which trains organists, choir singers, teachers of music for schools or directors of music in the military corps. Instruction is also given in such branches as would naturally be found in an institution for the scientific study of music and dramatic presentation. There are seven branches of study: Organ, singing, wind and string instruments, harp, piano, and composition.

The agricultural high schools at Ultuna and Alnarp teach the higher theoretical and practical knowledge required for a rational development from the agricultural side. There is also study in phases of agriculture in other lands, with its possible application in Sweden. Two courses of two years each, a higher and a lower, are required for such purpose. The 23 agricultural schools aim to give skill to students in agricultural pursuits and to give thorough practical training for such avocation. In order to give practical application of the branches studied, it is required of the students that they work in the fields, etc. A two-years' course of study includes instruction in the mother tongue, fine writing, arithmetic, linear drawing, rural engineering, forestry, etc. (liniers och ytors samt solida figurers beräkning, uppmätning, afvägning och kartläggning af ägofigurer).

Schools for farmers (landtmannaskolor) are more especially for the theoretical training of would-be farmers.

The higher agricultural schools are maintained by the State. The agricultural schools only receive certain subsidies. Dairying is an accompaniment to instruction in agriculture. Still there are regular dairy schools maintained by the State, namely, an institute at Alnarp, two dairy schools and sixteen dairy stations. The State has also a certain number of instructors and teachers in cattle raising, dairying, woolgrowing, and sheep raising.

Forestry schools.—The Academy of Forestry in Stockholm and the eight forestry schools give instruction tending toward the position of foresters and their aids.

The course leads to a knowledge of management of forests, forestry cultivation and classification, field and wood measurements, instruction concerning the earth and climate, and science of planting.

The course in the forestry schools is of one year, in the institute two years, and students are permitted in the institute only after passing through the forestry school of Omberg.

Other schools coming under the head of special schools are the pharmaceutical institute (to train persons desiring to be pharmacists), the veterinary school, schools to train gardeners, expert fishermen, commercial schools, and those for domestic economy.

SLÖJD INSTRUCTION (SLÖJD UNDERVISNINGEN).

[Slöjd for Boys (Mänlig Slöjd): wood, paper, and metal work (Träslöjd, Papp och metallslöjd); Slöjd for Girls (Kvinnlig Slöjd; Normal School for Teachers of Slöjd at Nääs (Nääs Slöjd lärare Seminarium).]

In the early seventies the first movement in regard to the introduction of slöjd for boys took place first by private initiative; then communal and provincial authorities and agricultural societies carried on the matter. The State only aided in the general maintenance at first. The Royal Agricultural Academy, having charge over slöjd, obtained aid from the agricultural societies.

In 1877, when nearly 80 schools had instruction in slöjd, the Diet gave a subsidy to needy students in each school district, at the rate of 75 crowns ($20) annually, when four hours' or more slöjd instruction was given in the schools. In 1894 changes were made, so that if there were at least 10 students in each school receiving such instruction, with no neglect of other branches, 75 crowns ($20) a year for each school was given by the State, if four hours a week were devoted to this branch during the school year. If there are divisions for slöjd instruction with at least 15 pupils, then the $20 subsidy is given to each division. The schools receiving State aid for slöjd, mostly elementary schools, were as follows:

Year.	Schools.	Year.	Schools.	Year.	Schools.
1878	103	1884	584	1890	1,392
1879	163	1885	727	1891	1,492
1880	234	1886	872	1892	1,624
1881	300	1887	991	1893	1,787
1882	377	1888	1,167	1894	1,887
1883	463	1889	1,278		

The new subsidies went into effect in 1895, and the 2,483 divisions (afdelningar) received 185,236 crowns ($49,643), some portion of which came from provincial and communal authorities and agricultural societies, corporations, etc. The increase of those under slöjd instruction is so great that, as the State subsidy goes to the school district for distribution, it follows that higher grade schools, private schools, etc., do not receive any part of it.

Slöjd instruction is given in the 7 teachers' seminaries, since 1876 in Karlstad, since 1888 in Lund and Hernösand, since 1892 in Linköping, and since 1893 in Upsala, Göteborg, and Växjo. Courses in slöjd have been carried on in several provinces under the supervision of recognized teachers (State appointees) of the Royal Academy of Agriculture. Other persons are employed for the instruction proper, the majority of whom have followed courses in the Slöjd Seminary at Nääs. Slöjd instruction is not a requirement of the State, but there are subsidies for it, and there is the requisite State inspection. In Stockholm there are special slöjd-school inspectors. The best methods to be employed for the development of slöjd instruction were discussed in 1895 at the meeting of the Northern Teachers' Association in Stockholm. These include a graduated series from easy to more difficult exercises, the cultivation of individuality in the work, the harmonious development of body and mind leading toward work, order, exactitude, and skill, the courses to be given by teachers who have both theoretical knowledge of slöjd and pedagogical training.

In addition to the teaching of slöjd in wood, there is in the Stockholm schools work in pasteboard and metal slöjd. The training in the different kinds of pasteboard work is especially for children of both sexes in the lower classes, wood slöjd not being undertaken until the eleventh or twelfth year of age. Training in metal work, with a well-arranged series for this kind of instruction, greatly interests those who take part in it.

Slöjd instruction for girls is not obligatory in Sweden, although it is stated to be so in most European countries, but within the last twenty years slöjd for girls has been introduced into many schools. This is the outcome of the development in skilled handiwork, such a system being known in Germany as the Schallenfeld method, from Rosalie Schallenfeld, who introduced and developed it. The Swedish plan is known as "the Stockholm method," which has gradually been introduced from the elementary school into schools of higher grade and into seminaries. The special effort is to train hand and eye, to develop individuality, skill, and system, and to so train the young girls that they will be thoroughly in sympathy with duties in the household. Progressive methods are used. The course includes knitting, darning, sewing, drawing, designing, cutting and planning of garments, and skilled handiwork generally. During the years 1885 to 1897 fully 573 slöjd teachers have been trained to carry on the above phase of slöjd training.

The Slöjd Teachers' Seminary at Nääs was established twenty-five years ago as a slöjd school for boys, which afterwards developed into the well-known seminary where teachers of slöjd in the elementary schools were trained. The courses aim to give thorough training in pedagogical slöjd. The instruction, which is gratuitous, covers slöjd pedagogy, history of pedagogy, psychology, drawing, wood slöjd, and gymnastics. All the material used is free, also lodging (if desired), but meals cost from 45 to 47 crowns ($12.06 to $12.59) a course. The finished work is given to the pupils so that it may be used in the courses over which they may have charge.

The number of persons in attendance at the four courses per year was from 270 to 290, the majority of them teachers. Since the foundation 1,904 men and 723 women have taken part in some one or more of the courses to date of 1896, but if one counts each course taken by a person the number is 3,441. Some 670 teachers from other countries have followed the courses. Since 1895 there has been a course to train teachers having charge of plays and games for children. This course in the theory and practice of educational games seems an especially popular one. The term "Nääs-system" is given to pedagogical slöjd as taught at this school, its aim being to so thoroughly train the individual under instruction that he develops skill, character, readiness of thought, love of work, exactitude, neatness, dispatch, practice in teaching, thoroughness in production. He is taught how to hold his body, to develop the muscles, to understand physiological ideas, to develop the will, and broaden his ideas. In the main work of slöjd instruction in wood he is taught to carry out his own individuality to a certain extent. The special tool used in slöjd, as taught at this school, is the knife. The pupil must have attained the tenth to twelfth year. The workshop for the workmen and the training school for the teacher are the two main elements in the Nääs system. Experience has taught that this is the best method for an all-round development.

EXPENDITURES.

The expenditures for the year 1895 were subdivided as follows:

Expenditures.	Crowns.	Dollars.
The common schools	16,074,934	4,307,948
The higher schools	5,161,500	1,383,282
The universities	1,492,283	399,931
Technical instruction	921,283	246,903
Total	23,650,129	6,338,064

Divide this amount according to the total of inhabitants, 4,886,222, and we have per capita 4 crowns 84 öre. Then there must be added thereto the expenditure

for military, agricultural, forestry, and veterinary schools. The cost for private schools is not reckoned except when they receive subsidies from State, provinces, or communes.

MISCELLANEOUS.

[Cooking schools (skolköken); school baths (skolbaden); ventilation (luft växlingen i våra skolsalar).]

About ten years ago efforts were made in the elementary schools to give poor children a midday meal, the food being brought in from outside. It was soon considered advisable, however, to have the food prepared in the school itself, so that school kitchens were established, and the oldest girls took part in the preparation of foods. An outgrowth of this idea has been the teaching of cooking as a part of the course. In 1893 the first elements of domestic economy—as this was called—were established. In 1896 regular cooking arrangements were established in some of the newest school buildings, and in every case the very best methods of ventilation have been adopted, so that there is no danger of drafts upon the person engaged about the cooking stove. About 18 girls, of from 12 years on, can be instructed at the same time in any one of these rooms, so that during the term some 103 girls have opportunity to become experts in making the fire, preparing the special food desired for the day, cleansing the kitchen utensils, serving the food, and cleaning up afterwards preparatory to the next day's instruction. After the cooking lessons (from 10 to 2 or 3 o'clock) are over the girls are ready to go home. The interest in this phase of domestic economy is such that in one school a gift of 75,000 crowns ($20,100) to further the work was made, the revenue therefrom being turned into the pension fund. In another district 100,000 crowns ($26,800) was given to erect a building for a cooking school, which is to be equipped with six ovens. This plan for cooking schools was begun in Stockholm, but has now been extended to Malmö, Landskrona, Göteborg, Örebro, Gäfle, Hudiksvall, Norrköping, and other towns.

School baths.—During a period of several years there have been baths and exercises in swimming arranged for pupils during the summer in Stockholm, but during the winter months economic reasons prevented such bathing exercises. Since 1890 bath houses have been erected in connection with the schools, and the children in turn are given baths every three weeks at a very small price. Care is taken of the children, and an hour's rest after the bath is required of each child.

Ventilation is recognized as an absolute necessity in schoolrooms if the school work is to be of an excellent character. The result of investigations in this matter is that furnace heat with ventilating shafts is now used in the largest and most modern school buildings of Sweden. Steam and hot-water heating are used in different localities. In parts of the country where such methods of heating and ventilation can not be employed ventilating shafts are introduced, which in the Stockholm schools change the air of the rooms four times an hour, so that the children have the best sanitary conditions around them in the schools wherever such methods have been introduced.

CHAPTER VI.

STATE EDUCATION IN JAPAN.[1]

By Robert E. Lewis.

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[1] This valuable paper, prepared by Mr. Lewis, of Shang-Haï, was transmitted by Hon. A. E. Buck, United States minister at Tokyo, to the honorable Secretary of State, through whose courtesy it has been made a part of this report.

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The writer has been privileged to make a study in Japan of Japanese education. The chief sources of information have been: (1) Personal examination of educational institutions, (2) interviews with prominent educators, (3) the Government publications on education, (4) publications of various colleges, and (5) interviews with students in many Government and Christian colleges. The writer has been able to buttress his statements, as well as settle his convictions, by reference to general works on Japan and to current literatu

SECTION I.—STATUS OF EDUCATION BEFORE THE MEIJI ERA.

A comprehensive survey of modern education in Japan can scarcely be made without first sketching the status of education prior to the present Meiji Era. The educational system of Japan was adopted from the West, but he who fails to take into account the educational status of the Japanese previous to the Renaissance will not form an adequate judgment of present forces.

The Meiji Era is the official designation of the reign of the present Emperor of Japan, who was restored to supreme power by the revolution of 1868; and it has marked the seclusion of the Shogun, the great expansion of commerce, the inauguration of constitutional government, and the establishment of a national system of education.

Previous to the Meiji Era Japan was in a state of organized feudalism. From the beginning of learning in Japan to the present century there is no evidence that the State as such provided education for its people.[1] Education was left to private or local enterprise.

[1] Japanese Education (Government of Japan), pp. 11-12; Religions of Japan, Griffis, p. 313.

1. THE INFLUENCE OF BUDDHISM.

The story of learning in the Middle Ages in Europe was repeated in medieval Japan.[1] The Buddhist temples became the seat of a rude learning. While the national rulers despised or forgot the education of the people, the Buddhist priests were the schoolmasters of the nation. They deserve no little credit for seizing this opportunity, for though the instruction was based on the Buddhist sutras, yet it served for many years to keep the flame of knowledge from being extinguished.[2] In the temples, up and down the country, primary schools were conducted for plebeian or patrician. In the midst of fierce internecine struggles these men quietly plied their craft, and such instruction as Japan had they gave.

Nor were they content to teach simply. The priests were the creators of a literature which may be variously regarded in this century, but which in the sixteenth was the best that Japan had. The temples became the repositories of this literature and the monks its guardians.[3]

Before the sixteenth century was ended Buddhism had indelibly stamped itself upon the spoken language as well as upon the literature of Japan. These early priest-teachers influenced the phraseology of the people somewhat as the Christian Scriptures have permeated the language of the Western nations.[4]

2. INFLUENCE OF CONFUCIANISM.

The influence of Buddhism began to wane with the advent of the Tokugawa Shogunate. In 1603 Confucianism took up its silent march through the Japanese mind. It took possession as it proceeded and held its own until the Shoguns were driven from power in 1868. For three and a half centuries Confucius was the head master of Japan, with the Buddhist priests as his understudies. With that adaptability which Buddhism has shown in other parts of Asia, it shaped itself in Japan to Confucian ideas and became the propagator rather than the opponent of Chinese learning.[5] From the printing of the Chinese classics in Japan by the order of Ieyasu to the coming of Western ideas Confucian philosophy is the one force to be reckoned with in the educational life of the Japanese nation.[6]

To understand where Western learning found Japan, and what its task was in Japan, we must allude to the dominant features of Confucianism. Confucius, the Aristotle of Asia, produced what may be

[1] Dr. L. R. Klemm, in U. S. Education Report, 1891-92, vol. 1, pp. 200-205; History of Japan, Adams, vol. 2, p. 319; Middle Ages, Hallam, vol. 2, pp. 950-952; History of Civilization, Guizot, p. 215.

[2] Things Japanese, Chamberlin, p. 124.

[3] Mikado's Empire, Griffis, pp. 201, 202, 297; Religions of Japan, pp. 313, 314; Yankees of the East, Curtis, vol. 2, p. 381.

[4] Religions of Japan, p. 265.

[5] Things Japanese, pp. 93 and 124.

[6] Mikado's Empire, p. 297.

considered either as a "system of ethics or of anthropology."[1] He claims to have been, in his own words, "a transmitter and not a maker."[2] Man; his relationships to the family, to society, to the state, to heaven; these are the subjects on which he collates his material. With marvelous detail he elaborates his "Superior Man." In the "Great Learning" the relationships and prerogatives of the Superior Man are marked out: (1) The study of things, (2) the completion of knowledge, (3) the veracity of intention, (4) the rectification of the heart, (5) the cultivation of the whole person, (6) the management of the family, (7) the government of the state, and (8) the peace of the whole empire. In this iron mold for centuries the men of Japan, China, and Korea had been cast. Confucius had spoken, and, ipse dixit, there was nothing to be added or deducted. The mind of the far East for centuries has had no other nourishment than the words of this one man. In literature—prose or verse—in philosophy, in patriotism, in sociology, there was but one standard. Originality was a species of disloyalty. The Chinese language was infused into Japan, "mispronounced, and in sound bearing as much resemblance to Pekingese speech as 'Pennsylvania Dutch' to the language of Berlin."[3] In seeking to estimate Confucian education we may ask, first, What was its attitude toward the education of woman? Professor Legge, of Oxford, the foremost Confucian scholar, quoted Confucius as follows: "It is no undesirable thing for a wife to be stupid, whereas a wise woman is more likely to be a curse in a family than a blessing."[4]

The text-book of morals was Confucian. Polygamy was an integral factor in the system. Contempt is thrown upon "common men who are bound to one wife."[5] The ideal woman is she who is not jealous of the concubines in her husband's family.[6]

The text-book of politics was Confucian. It places the emperor above all earthly power. He is the "Son of Heaven." In him centers and from him radiates all power. He therefore can not recognize the sovereigns of other empires as his equals. This Confucian doctrine in China and Japan is the basis of the violent contempt for foreign nations which only gave way when it could no longer resist.

The text-book of history was Confucian. Professor Legge is authority in regard to the historical qualifications of the sage:

> First, he had no reverence for truth in history; I may say, without any modification, no reverence for truth. He understood well enough that it was the description of events and actions according as they had taken place; but he himself constantly transgressed it in all the ways which I have indicated. Second, he shrank from

[1] Systematical Digest of the Doctrines of Confucius, Faber, pp. 36 and 54–113.
[2] Confucianism and Taoism, Douglas, p. 9.
[3] Religions of Japan, pp. 356–357; Japanese Education, p. 10; History of Japan, Adams, vol. 2, pp. 317–318 and 321.
[4] Prolegomena to the She-King, Legge, p. 138.
[5] Confucianism and Taoism, p. 125; Confucianism, Faber, p. 6.
[6] Prolegomena to the She-King, p. 140.

looking truth fairly in the face. It was through this attribute of weakness that he so frequently endeavored to hide the truth from himself and others by ignoring it altogether or by giving an imperfect and misleading account of it. Whenever his prejudices were concerned he was liable to do this. Third, he had more sympathy with power than with weakness, and would overlook wickedness and oppression in authority rather than resentment and revenge in men who were suffering from them. He could conceive of nothing so worthy of condemnation as insubordination. Hence he was so frequently partial in his judgments on what happened to rulers and unjust in his estimate of the conduct of their subjects.[1]

In the later development of the feudal system in Japan the seats of the great lords, or Daimios, became the centers of Confucian learning. There were two classes of schools for the education of the military class, the Kanga-ku and the Hyoga-ku.[2] The length of the course of study covered six or seven years. The result of the combination of Confucian learning and Daimio patronage was the samurai, or soldier-scholar, class. The samurai gradually supplanted the Buddhist priests as the real leaders of the people.[3] The samurai became the most influential class in Japanese society, and "now constitute over one-twentieth of the populace." From the soldier-scholar class have come "nearly all the great warriors, statesmen, scholars, reformers, Christians, thinkers, and philanthropists of modern times."[4] The samurai to-day make up, with few exceptions, the governing class of Japan.[5] The transformation of this most important element among the people of Japan from a double-sworded, high handed, clannish patriot into the scholar, the legislator, and the merchant of the Meiji era is one of the fascinating studies of modern Japan.

3. THE YOGAKU, OR NEW LEARNING.

The mind of Japan was restive in its Confucian fetters. There were attempts to select the best in the Chinese philosophy and unite with it the better parts of Shinto and Buddhism.[6] The most successful of these movements was the Yogaku. It collapsed in the internal struggle which racked Japan at the time of its opening to foreign nations. It serves, however, to show the temper of the people toward the old system, and explains the readiness with which the new system was later on adopted. The Yogaku movement, together with other forces, was the means of opening the eyes of the people to the unwarranted seclusion of the Mikado and the unnatural assumption of the Shogun. The Yogaku illustrates the general tendency which finally led up to the battle of Fushimi in January, 1868, which marks the beginning of the modern era in Japanese history.[7]

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[1] Prolegomena to the Chun Ts'ew, Legge, p. 50.

[2] Outlines of Modern Education in Japan (Government), p. 17. History of Japan, Adams, pp. 319-320-324. Page 321 gives three classes, the Sho, Chiu, and Dai Gakko; i. e., Small, Middle, and Great School.

[3] Mikado's Empire, p. 297.

[4] Encyclopedia of Missions, vol. 1, p. 488.

[5] Things Japanese, p. 373.

[6] Religions of Japan, p. 369.

[7] Intercourse of the United States and Japan, Nitobe, p. 30. Encylopedia of Missions, vol. 1, p. 463.

SECTION II.—GENERAL SURVEY OF THE NEW EDUCATION.

1. FIRST ATTEMPTS.

To the Hollanders undoubtedly belongs the credit of creating a thirst in Japan for Western education. From 1630 the Dutch had been allowed to hold a trading post in Nagasaki Bay. Here, despised by the Japanese Government and treated as an inferior people, they plodded on. Their rights curtailed, their island spied upon, themselves the center of suspicion, they were resorted to in secret by Japanese who were willing to risk life in the pursuit of knowledge.[1] This surreptitious teaching took such a hold that "Rangaku" (Dutch learning) became the common designation of the new ideas.

It was something to acquire a smattering of engineering, mining, pharmacy, and astronomy. But the Dutch teachers went further in medicine, and "Rangaku" became largely a synonym for Dutch medicine. So strong was the influence of these Nagasaki merchant-teachers, and so open did the avowal of the new ideas become, that schools were started by Japanese in Tokyo to pass on what they had learned from the foreigners.[2] The ardor of those who would escape from the bondage of Confucianism is illustrated by Shozan Sakuma. He sent up a radical petition to his feudal lord, the sixth article of which proposed "to establish schools even in the smallest villages to instruct the people in the principles of morals." He was assassinated in 1864 for his temerity.[3] It was in the midst of such a groping after light that America appeared and opened the doors of Japan.

2. AMERICAN DIPLOMACY.

There had been repeated attempts by England, France, Russia, and America to open negotiations with Japan, but with no success.[4]

Had they been willing to assume the Hollanders' position of vassalage they would have got no farther than the Hollanders.

Commodore M. G. Perry with his American fleet anchored in Yeddo Bay in 1853. Three incidents of his stay indicate the results of his mission. (1) On July 10, in Yeddo Bay, Perry and his men joined in the hymn—

> "Before Jehovah's awful throne
> Ye nations bow with sacred joy," &c.

(2) He insisted on an interview with the Shogun, a then presumptuous demand, and (3) he brought as one of his gifts a Webster's Dictionary. He accomplished his end, and his treaty paved the way

[1] Lord Elgin's Mission to China and Japan, Oliphant, p. 309. Intercourse of the United States and Japan, p. 21. Yankees of the East, vol. 2, p. 340. Matthew Galbraith Perry, Griffis, pp. 424-425.

[2] Japanese Education, pp. 98-107. Intercourse of the United States and Japan, pp. 22, 25, 26.

[3] Intercourse of the United States and Japan, p. 28.

[4] The Story of Japan, Murray, pp. 310-311. Intercourse of the United States and Japan, p. 116. History of Japan, Adams, vol. 1, pp. 108-114.

in Japan for Western commerce, education, and Christianity.[1] He was followed by the Hon. Townsend Harris, the first envoy resident in Japan. Mr. Harris, unaided by ship or gun, forced his way into Tokyo (Yeddo), had an audience with the Shogun, and after a weary siege carried through a permanent treaty which was for years the basis of all diplomatic relations on the part of Europe, as well as America, with Japan.[2]

Lord Elgin, the British diplomat, arrived in Japan five years after Perry made his historic visit, and called on Mr. Harris in Shimoda, only to learn that the latter had already consummated his commercial treaty. Mr. Harris showed his good will by loaning his confidential secretary and interpreter to Lord Elgin, who then proceeded to Tokyo.

On August 28, 1858,[3] the British-Japanese treaty was signed, thirty days after Harris's American-Japanese treaty.[4]

The results to education of this (American) diplomacy in Japan were immediately felt. Schools were opened for the study of foreign languages, and institutions and independent academies grew up like mushrooms.[5] When the stern task of solving revolutionary problems was once finished, education began to take organized form. In 1868, at the opening of the Meiji era, a provisional board of education was established in Kioto.[6] The court nobles, feudal lords, and public officials were commanded to attend the new schools opened in Tokyo. In 1871, the Mombu-sho, or department of education, was established, and the minister of state for education began the quiet revolutionary work upon which the future of Japan so largely depends.

American influence did not cease with the decisive diplomatic success of Perry and Harris. Without the thought of territorial acquisition the United States impressed one of its greatest institutions upon the Japanese Empire. In 1860, through the influence of Envoy Harris, the first Japanese foreign commissioners visited America, taking passage in the United States warship *Powhatan*. Mr. Shimmi was the head of this mission.[7] The world's embassy followed in 1872, and numbered among its 49 members Prince Iwakura and Count, now Marquis, Ito. It called as its secretary J. H. Neesima, who was studying in America. One of the most important parts of the report of this embassy related to its observations on education.[8]

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[1] Treaty signed Friday, March 31, 1854. The United States-Japan Expedition, published in 1858 by the Government of the United States, and edited by F. L. Hawkes, LL. D., contains a complete record of the whole expedition. For text of treaty, see pp. 377-379.

[2] Townsend Harris, First American Envoy in Japan; Griffis, pp. 140-325. History of Japan, p. 117

[3] Narrative of the Earl of Elgin's Mission to China and Japan, pp. 344-346, 355, and 462. August 18, 1858, according to History of Japan, Adams, vol. 1, p. 117.

[4] Townsend Harris First American Envoy, p. 321. Narrative of the Earl of Elgin's Mission to China and Japan. pp 344-346, 355, 462.

[5] Intercourse of the United States and Japan, p 62.

[6] Outlines of Modern Education in Japan, pp 1-2.

[7] Intercourse of the United States and Japan, pp. 161-162. Townsend Harris, p. 323.

[8] Japanese in America, Lanman, pp. 7-9.

As early as 1866 the first group of students went to America, and during the next ten years about 500 Japanese students sought training in the Dutch Reform Colleges alone in America. Over 300 Japanese young men have studied at Rutgers College. In 1887 there were 686 male and 13 female Japanese students in America.[1]

The Government sent many men at its own expense to study in foreign lands. At first these were largely sent to America, but later to Germany and other European countries. In 1873 there were 250 students studying at Government expense in foreign lands. They were all recalled in 1874, and from 1875 to 1890 only about 90 Government students were sent abroad.[2] In the year 1895 11 students were officially sent to various countries to pursue studies, as follows:[3]

Number of students.	Country.	Subjects to be studied.
8	Germany	Street mapping, seismology, chemistry, medicine, and embryology.
1	Austria	Skin diseases, syphilis.
1	England	Mechanical engineering.
1	Holland	Zoology.

3. BREADTH OF THE NEW PLAN.

In 1872 the Government of Japan considered itself ready to launch the new scheme. In promulgating the educational code the Emperor said:

> All knowledge, from that necessary for daily life to that higher knowledge necessary to prepare officers, farmers, mechanics, artisans, physicians, etc., for their respective vocations, is acquired by learning. It is intended that henceforth education shall be so diffused that there may not be a village with an ignorant family or a family with an ignorant member. Persons who have hitherto applied themselves to study have almost always looked to the Government for their expenses. This is an erroneous notion proceeding from long abuse, and every person should henceforth endeavor to acquire knowledge by his own exertions.

That was no small undertaking which soberly started out to educate an oriental nation on western lines until there should "not be a village with an ignorant family or a family with an ignorant member." But the magnitude of the task is overbalanced by the magnificent resolution displayed in carrying the plan to a culmination.

4. SOURCES OF THE NEW LEARNING.

The relationships of the United States and Japan are clearly seen in educational matters. Hon. William H. Seward expressed his early conviction as follows:

> If the tutorship of the United States in Japan is to be successful, it must be based on deeper and broader principles of philanthropy than have hitherto been

[1] Intercourse of the United States and Japan, pp. 165-166. Yankees of the East, vol. 2, pp. 398-399.

[2] Outlines of Modern Education in Japan, pp. 202-204.

[3] Japanese Government Report, 1895, p. 14.

practiced in the intercourse of nations; * * * a philanthropy which shall not be content with sending armies and navies to compel, but which shall send teachers to instruct and establish schools on the American system, where philosophy and morals, as well as religious faith, are taught with just regard to their influences in their social and domestic life.[1]

This advice of the great statesman has actually been the American policy. This largely accounts for the fact that in the formative days American influence was predominant.[2] It can not be said to be so at present, as will appear.

President K. Ibuka, of Tokyo, said in an address in America that when Japan reached out after western ideas she copied her navy from Great Britain, her army from France, her medical science from Germany, and her educational system from America.

To be exact, we will refer to some Americans who, among others, laid the educational foundation in Japan. Dr. J. C. Hepburn was the lexicographer who made possible to Japanese and to English the mutual study of their respective languages, and whose work alone stands protected by imperial edict. Prof. R. Pumpelly surveyed mining lands and first introduced powder and blasting in mining. Prof. Edwin S. Morse founded the Archæological Museum of the Imperial University and taught zoology. Prof. J. C. Mendenhall, as professor of experimental physics, made a scientific study of the force of gravity, wave length, etc., in Japan. Mr. B. S. Lyman surveyed oil lands and made official charts for the Government. Gen. Horace Capron introduced American agriculture and prepared the way for William S. Clark, LL. D., to develop the first fully organized agricultural college in Japan. Musical education was introduced by Luther W. Mason, of Boston. Dr. Leland founded the system of school gymnastics. Miss Linda R. Richards, some time superintendent of the Boston city hospital, inaugurated scientific training of nurses. Mr. M. M. Scott was the founder of the normal school system in Japan. Dr. David Murray, secretary of the board of regents of New York, was the official adviser of the Japanese department of education, and founded the Educational Museum.[3] The formative influence of America is also seen in the Japanese who were trained for educational leadership in American universities. Among such men we find a president of the Tokyo University, a vice-president of the university, a dean of the literature faculty, a professor of English and Latin, a professor of jurisprudence, a professor of physics, and a professor of botany; also the founder of the Doshisha University, and many others.[3]

But two men, one an American missionary and the other a Japanese educated in America, who in the early stages did most for education in Japan, have not yet been mentioned. Dr. Guido F. Verbeck, a

[1] Seward's Travels, p. 93.

[2] Things Japanese, p. 124. Intercourse of the United States and Japan, p. 117.

[3] Intercourse of the United States and Japan, pp. 121-123.

Hollander by birth and early training, finished his education in America and entered Japan in 1859, nine years before the Restoration. He settled in Nagasaki and began to teach. The first Japanese youths to be sent to America went in 1866 through his cooperation. It was he who proposed the Japanese world's commission of 1872, and when its personnel was announced he found that over one-half had been his students.[1] In 1869 he came to Tokyo at the call of the Government, and began his work as founder of the national educational system and first president of the Imperial University, then of course in embryo.[2] Of foreigners the most accomplished Japanese linguist, he became the confidential adviser of new Japan. He translated into Japanese the Code Napoléon, Bluntschli's "Staatsrecht," "Two Thousand Legal Maxims," the constitutions of various nations, and many other invaluable documents to guide the nation.[1] He trained the foremost men of state, and to him, together with Drs. Brown and Hepburn, more than to any others new Japan owes a debt of perpetual gratitude.[3]

It was Dr. Verbeck's cosmopolitan training that led him to advise the Government to adopt the German method of medical instruction, which placed the medical colleges of Japan under German leadership.[4] It was through his counsel and cooperation that the French legal code and legal study were partially adopted in Japan.

At the time Dr. Verbeck was unfolding his educational plans in Tokyo, J. D. Neesima, LL. D., was founding the Doshisha at Kioto, the first Christian college in the Empire. We can scarcely understand the influences that shaped Japanese education if we pass by Mr. Neesima. This scholarly Samurai graduated at Phillips (Andover) Academy, Amherst College, and Andover Seminary. In 1871–1873 he served the world's embassy as interpreter on the one condition that he should be permitted to teach English and Christianity on his return to Japan. His career may possibly be thus summarized: He was brought up a Shintoist, became an atheist, was converted to Christianity, was graduated with honors, became a clergyman, and, returning to Japan, figured as one of the greatest educators and reformers his country has produced.[5]

His work in Japan was pressed into the years from 1874 to 1890. His influence was felt throughout the nation, but his special work was the creation of the Doshisha. At his death the institution had 570 students, with 20 buildings. There were 13 dormitories, a chapel, library, science hall, and gymnasium. The Japanese have not been

[1] Boston Transcript, May 6, 1898.
[2] Tokyo Times, July 27, 1878. The Independent, March 17, 1898. Japan Daily Mail, 1898.
[3] The Yorozu Choho, 1898. The Tokyo Times, 1878. The Kokumin no Tomo, 1898.
[4] Baron Ishiguro in the Tenchijin; Surgeon-General Ishiguro.
[5] Life of Neesima, Hardy. Life of Neesima, Davis. Unbeaten Tracks in Japan, E. L. Bird, vol. 2, pp. 226–235. Christian Missions and Social Progress, Dennis, p. 359.

slow to recognize his strength of character.[1] Dr. Verbeck and Dr. Neesima were both men of retiring character, but both had the faculty of bringing things to pass. Both were sinologues, yet neither were simple scholastics.

Among the men who have laid the foundation of western education in Japan, Mr. Fukuzawa can scarcely rank second to any. His personal influence has been longer applied than that of Mr. Neesima, and since the latter's death Mr. Fukuzawa has been the greatest Japanese educator-reformer. Europe seems to have most strongly influenced him. Declining all official preferment, he has held to his one aim, and Japan has felt the power of his independent mind. He has built up an independent college in Tokyo, the attendance at which has been over 1,000. As a writer, his books have had an enormous circulation. His "Promotion of Learning" consisted of seventeen volumes, and 200,000 sets of the complete work were sold. His book on his observations in Europe reached a sale of 250,000 copies. He has not been afraid to assault those customs of his land which he has considered unworthy, and his work is not yet finished.[2]

We pass from the sources of the general educational renaissance to note the sources of one or two phases of education in Japan. The university system was first on an American plan, but was radically changed by German influences. The present organization of the Imperial universities finds no complete counterpart in America.[3]

In medical education the German system has altogether prevailed.[4] In 1870 the Government was memorialized that foreign physicians and surgeons, and specifically Germans, be invited to teach medicine in Japanese medical colleges. The petition was favorably considered, and that same year 12 Japanese medical students were sent to Germany. During 1871–1873 the following foreigners were prominent in the medical department of the university; Dr. Müller, a Prussian chief staff surgeon; Dr. Hoffman, a Prussian fleet surgeon; Drs. Wagner, Simmons, Cochins, Helgendorf, Funk, and Professor Niewerth; in 1873 Dr. Doenitz joined the others. In 1880 the first degrees of doctor of medicine were conferred on 18 students who finished the German course of study. There had been added the following pro-

[1] Mr. Fukuzawa, a noted educator, writing in the Contemporary Review, of Japan, about Dr. Neesima, said: "Independent men make an independent society. Mr. Neesima, living in a corrupt age, was not corrupted by it. Working earnestly in the cause of education and religion, his purpose was ever single. His body perished, but his name is beyond the reach of oblivion." President Kato, of the Tokyo University, spoke as follows of Mr. Neesima: "I am not a believer in Jesus. * * * Neither am I a Buddhist. I am a man of no religion. * * * I praise him for that steadfast spirit, so essential in every sphere—of religion, politics, or trade. I believe this spirit is the greatest necessity of this country." Mr. Takagoshi wrote in a prominent journal: "His fame is the common glory of the nation." Mr. Tokutomi said in the Kokumin-no-Tomo: "As a society we have lost the leader of the cause of moral reformation in Japan." Quoted in Hardy's Life of Neesima.

[2] The Independent, July 21, 1898.

[3] Intercourse of the United States and Japan, p. 120.

[4] Things Japanese, p. 125. Intercourse of the United States and Japan, p. 126. Unbeaten Tracks in Japan, p, 331. Japanese in America, Mori, p. 274.

fessors to the medical department of the university: Drs. Wernich, Gierke, Schultze, Langgaard, Martin, Tiegel, Baelz, Diesse, Scriba, Van der Heyden, and others.[1]

Outside the Imperial University there were men eminent as teachers of medicine. Dr. Faulds, a Scottish missionary, founded Tsukiji Hospital and introduced Lister's system of antiseptic treatment. Dr. J. C. Hepburn, of the Presbyterian board, began medical work at Yokohama (Kanagawa) in October, 1859, and through his clinical instruction trained many Japanese who rose to prominence in medicine. The Japanese state hospital was for years in charge of Dr. Simmons as surgeon in chief. Drs. Wheeler and Anderson from 1874 to 1879 laid the foundations of the naval hospital, and Dr. Benkema those of the military hospital.

At Hakodate two Russian surgeons gathered medical classes in 1858 and 1859. They were Surgeons Albrecht and Zalisky, of the imperial royal navy. When Dr. Stewart Eldridge took up their work in 1872, permanent hospitals were established in the northern island of Yezo, of which Hakodate is the chief port. In Osaka, about 1868, a second military medical college was established and put in charge of Dr. Bowdin, who was succeeded in 1871 by Dr. Emerens. In 1873, the St. Barnabas Hospital, as it is now known, was opened in Osaka by Dr. Lanning of the Presbyterian board. Dr. Vedder, surgeon in the United States Navy, opened the first hospital in Kobe. Here Dr. J. C. Berry, of the American board, became director of the new government hospital, and in 1873 gained the first permission to dissect human bodies. Dr. Thornicraft was associated with him in his important work.[2] We refer in particular to those in charge of hospitals as well as medical colleges, because the hospital is an essential in medical education. And furthermore, much instruction was given to medical students in hospitals before the system of colleges was perfected.

German influence is again seen in the pharmacopœia compiled by the central sanitary bureau, which largely follows the German classification, and came out first in the German language. The foreign medical literature relating to Japan finds most eminent exponents.[3] There has arisen a school of eminent Japanese whose skill in general practice or in specialization is a satisfactory indication of the future place of western medicine in Japan.[4]

This section, on the sources of the new education in Japan, would

[1] Transactions of the Asiatic Society for Japan, vol. 12, July, 1885, Dr. W. N. Whitney.

[2] Transactions of the Asiatic Society for Japan, vol. 12, July, 1885, Dr. W. N. Whitney. History of Protestant Missions in Japan, Verbeck, pp. 44 and 63.

[3] The better known include Drs. Wilhelm Ten Rhyne, Kaempfer, Mohnike, Siebold, Hoffman, Wernich, Hilgendorf, Geerts, Simmons, Scheube, Baelz, Anderson, Eldridge, Faulds, Taylor, and Berry. Transactions Asiatic Society for Japan, vol. 12, p. 385 (Whitney).

[4] Among prominent Japanese physicians in Tokyo, have been mentioned Drs. Matsumoto, Ikeda, Hashimoto, Miyake, Sasaki, Sato, Takaki, Totsuka, Shimidzu, Mume, Harada, Kagawa, and Osawa. *Ibid.*, p. 388.

not be complete without taking into account the number of foreign professors employed. In 1895 the system had reached the stage where it was anxious to "walk alone." The foreigners in the department of education and in the colleges under its immediate control, as distinguished from the institutions controlled by the Fu, Ken, or Gun, were as follows:

Foreigners in the institutions of the department of education.

Nationality.	1895. *a*	1896. *b*
Great Britain	9	10
Germany	8	11
United States	6	2
France	3	3
Russia	1	1
Belgium	1	1
Italy	1	1
Switzerland	1	1
China	1	1
Total	31	31

a Japanese Government Report, 1895, p. 16. *b* Ibid., 1896, p. 21.

They received the annual salary of 103,020 yen, or an average of 3,323 yen each. The yen may be roughly estimated at half a gold dollar.

A larger showing of foreigners is made when we consider all public and private institutions.

Foreign instructors in State, other public, and private institutions. a

Nationality.	Men.	Women.	Total.
United States	73	59	132
Great Britain	36	24	60
France	29	17	46
Germany	12	0	12
Korea	7	0	7
Switzerland	3	0	3
China	3	0	3
Russia	1	1	2
Italy	2	0	2
Belgium	1	0	1
Total	167	101	268

a Japanese Government Report, 1895, p. 93.

Of the total of 268 foreign instructors in all classes of Japanese institutions, it is to be remarked that 202 were engaged in what are termed miscellaneous schools—i. e., schools which may make a specialty of English, literature, law, etc., but which on other subjects may have a deficient curriculum. Here are also grouped mission schools.

5. SUCCESS OF THE GENERAL SCHEME.

The strength or weakness of education in Japan will appear later under the third main section, where the common schools, middle schools, higher institutions, and universities are discussed separately. We are treating the system as a whole at present.

The first educational code was promulgated in 1872, and in 1891, though twenty years had not passed, the Government was teaching 3,630,000 pupils.[1] Although Dr. Rein, of Germany, has written the most complete work on Japan, yet he makes meager reference to education. However, this important observation is made:

> Accordingly, of all the innovations made during the Meiji period, those are justly regarded as most important which emanated from the department of education, and had in view a better and more liberal training of the Japanese youth.[2]

In 1880, that remarkable traveler, Miss E. L. Bird, wrote in her Unbeaten Tracks in Japan: "Nothing is more surprising than the efforts which the Government is making to educate the people." Western learning is in universal demand.[3]

The national educational plan has six distinct classes of institutions. As the nomenclature is not familiar to an American, an explanation is necessary.

Comparative names of institutions.

Japan.	United States.
Lower elementary	Primary.
Higher elementary	Grammar.
Ordinary middle	Grammar.
	High school, first and second year.
Higher	High school, third and fourth year.
	College, first and second year.
Colleges of the university	College, third and fourth year.
	Professional schools.
University hall	Post-graduate courses in arts or professions for advanced degrees.

This comparison is little more than suggestive. It shows (1) that the system is more closely graded in the higher courses than ours; (2) that it presupposes graduate work at least in the colleges of the university, as no A. B. degree is conferred until students have finished, not the "higher" institutions, but the colleges of the university; and no doctor's degrees are conferred until the course in the university hall is completed.[4]

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[1] The educational department estimates the total number of pupils in 1873 at 400,000. Japan Mail, January 25, 1874. Outlines of modern education in Japan, p. 7.

[2] Rein's Japan, p. 429.

[3] Mrs. Elizabeth Bird Bishop, F. R. G. S. Dr. S. H. Wainwright in Student Missionary Enterprise, p. 174. Yankees of the East, vol. 2, p. 381.

[4] See p. 291.

Comparative status of education in Japan in 1895 and 1896.[1]

Grade of institution.	Colleges or schools.		Professors or teachers.		Students or pupils.	
	1895.	1896.	1895.	1896.	1895.	1896.
Imperial University	1	1	161	172	1,620	1,833
Higher and higher middle	6 1	6	237 18	289	4,109 180	4,231
Higher female	15	19	196	237	2,897	4,152
Middle	96	121	1,324	1,722	30,871	40,778
Higher normal	2	2	65	75	392	436
Ordinary normal	47	47	678	692	7,342	8,678
Technical	50	66	486	603	6,089	8,839
Supplementary technical	55	93	71	148	3,327	5,377
Apprentice	10	17	49	97	1,117	1,875
Special	47	44	592	633	8,717	8,741
Miscellaneous	1,261	1,149	3,250	3,228	64,948	68,395
Elementary	26,631	26,835	73,182	76,093	3,670,345	3,877,981

Special schools are designed as institutions in which special instruction is given in such subjects of study as medicine, pharmacy, law, political economy, literature, and science.

Thus, by taking the last Government report, issued in September, 1898, for the year 1896, we find the educational status of all grades to be as follows:

Total number of institutions 28,404, of which 1,762 are private; total number of professors and teachers 84,014, of whom 5,509 are in private institutions; total number of students or pupils 4,030,973, of whom 148,858 are in private institutions.

Section III.—Analysis of the New Education.

In treating of education in Japan, as in any western country, a beginning may be made with the common schools.

1. Elementary schools.

The elementary schools are of two grades, ordinary and higher. They are "designed to give children the rudiments of moral education and of education especially adapted to make of them good members of the community, together with such general knowledge and skill as are necessary for practical life, due attention being paid to their physical development."[2] The course of study in the lowest grade must cover three years, and may cover four. In the higher department of the common schools the course of study varies from two to four years in length. The schools are supported by the cities, towns, or villages, or by several villages in conjunction. Private individuals are welcome to establish elementary schools from their own means. In 1896 there were 539 such schools, as against 26,294 supported by the public. It is an interesting fact that elementary

[1] Japanese Government Reports, 1895 and 1896, pp. 22 and 27, respectively.

[2] Japanese Government Report, 1896, p. 28.

agriculture is being introduced as a study, and that sewing and needle work are taught the girls in over 4,000 elementary schools.

The school age is a period of eight years, from the sixth to the fourteenth year of the child's life. Each city, town, or village appoints school directors and inspectors. The system of elementary schools was first upon the American plan, but at present is more largely German. The first remodeling took place in 1886 and was extended in 1890.[1]

SCHOOL ATTENDANCE.

One of the first tests to put to a national common school system is its relation to the school population. The Government reports give the following:

Year.	Population.	School population.[a]	School attendance.
1885	38,458,000	6,413,684	3,182,232
1890	41,322,005	7,195,412	3,520,718
1895	43,045,906	7,083,143	4,338,069
1896	43,499,833	7,187,059	4,615,842

[a] Excluding those excused from attendance by the Government.

This table records the fact that, in 1885, of the school population 49.62 per cent were under instruction; in 1895, 61.24 per cent; and 1896, 64.32 per cent. From 1885 to 1897 the effectiveness of the school system is seen in that it raised the per cent under instruction from 49.62 to 64.22. The present status compares favorably with that in the United States, where, in 1897, there was 69.50 per cent of school population under instruction.[2]

There is a compulsory educational law in Japan, and school committees are expected to enforce attendance except in certain cases of sickness and poverty. Parents or guardians are also enjoined to compel the attendance of children.[3] Of those who did not attend the prescribed course in 1896 the following statement can be made:

School children not attending school.[4]

Not obliged to attend	578,546
Kept away by poverty	1,484,694
Kept away by sickness	226,758
Kept away by other causes	859,765
	3,149,763

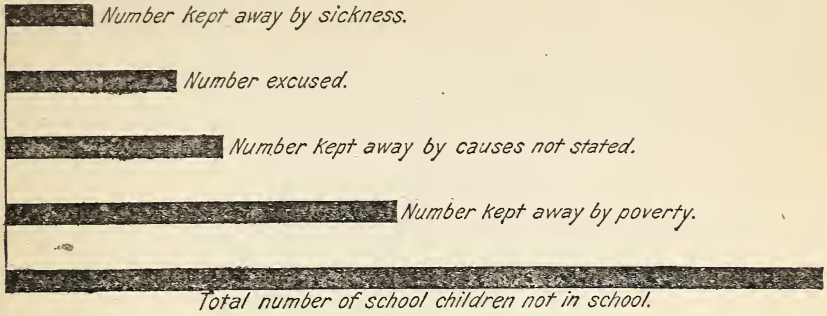
[1] Outlines of Modern Education in Japan, pp. 20-22. Intercourse of the United States and Japan, p. 120.

[2] That is, 69.50 per cent of the children from 5 to 18 years of age. In the United States probably more than 90 per cent of the children from 6 to 14 years of age attend school.—Ed.

[3] Specimen Regulations for Compulsory Attendance. Outlines of Modern Education in Japan, p. 23.

[4] Japanese Government Report, 1896, p. 43.

DIAGRAM NO. 1.—*Total number of children not in school and reasons therefor. (1896.)*



It will be seen that nearly half of those who are out of school, though of school age, are deterred by poverty. But continuing the investigation, we may note whether the parents are more likely to keep the boys or the girls from school privileges.

Number of boys and girls of school age in school.[1]

Year.	Boys.	Girls.
	Per cent.	*Per cent.*
1890	65.14	31.13
1895	76.65	43.87
1897	80.67	50.86

Allowing for the fact that the female portion of the school population in Japan is more likely to be detained from school attendance by sickness than the male, yet it remains that poverty and sickness are reported to keep out of school 29.81 per cent more girls than boys. This is probably accounted for by the fact that in the far east the boy receives the preference in the family plans for schooling, as in other matters.

ATTITUDE OF THE PEOPLE.

An important element in the success or failure of a national system of education is the attitude of the public toward the system. This is especially true where a central government imposes a system covering a whole country. The attitude of the Japanese can be tested by concrete examples. This oriental people has demonstrated its faith in the new education by voluntary contributions of money.

In 1880 Miss Bird wrote that during the preceding five years the voluntary contributions of the Japanese people toward popular education amounted to £1,700,000.[2]

[1] Japanese Government Report, 1890, pp. 99-100; 1895, pp. 35-36; 1896, pp. 44-45.
[2] Unbeaten Tracks in Japan, p. 330.

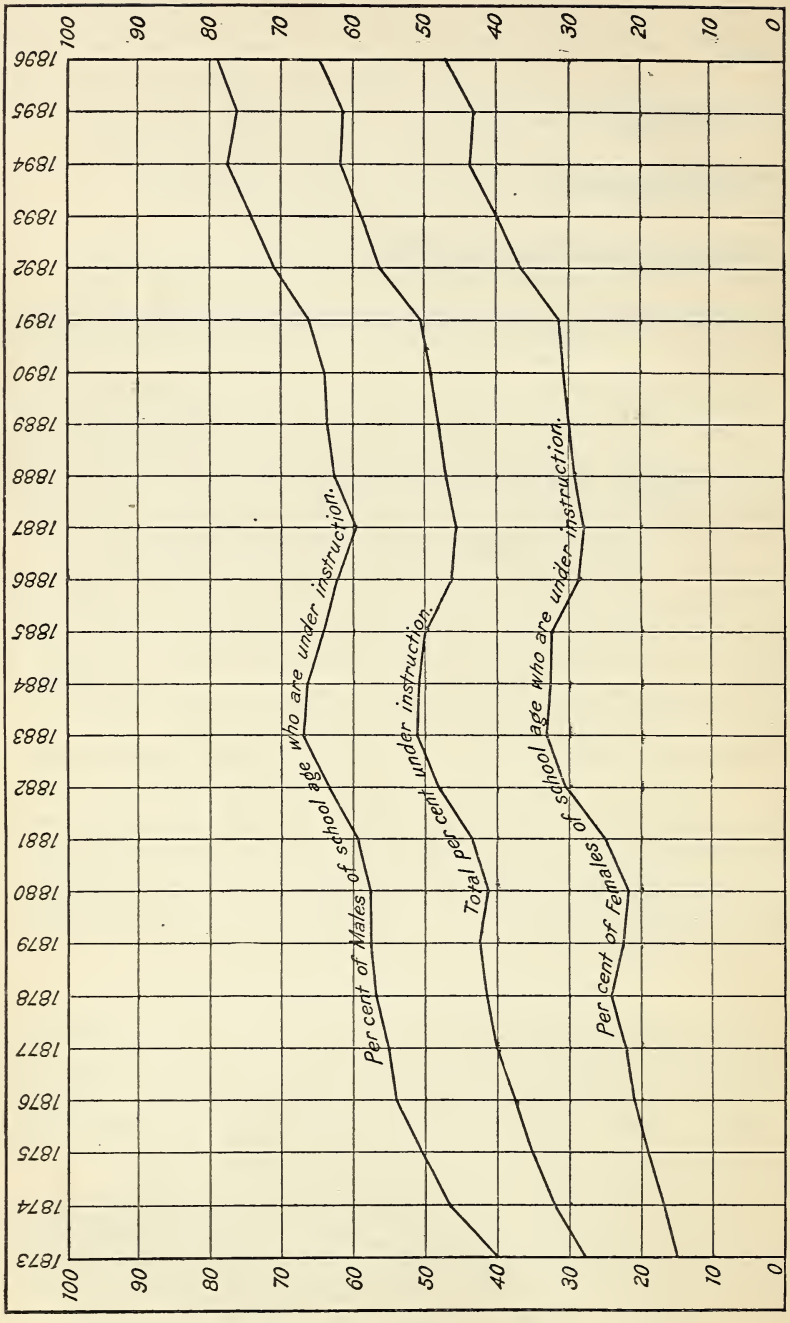


DIAGRAM NO. 2.—*Per cent of school population under instruction. By years, 1873–1896.*

Voluntary gifts to public school fund.

	Yen.
1890, gifts amounted to	[1] 457,386.25
1895, gifts amounted to	[2] 493,046.00
1896, gifts amounted to	[3] 765,422.00

In addition to gifts of money, during one year the people contributed for educational purposes 30,638 tsubo[4] of land, 14,023 books, and 15,707 pieces of apparatus.

TUITION FEES AND TAXES.

It is interesting to note the practical working of tuition fees. The free gifts of money toward popular education were in addition to the taxes for the same purpose. The fixed fee in 1896 for the ordinary elementary schools was 62 sen per month (about 30 cents), and in the higher elementary schools the fee was 22.8 sen per month.

Pupils and tuition fees, 1896.

Total number of pupils	4,615,842
Free tuition	265,629
Fees remitted:	
Part	118,979
Whole	113,514

A large majority, therefore, of the Japanese pupils paid the regular tuition fee. Parents are allowed to pay in kind, or in labor, where tuition fees are remitted.[5]

The Government figures on fees and taxes do not seem clear. They include other branches of public education than the elementary schools. But as the fees and taxes cover the same items, a fair comparison may be made.

Fees and taxes, 1896.[6]

	Yen.
Fees	3,396,167
Taxes	10,037,319
Gifts	765,423

It may be said roughly that in support of popular education in Japan the gifts of the people in money are more than one-fifth the amount realized from fees, and that the latter are about one-third as much as the amount of the local taxes for education. In 1890, of the expenses of 1,998 schools more than half was met by fees, gifts, and rents, the rest being met by taxation.

In this connection, it is interesting to note that in England a law went into effect on September 1, 1891, which pledged a grant from

[1] Japanese Government Report, 1890, p. 98.
[2] Ibid., 1895, pp. 115 and 121.
[3] Ibid., 1896, pp. 224-225.
[4] The tsubo is about 120 acres.
[5] Outlines of Modern Education in Japan, p. 23.
[6] Japanese Government Report, 1896, pp. 130-133, 226-227; Ordinances, Nos. VII and VIII, on School Fees.

Government funds of 10 shillings a year for each child over 5 and under 14 years who was in attendance at school. It was estimated on the average attendance, and thus made two-thirds of the English elementary schools practically "free schools." In America free elementary schools are fundamental in the educational policy.

SUBJECTS TAUGHT IN ELEMENTARY SCHOOLS.

In the remodeling of the school system in 1890, the division into "ordinary" and "higher" was made. The subjects prescribed for ordinary elementary schools were the following: Morals, reading, composition, writing, arithmetic, and gymnastics, or (in place of the latter) Japanese geography. Japanese history, drawing, singing, and manual work were elective. In the higher elementary schools the following subjects were to be taught: The first five as in the grade below, and, besides, Japanese geography, Japanese history, foreign geography, science, drawing, singing, and gymnastics were compulsory. The number of hours of instruction in the ordinary school were not to be less than eighteen nor more than thirty per week. By Imperial ordinance it was decreed that neither teachers nor directors of schools shall inflict corporal punishment on the scholars.[1]

TEACHERS AND NORMAL SCHOOLS.

A matter of prime importance and of continual and perplexing difficulty is the training of suitable teachers to instruct the millions of pupils who flock to the Government schools. The qualifications must be radically different from those known under the old régime of Chinese learning. The code was promulgated in 1872, and in 1873–74 eight normal schools were doing their best to qualify teachers. The Government required that all teachers should either pass set examinations or be the possessors of normal-school certificates.[2]

Normal-school statistics.[3]

	1885.	1890.	1895.	1897.
Normal schools	57	47	47	47
Male teachers	683	579	633	677
Female teachers	58	45	45	43
Male pupils	6,702	4,410	5,398	6,201
Female pupils	1,005	885	720	720
Expenditure ..... yen	551,195	800,000	816,366	942,598

Besides this showing it is to be noted that in 1890 a "higher female normal school" and a "higher normal school" were established in Tokyo. In 1896 there were 106 students in this advanced normal

[1] Imperial ordinance, 1890, art. 63.

[2] Ibid., articles 54 and 55; Outlines of Modern Education in Japan, pp. 3 and 182; Japanese Education, p. 23.

[3] Japanese Government Reports, 1885, 1890, 1895, 1897.

school for women, and 228 students in the corresponding school for men.

That the Japanese were intent on producing capable teachers was seen in the fact that in 1890 the expenditure per student in normal schools was 151 yen, while in the middle schools of the same date the expenditure was 30 yen per pupil, and in the elementary schools it was 2.42 yen per pupil.[1]

In 1896, out of 58,256 regular teachers in Government schools, 16,996 were graduates of normal schools.[2] This does not count in private schools.

By referring to the table immediately preceding, it will be observed that in the Japanese normal schools men greatly predominate, the situation being the reverse of that found in America.[3] The regular course of study in the normal schools requires thirty-four hours a week for a period of four years. The subjects are stated as: Morals, history and principles of education, Japanese language, Chinese literature, history of Japan, foreign history, Japanese and foreign geography, mathematics (arithmetic, geometry, bookkeeping, algebra), physics, chemistry, botany, zoology, physiology, mineralogy, writing (Chinese, and Japanese running hand), music, gymnastics, foreign languages (reading, grammar, conversation, writing), agriculture, political economy, and manual work.[4]

There still remains to be mentioned the total number of teachers employed in the schools.

	1885.	1890.	1895.	1896.
Total number of teachers	99,510	67,699	73,160	76,069
Average number pupils to each teacher	31	46	50	51
Average salary of regular teachers (yen)	90.67	99.14	.....	.....

In 1897 the total number of teachers, men and women, was increased to 79,274, but was yet 13,620 short of the number called for by the regulations. This inability to secure an adequate teaching staff calls attention to the fact that the average monthly salary in 1897 for male primary teachers was about 13 yen, and for female teachers about 10 yen. Though this was a larger amount than in other years, yet there has been much just criticism of the educational authorities, on the ground that the primary schools will never attain the proficiency desired until the salary more nearly corresponds to the importance of the duties required of the teacher.

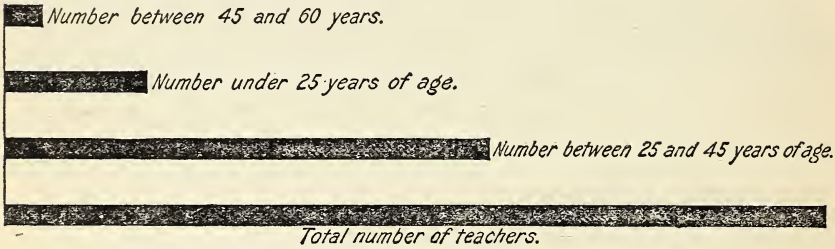
[1] Japanese Government Report, 1890, p. 95.
[2] Ibid, p. 39.
[3] United States Education Report, 1892, pp. 104-105.
[4] Outlines of Modern Education in Japan, pp. 60-86.

Teachers in public elementary schools, classified by age.

Age.	Graduates of normal schools.	Otherwise licensed.	Total.
Under 20	163	1,877	2,040
Between 20 and 25	3,776	7,645	11,421
Between 25 and 30	5,120	11,918	17,038
Between 30 and 35	4,445	8,732	13,177
Between 35 and 40	1,980	4,375	6,355
Between 40 and 45	931	3,058	3,989
Between 45 and 50	380	1,765	2,145
Between 50 and 55	130	1,050	1,180
Between 55 and 60	51	515	566
60 and upward	20	325	345
Grand total	16,996	41,260	58,256

It is seen from this table that almost three-fourths of the teachers who are normal graduates are between the ages of 25 and 45—the most effective teaching period. Over half of the teachers without normal training are between 25 and 45 years of age.

DIAGRAM No. 3.—*Ages of teachers in public elementary schools (1896).*



Turning from the ages of teachers to the question of teachers' qualifications, we present the following table showing the number of applicants and of those who passed the prescribed tests for licenses as elementary school-teachers, conducted by local authorities (1896):

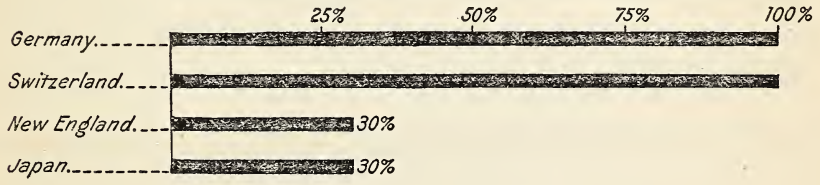
	Number of applicants.	Number who passed the prescribed tests.
REGULAR TEACHERS.		
For general subjects in elementary schools	2,842	1,855
	a 2,075	a 2,068
For general subjects in ordinary elementary schools	9,555	5,362
	a 130	a 130
For special subjects in elementary schools	878	565
Total	13,276	7,792
	a 2,205	a 2,198
ASSISTANT TEACHERS.		
For general subjects in elementary schools	1,409	753
	a 44	a 44
For general subjects in ordinary elementary schools	11,243	4,981
	a 15	a 15
For special subjects in elementary schools	1,678	1,023
Total	14,330	6,757
	a 59	a 59
Grand total	27,606	14,539
	a 2,264	a 2,257

a Normal graduates.

An examination of the above table furnishes another argument for the normal school. There were 13,276 applicants for regular licenses who had not been through the normal schools. Of these 5,494 failed to pass the examinations. Of the 2,200 normal graduates who took examinations all but 7 passed and received licenses. Of the 14,330 applicants for assistants' places who had had no normal privileges 7,573, or over half, failed to pass, but all the 59 normal graduates received permission to teach. That is, of all normal applicants only 7 were plucked, while in the other class 13,067 were plucked, or almost half who attempted the examinations without previously taking normal courses.

An interesting comparison may be made between the status of normal educated-teachers in the educational systems of Germany, Switzerland, New England, and Japan. Considering the very proficient normal schools of the two former countries, the showing of the latter is not discouraging.

DIAGRAM NO. 4.—*Proportion of school-teachers who are normal graduates.*



Japan is a fraction of a per cent in advance of New England, while both are far behind Germany and Switzerland. In these latter countries all the elementary school-teachers are the product of the normal schools. This points to the reason why Japan of late has drawn more help from Germany than from America for her normal-school system.[1]

Elementary education in Japan and in other countries.

	Population.	School attendance.
Japan *a*	43,045,906	4,338,069
Great Britain *b*	33,821,415	5,791,211
France *c*	38,095,156	5,556,470
India *d*	221,172,952	3,686,052
United States *e*	66,087,909	13,510,719

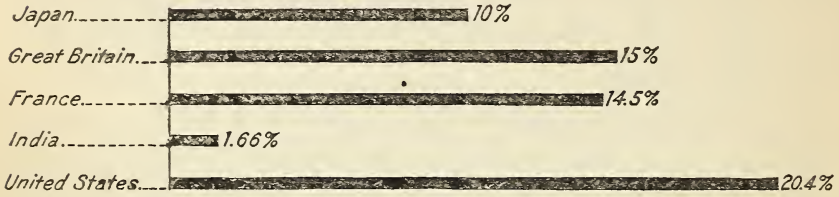
a Statistics for 1896.
b United States Education Report, 1892-93, vol. 1, pp. 203-207.
c A. Tolman Smith in same report, pp. 219-224. School attendance is for France and Algiers.
d J. A. Baines, C. S. I., quoted in United States Education Report, 1892-93, vol. 1, pp 261-278. The population includes only British provinces and those native states under British rule.
e For 1892-93, United States Education Report, p. 23.

[1] Dr. L. R. Klemm in United States Education Report, 1891-92, vol. 1, pp. 155-156.

In other words, the per cent of the population that was under instruction in elementary schools at the time the figures were taken is as follows:

Japan, 10 per cent; Great Britain, 15 per cent; France, 14.5 per cent; India, 1.66 per cent; and United States, 20.4 per cent.

DIAGRAM NO. 5.—*Per cent of population attending elementary schools.*



2. SECONDARY SCHOOLS.

The English equivalent to the Japanese name for secondary schools is "ordinary middle schools," and it is these of which mention will now be made. The ordinary middle schools of Japan occupy a place corresponding to the last year of the grammar and first two of the high schools and academies of America.

They were first defined in the code of 1872, and in 1888 the division was made into ordinary and higher middle schools.[1] The latter were segregated and finally became the present higher schools (or colleges). The law provides that ordinary middle schools must be established either by the cities or by private individuals. There are 121 such institutions enrolling 40,577 students. Of the total, 20 schools are of "private" origin.

COURSES OF STUDY.

The course of study extends over five years. Besides the general studies, which entirely engage the pupil's attention up to the fourth year, there is from there on an important elective. The middle schools have a double purpose: (1) To fit students for the "higher schools," or colleges, and (2) to prepare them to immediately enter "practical pursuits." If the pupil has the latter object in mind, from the beginning of his fourth year he may elect a supplementary technical course. Provision is also made for the introduction of technical studies during the entire five years of study where the local authorities deem it prudent. In such cases courses in agriculture, industry, and commerce are provided. It should be noted that the Japanese lay the foundation for their technical education in the preparatory institutions. The required hours appear to be twenty-eight per week during the course.[2]

[1] Outlines of Modern Education in Japan, p. 8. [2] Japanese Government Report, 1890.

Curriculum of the ordinary middle school.[1]

Subject.	Hours per week.	Number of years.
1. Ethics	1	4
2. Japanese language and Chinese literature	5	4
3. First foreign language (English)	5 to 7	4
4. Second foreign language (German or French)	3 to 4	2 (last).
5. Geography of the world	1 to 2	4
6. Japanese and foreign history	1 to 2	4
7. Mathematics: Geometry, review arithmetic, algebra, etc., advanced algebra, trigonometry, etc	4	3
	3	1
8. Natural history: Physiology, hygiene, zoology, botany	1 to 3	3
9. Physics, chemistry, and electricity	1	1 (2d).
	2	1 (3d).
	3	1 (4th).
10. Writing	2	1 (1st).
	1	1 (2d).
11. Drawing	2	3
	1	1
12. Singing	2	2
13. Gymnastics	3 to 5	4

It appears that the subject most insisted on in the secondary schools is the English language; that the Japanese language and Chinese literature, studied as related themes, are second; gymnastics receives more attention than mathematics or history, and far more than ethics. The explanation of the anomaly is in the fact that through training of the body Japan hopes to repair the physical defects of the people. Considering the facts in the case, this seems an eminently wise provision.

Status of ordinary middle schools.

[From various reports.]

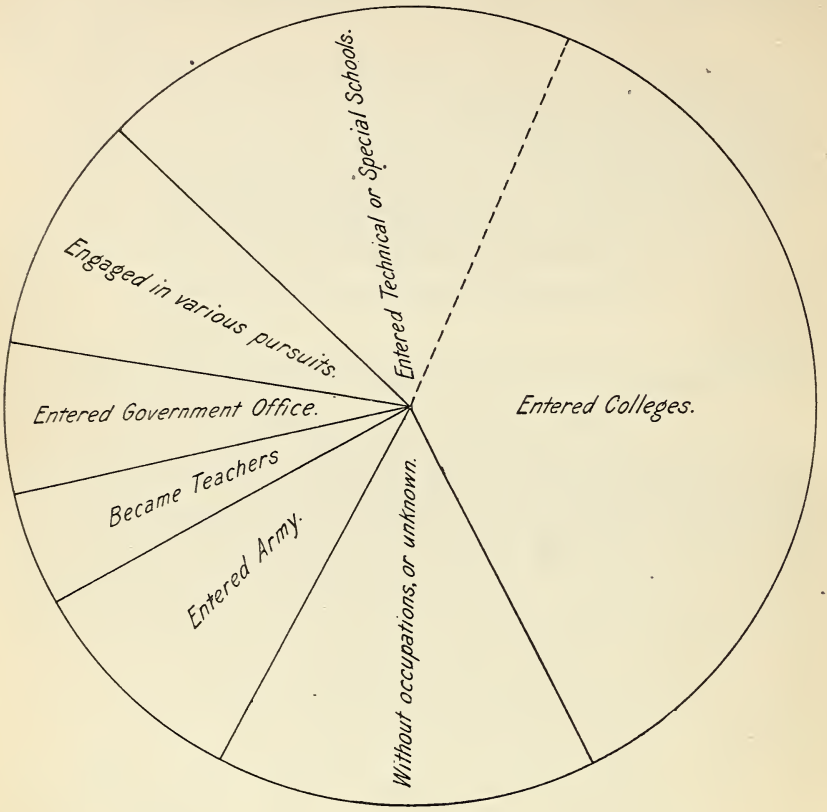
Year.	Schools.			Teachers.			Pupils.		
	Public.	Private.	Total.	Public.	Private.	Total.	Public.	Private.	Total.
1885	105	2	107	1,030	20	1,040	14,747	301	15,048
1890	44	11	55	580	98	678	9,982	1,638	11,620
1896	*a* 99	21	120	1,367	342	1,719	33,915	6,662	40,577
1897			155			2,180			52,443

a Twenty-one of these were branch schools.

This table points to the fact that the weeding-out process from 1885 to 1890 reduced the middle schools almost half. Then began the building-up process until in 1896 there were more schools than in 1885, with nearly 700 more teachers and 25,000 more pupils than at the earlier date. The private schools are seen to be fewer in number, and smaller in teaching force and in attendance than the public schools. But on closer examination it is seen that the average number of teachers in each private school is 16, while in each public school the average number is 13.8. The average number of pupils to each teacher in private schools is 19.4, while in the public schools the average number is 24.8. Thus we conclude that though inferior in number the private schools are better equipped in their teaching force.

[1] Japanese Government Report, 1890.

DIAGRAM NO. 6.—*Graduates of middle schools and their occupations (1896).*



WHAT BECOMES OF THE GRADUATES?

The results of the secondary-school system may be tested by inquiring into the occupations of those who graduate therefrom. The Government has taken pains to do this, and the accompanying chart illustrates the result.

The whole circle stands for the total number who finished the course of the ordinary middle schools in 1896. It will be seen that three-fifths entered higher institutions, that one-eleventh entered the army, and that one twenty-eighth became teachers.

3. HIGHER SCHOOLS.

Having finished with preparatory and secondary education, we take up with higher schools the consideration of higher education in Japan. The Japanese word "gakko" may be translated "school" or "college;" either English word is its equivalent. In the English phraseology adopted by the department of state for education for

the Japanese terms used, the German idea was followed. And thus the higher schools in Japan are not the American high schools, but more like the American colleges. The Japanese avoid calling them "colleges," however, in order to use that word for the colleges of the universities; but, again, these are quite different from the colleges of the universities in Great Britain.

In the beginning of the educational renaissance in Japan these higher schools were called higher middle schools, but in 1895 they were dignified with the shorter title. They were designed for advanced work, and the youth who entered them set his face toward scholarship.[1] The higher female schools (colleges) were an interesting contemporaneous development. They will be treated in Section IV, under the heading "Government education and the advancement of women."

COURSES OF STUDY.

The courses of study are not uniform in the Government higher schools.

The same grade of work seems to be required, but the courses are different. The "third higher school" has departments of law, medicine, and engineering, its advanced courses constituting the beginning of Kioto University. In the first, second, fourth, and fifth higher schools greater emphasis is laid on the general preparatory courses for the university, but each has a medical department. The sixth higher school gives itself entirely to courses leading to the university. The period of study in the departments of law, medicine, or engineering is four years in length. In the university-fitting courses the time spent is three years.

The Government has fixed the standard of entrance examination and the requirements for graduation. In 1895 66 per cent of those who applied were received into the higher schools; in 1896 56 per cent were admitted.

No regular degrees are given by higher schools. The fees vary according to the courses followed.[2] The number of holidays, not including Sundays, shall not exceed ninety, says an imperial decree of 1890.[3] Gymnasiums are to be provided by the Government.[4]

STATUS OF THE HIGHER SCHOOLS.

An interesting classification was made in 1890 of the students in the various higher schools. Of the total attendance, 7 were nobles, 2,049 were from the former military class, and 1,926 were commoners.[5]

The following table shows that the Japanese hold most of the professorships, there being but 12 foreigners in 1896 in the faculties of

[1] Outlines of Modern Education in Japan, pp. 8, 92–111. Japanese Government Report, 1895, p. 59. Ibid., 1896, p. 69.

[2] Japanese Government Report, 1895, pp. 59, 60; Ibid., 1896, pp. 69–71.

[3] Imperial ordinance, 1890, Art. XIV.

[4] Ibid., Art. XVII.

[5] Japanese Government Report, 1890, pp. 62, 63.

these institutions, as against 277 Japanese. No Japanese is expected to hold a professorship unless he has at least a degree from one of the university colleges.[1] There is 1 student in the higher schools to about 10,000 of the population. The expenditure for each institution is 62,162 yen, or something like $31,000 (gold) per year.

Statistics of higher schools.

Year.	Schools.	Professors.		Students.	Expenditure.
		Japanese.	Foreign.		
					Yen.
1890	7	320	15	4,356	433,757.83
1895	7	264	11	4,289	264,901.00
1896	6	277	12	4,231	372,978.00

It is interesting to note the choice of studies made by the students in this branch of the educational system. In 1896 in the six higher schools there were 4,231 students. Of these, 55 were in law courses, 127 in engineering, 1,469 in medicine, and 2,580 in the general courses leading to the university. In 1895 the same preponderance of attendance in general and medical courses was recorded.

4. UNIVERSITIES.

DEVELOPMENT OF THE UNIVERSITY IDEA IN JAPAN.

The most remarkable factor in the Japanese educational system is the university. There are at present two universities—one in Tokyo and another in Kioto. As the latter is not fully developed, we shall limit our investigation to the Imperial Tokyo University. This university grew out of the foreign-language school revived in Tokyo in the restless days of the restoration. Dr. Verbeck made the development of the institution his special care.[2] In 1877 the present university was organized under the name of Tokyo University.[3] From 1877 to 1885 the university had the four departments of law, science, medicine, and literature, and was quite largely on the American plan. In 1886 the university was remodeled, new buildings were built, and a main department of engineering was added. In 1890 a college of agriculture was organized. The university at present consists of a university hall, six colleges, library, botanical garden, astronomical observatory, seaside laboratory, and two hospitals. The university from the first has stood for "original investigation," and may be said to have largely swung over to the German model.[4] It is stated that in 1891 the entrance examinations in Tokyo University were severer than those at Harvard University.[5]

[1] Outlines of Modern Education in Japan, p. 182.

[2] Japanese Education, p. 29; Japan Mail, vol. 18, p. 230.

[3] Outlines of Modern Education in Japan, p. 2.

[4] Japanese Government Report, 1885, p. 44; 1890, p. 65; Imperial Ordinance No. 3, art. 1, sec. 2; Intercourse of United States and Japan, p. 120.

[5] Editorial in Japan Mail, Nov. 7, 1891. Mr. Izawa quoted.

UNIVERSITY CONTROL.

The officers of the university are as follows: (1) President (chokumin), (2) counselors and secretaries (sonin), (3) clerks (hannin). The counselors are appointed by the minister of state for education—two from the faculty of each college. They serve for five years and have the power to determine the curriculum.

In each college of the university there is the following organization: (1) Director (sonin), (2) one chief professor, (3) professors, (4) assistant professors, (5) superintendents of dormitories, and (6) clerks.[1]

PROFESSORS ON VARIOUS FACULTIES.

In 1885 there were 154 professors in the Tokyo University, of whom 11 were foreigners. In 1895 16 foreigners were employed.[2]

The number of professors connected with the various colleges has been as follows:

Year.	Law.	Medicine.	Engineering.	Literature.	Science.	Agriculture.	Total.
1885	26	46	19	28	35	0	154
1895	22	30	35	25	18	31	161

In 1890 there were more foreign instructors than in either 1885 or in 1895. They were scattered among the various faculties of the university, as follows:[3]

College.	Professors.	
	Native.	Foreign.
Law	14	5
Science	29	2
Engineering	31	4
Medicine	73	2
Literature	14	5
Agriculture	41	7
Total	202	25

This table gives prominence to the greatly increased medical faculty in 1890, in comparison with 1885 and 1895, as well as in comparison with the other faculties in 1890. Literature and law each have 19 professors, their faculties being the smallest upon the list.

STUDENTS AND GRADUATES OF TOKYO UNIVERSITY.

The attendance at the university has shown a steady and encouraging increase, where attainment has been the only condition of success. A comparative table will present the facts in a convenient form for examination.[4]

[1] Imperial Ordinance on Universities No. 3.

[2] Japanese Government Report, 1885, p. 44; ibid., 1895, pp. 66-70.

[3] Ibid., 1890, pp. 65-68.

[4] Compiled from Japanese Government Reports, for 1885, p. 44; for 1890, pp. 65-68; for 1895, p. 68; for 1896, p. 79.

Number of students, Tokyo University.

College.	1885.	1890.	1895.	1896.	1897.
University Hall	0	47	105	146	174
Law	217	301	472	551	737
Science	43	77	102	105	105
Engineering	30	106	295	345	385
Medicine	726	188	178	223	297
Literature	129	88	219	248	278
Agriculture	0	485	249	215	232
Elective	73	0	0	0	0
Total	1,218	1,312	1,620	1,833	2,208

An examination of this table reveals the drift of university studies in Japan. In 1885, when the idea was a newer one, the medical college was receiving an abnormally large per cent of the students, it being three times as large as the next largest college. At that date the Science Hall was largely neglected, as was engineering, while literature was not holding its own.

In 1890, the University Hall could be reported with 47 students at work; science and engineering make a gain; literature loses; but the newly established college of agriculture has jumped into first place, while medicine falls to third place. It is noticed that after 1890 "elective studies," which could not be classified in any one college, are no longer reported.

In the next five years university hall more than doubles its workers, law continues to increase and is in the lead by over 200 students, science and engineering now appear nearly as strong as the other colleges, and agriculture has dropped back into a normal position. The most marked increase is in the college of literature, which in 1896 is abreast of the other colleges.

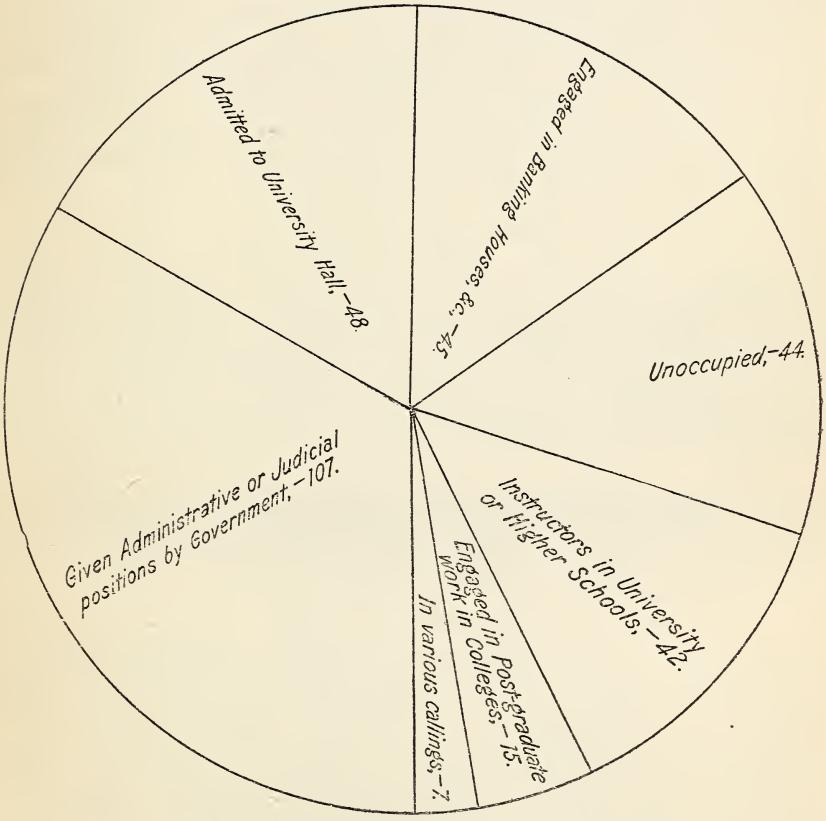
In the last report the total attendance at the university is seen to be 2,208, with law the largest of the colleges. Medicine, literature, and engineering more than maintain their own. The following comparison of the attendance at the university colleges is brought down some two years in advance of the last Government report. It covers the more recent years and deals with the graduates of the various colleges, showing year by year the number who finished various courses.

Per cent of graduates in various courses.

	1894.	1895.	1896.	1897.	1898.	Average.
Law	35	38	31	24	30	31
Medicine	10	11	9	10	9	10
Engineering	19	21	26	28	31	26
Literature	10	11	16	22	18	16
Science	6	8	6	10	7	7
Agriculture	20	11	12	6	4	10
Total	100	100	100	100	100	100

In this comparison of the graduates for five years, including the year 1898, for each 100 students graduated law has furnished 31, engineering 26, literature 16, agriculture 10, medicine 10, and science 7. Engineering makes the most steady gain during the five years, and agriculture seems to be constantly losing. Science is the weakest of them all. The significance of the growth or decline of the technical courses will be referred to in the succeeding division on technical education.

DIAGRAM 7.—*Occupations of the 308 graduates, Imperial University, 1896.*



From the college of law during these five years 211 have graduated from the English law course, 13 from the French, and 40 from the German. The English law course greatly predominates. In the college of literature the following courses, in the order named, have sent out the most graduates: Philosophy, Japanese history, general history, Chinese literature; English literature and German literature have a limited following.

The total number of graduates from the Imperial Tokyo University,

including the 353 of 1898, is 3,405. An analysis of the number contributed by each college is not quite fair, as some of the colleges are of later origin than others. However, the following is the total number graduated from each college of the university from the beginning through 1898: Law has 950 graduates; engineering, 775; medicine, 619; agriculture, 436; literature, 319, and science, 306.[1]

In regard to the question of what becomes of the graduates of the university, the accompanying diagram (No. 7) explains itself.

UNIVERSITY EXPENDITURE.

The university derives its support directly from the National Government. It is the first of the educational department's institutions. The low-grade schools draw their support, on the other hand, from local taxes, etc. In 1885 the total expenditure of the university and its colleges was 366,458.28 yen; in 1895 the amount was 640,269.50 yen. It is instructive to note the comparative expense of the university hall and the various colleges.

Tokyo University expenditure, 1895.[2]

	Yen.
University hall	54,812
College of law	47,463
College of science	69,000
College of engineering	74,094
College of medicine	259,902
College of literature	57,633
College of agriculture	77,365
Total	640,269

The college of medicine absorbed more than three times the amount of money allowed to any other of the colleges of the university. In this regard it follows its German prototype.[3]

THE UNIVERSITY LIBRARY.

The library of the university is for the use of professors and students, and is distinct from the public library of Tokyo. It contains a total of 243,669 volumes. Of these, 136,926 are in the Japanese and Chinese "character," and 106,743 are in English and other foreign languages. The constant growth of the library is attested by the fact that from 1895 to 1896 over 5,000 Japanese and Chinese volumes and over 3,000 foreign books were added to the shelves.[4]

THE CURRICULUM OF THE UNIVERSITY.

Length and variety of courses.—The course of study in university hall is five years in length; in the college of medicine four years' work

[1] Japan Times, July 15, 1898.
[2] Japanese Government Report, 1895, p. 18.
[3] Fr. Paulsen, on German universities, in United States Education Report, 1891-92, vol. 1, p. 273
[4] Japanese Government Report, 1896, pp. 77, 78; Ibid., 1895, p. 131.

is required; in law, however, no length of time is prescribed, but to graduate the student must successfully pass three stated examinations for each course; in the colleges of literature, engineering, science, and agriculture three years is the prescribed period of study.

In university hall the advanced post-graduate work covers essentially the six general subjects for which the colleges stand. The courses of study in the college of law are the following: Law, politics; post-graduate course, elective course. In the college of medicine: Medicine, pharmacy; post-graduate course, course of state medicine, elective course. In the college of engineering: Civil engineering, mechanical engineering, naval architecture, technology of arms, electrical engineering, architecture, applied chemistry, mining and metallurgy; post-graduate course, elective course. In the college of literature courses are offered in philosophy, Japanese literature, Chinese literature, Japanese history, history, philology, English literature, German literature, French literature; post-graduate course, elective course. In the college of science the following courses appear: Mathematics, astronomy, physics, chemistry, zoology and botany, geology; post-graduate course, elective course. The college of agriculture enrolls students in the following courses: Agriculture, agricultural chemistry, forestry, veterinary science; post-graduate course, elective course; and also there is offered a "junior" course in agriculture, forestry, and veterinary science. There are therefore 33 regular courses provided at the colleges of the university in which students may compete for honors, not counting "elective" and "post-graduate" courses.

Degrees.—The highest degree is conferred on those who successfully complete the prescribed work in university hall. No student can pass into university hall until he has finished in the college of his choice. The student is required to spend five years in study after he enters university hall, two of these years as a resident post-graduate of the college at which he finished. At the completion of this five-year course he may secure the degree of hakushi, a doctor's degree. Those who notably distinguish themselves in university hall may be honored with the daihakushi. This honor is conferred by the cabinet only after the council of hakushi (doctors) have voted to recommend the candidate. Daihakushi means literally "great doctor." Upon the completion of the course in one of the colleges the degree of gakushi was formerly conferred on the student.[1]

GENERAL COMMENT.

One who has been thrown into association with Japanese university men is impressed with the intense earnestness with which they essay

[1] Outlines of Modern Education in Japan, p. 117. Government Report, 1895, p. 66; 1896, p. 77; Imperial Ordinance No. 13 (on degrees); No. 3, Arts. II, III, IV (on university). Imperial Ordinances, pp. 151–153.

the work before them. The pride which they take in their university is based upon the thought that as the pinnacle of Japanese education it ranks with many of the great seats of learning in other lands.

Like the German universities, the Imperial Tokyo University is a compact whole. The colleges do not stand apart by themselves; the individuality of the university is strikingly apparent. The observation is more often, "He is a university man;" not, as in England, "He finished at Balliol." The natural tendency of Japanese thought makes for the centralization of university management and life.

The students are drawn from all classes of society, as in America and Germany. There seems to be no special class of men who were predestinated for the university. The Japanese higher education has, however, not been long enough in the field to permeate the nation. If the past thirty years might be taken as a basis, one may look forward to the time in Japan when, as in Scotland, the universities may claim 1 from every 1,000 of the population; or when, as in Scotland, 1 man out of each 500 will have a bona fide university degree.[1]

5. TECHNICAL EDUCATION.

The significance of Japanese technical education is no better seen than in the suggestion seriously advanced in London that England copy the Japanese technical schools. Mrs. Bishop, that experienced traveler, remarked in 1880 that, in the opinion of many competent judges, Tokyo had "the most complete and best-equipped engineering college in the world."[2] The New York Independent remarks: "Japan has had little difficulty in establishing high standards for admission and long terms of professional studies."[2]

NUMBER OF SCIENTIFIC SCHOOLS.

The Japanese possess great adaptability for what is sometimes called "practical education." There were, in 1895, in Japan 89 scientific schools, 1 military academy, 1 naval academy, 1 college of commerce, 1 technical institute, 52 commercial colleges, 8 telegraphic schools, 11 agricultural schools, 9 law colleges, 6 medical colleges, 3 veterinary colleges, and 11 mathematical and engineering colleges.[3]

ENGINEERING COLLEGE OF THE UNIVERSITY.

The highest grade of technical teaching is found in the Tokyo University, and in university hall the most advanced work is naturally done. In 1896 there were 37 engineering students taking the doctor's course in university hall, as compared to 19 scientific and 47 literature students.

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[1] Editorial in Japan Mail, August 22, 1891. Fr. Paulsen, U. S. Education Report, 1891-92, vol. 1, pp. 276, 321.

[2] The Independent, May 12, 1898. Unbeaten Tracks in Japan, vol. 1, p. 188.

[3] Yankees of the East, vol. 2, p. 393.

In the college of engineering nine courses are provided, viz, civil engineering, mechanical engineering, naval architecture, technology of arms, electrical engineering, architecture, applied chemistry, technology of explosives, and mining and metallurgy.[1]

The course of study in the engineering college of the university extends over three years, and in university hall over five years in addition. The 360 recent graduates from the engineering college are distributed among the various courses as follows:

Civil engineering	104
Mechanical engineering	62
Metallurgy and mining	65
Electrical engineering	50
Chemical technology	36
Naval architecture	22
Architecture	21

The engineering courses have grown in popularity very rapidly, graduating now from two to ten fold more students than five years ago.[2]

The attendance at the engineering college has made a steady growth. Being 30 in 1885, 106 in 1890, 295 in 1895, 345 in 1896, it reached 385 in 1897. Civil engineering, mechanical engineering, mining engineering, and electrical engineering, in the order named, claimed the largest classes in 1896.[3]

TECHNICAL SCHOOLS.

Lower-grade schools.—We now turn from the advanced work in the university and its colleges to the schools which are classified in Japan as technical schools. They may be grouped as follows:[4]

	Schools.	Professors.	Students.
Agriculture	10	64	578
Simple agriculture	27	117	1,781
Industry	7	90	1,624
Commerce	11	125	2,917
Simple commerce	5	28	704
Total	60	424	7,604

In addition to these ordinary technical schools, there are 5 institutions of particular note, viz, the higher commercial school, the Tokyo technical school, the Sapporo agricultural school, the Tokyo fine arts school, and the Osaka technical school.

Since Japanese commerce aspired to world-wide proportions no more interesting institution has been developed than the—

Higher commercial school.—It deals chiefly with the higher branches of commerce, and fits its students to enter responsible positions in

[1] Japanese Government Report, 1896, pp. 76-81.
[2] Japan Times, July 21, 1898.
[3] Japanese Government Report, 1896, pp. 77-83.
[4] Ibid., p. 98.

commercial affairs, or to become experts for commercial houses. The arrangement of the course is such as to afford a preparatory, a main, and a post-graduate course. One year is required in the first, three in the second, and one in the third. In the main course special stress is placed on civil law, commercial law, political economy, statistics, financial administration, commercial science, commercial practice, commercial geography, and commercial history and industry.

There were, in 1896, 159 students in the preparatory course and 265 in the main course, or 424 as a total attendance at the higher commercial school. The following year the attendance reached 736.

Tokyo technical school.—The name of this institution does not point out its distinguishing characteristics nor its close relationship to the trades. The courses of study include electrical mechanics, electrical chemistry, industrial economy, industrial hygiene, dyeing, and weaving. The primary object of instruction is to fit men to enter factories as experts. There is a constant and pressing demand for its graduates by manufacturers. Manufacturing in Japan is of comparatively recent date, and it still being in the formative state, these students are largely instrumental in its development. The workshops of this technical school have attracted general attention, for in them the students have done original work of value for the promotion of manufacturing in Japan.[1] Experiments in glazing pottery through the use of coal resulted in the glaziers of Japan changing their baking furnace. A new blue dye, superior to anything known in Japan or Britain, was invented and will be of great value to the weaving industry. The students devised and operated a new method of weaving certain kinds of silk. In the course in mechanics successful results were achieved in testing petroleum engines and determining the horsepower developed under various circumstances. Steam boilers, rollers, and grinding machines were constructed in the workshops.

In connection with the Tokyo technical school there is an apprentice school for the sons of men employed in wood or metal work. Instruction is given in carpentering, joinery, wood modeling, casting, forging, finishing, and work in metal plates. The number of students in the technical school is 249, and in the apprentice school 107.

There are in addition fifteen apprentice schools in various sections of the country, having 1,768 students. They are devoted largely to the study of dyeing, weaving, embroidery, tobacco manufacture, woodwork, lacquer, and porcelain.

Training of technical teachers.—In addition to the training for teaching which students receive in the regular courses of the engineering college, the higher commercial school, and the Tokyo technical school, the Japanese have thought it expedient to have a special institute for training teachers for the lower technical schools. This institute for training technical teachers is under the control of the

[1] Government reports furnish the basis of these facts and those succeeding.

director of the Tokyo technical school. The courses of study partly coincide with the course of the latter institution, but as a whole cover the ground that would naturally be expected. There are 76 students under training to be technical teachers.

Osaka technical school.—Osaka is the Chicago of Japan. It is not strange therefore that in this center of industry there should be established a high-grade technical school. The courses are four years long, but as the school is new it has scarcely reached full development. There are 112 students.

The beginnings of technical education in Japan are found in the elementary schools, where definite instruction is offered in courses in commerce and industry. In the middle schools technical courses are more clearly outlined, and precise work is done. In the higher schools technical instruction of a high order is given. In the colleges of the university and in university hall the student carries his technical education to an advanced stage. Thus from the primary class to the courses for doctor's honors Japan has provided technical education.

In addition to the above, there are the apprentice schools, the special technical schools, and colleges, which afford exceptional additional opportunities.

6. AGRICULTURAL EDUCATION.[1]

While technical education holds an important place in New Japan, and while medical, legal, and literary proficiency are essential to a civilized nation, yet it remains to be said that agricultural education should be a subject of interest to a larger proportion of the population of Japan than any one of the other branches mentioned.

AGRICULTURAL COLLEGE OF THE UNIVERSITY.

In the Imperial University double provision is made for advanced agricultural study in the college of that name and in university hall. In the doctor's course in university hall thirteen students are working for special honors in agriculture. In the college of agriculture there are 215 students, and the college was allowed 82,070 yen for the year's expenses. The students are divided among the courses as follows: Agriculture, 20; agricultural chemistry, 14; forestry, 14; veterinary science, 3; post-graduate courses, 3; junior course, 157.

But after seeing Japanese farming first-hand one has the conviction that Japan needs, besides the few advanced specialists, many students who know the fundamentals and will become the practical leaders of the people in this matter. Agriculture in Japan, with its cramped paddy fields, is not on the surface much like that pursued in the meadows, fields, and plains of America; yet Japan needs the science practically applied more than does a Western land.

[1] From Japanese Government reports.

THE SAPPORO AGRICULTURAL SCHOOL.

This thoroughly equipped institution has long been one of the prominent colleges of Japan. It is designed to give both practical and theoretical training in agriculture and engineering, the attendance at the former course greatly predominating. The farms connected with the school are extensive and valuable. In 1896, 10,110,000 tsubo of land (84,250 acres) were added to the property of the institution. Besides the main courses, which cover four years and which enroll the majority of the students, there are "preparatory" and "agricultural training" courses. The college has 189 students, 18 professors, and graduated in 1896 18 men from the major courses and 20 from the minor. The state provides 12 free scholarships. The regular tuition fee is 15 yen per year for the main courses and 6 yen for the preparatory. This agricultural college has a library of 19,736 volumes.

ELEMENTARY AGRICULTURAL COURSES.

In addition to the advanced courses offered at Tokyo and Sapporo, elementary agricultural courses are offered in the higher elementary schools. The length of the higher elementary course varies in different sections of Japan from two to four years. There has been a great increase in the number of schools which avail themselves of the opportunity to enroll agricultural classes. In 1895 such courses were given in 154 higher elementary schools; in 1896 the number had increased to 216 schools.

There are also a number of agricultural schools of inferior grade which should do an enlarged work as the study of agriculture becomes more and more necessary to the prosperity of Japan.

7. THE EDUCATION SYSTEM AND GOVERNMENT CONTROL.

The department of education was established in 1872 as one of the eight departments of the Imperial Government. The department was controlled by the following officers: Three chokunin, 19 sonin, 72 hannin, and 115 yatoi.[1] These correspond to chairman, directors, clerks, etc.

FINANCIAL RESPONSIBILITY OF THE GOVERNMENT.

The national bureau of education has no responsibility for the support of elementary or middle schools. These derive their support directly from the people of the Fu, Ken, or Gun. The department is responsible, however, not only for its own maintenance, but also for the maintenance of all higher Government education. Taking the figures for 1896–97, the department of education spent 618,020 yen on

[1] Outlines of Modern Education in Japan, p. 8.

the Imperial University, 64,684 yen on the higher normal school, 36,752 yen on the higher normal school for females, 39,796 yen on the higher commercial school, 372,978 yen on the six higher schools, 155,409 yen for technical education, aside from that spent on the university for this purpose, and 38,179 yen for directors of normal schools.[1]

Taking into account the various other institutions which the department controls, its total expenditure for 1896 was 1,738,092 yen. The diet early in 1899 passed a special bill which took from the imperial treasury 10,000,000 yen for the encouragement of primary education. This amount comes from the national resources. The public-school expenditure for Fu and Ken, on the other hand, amounted to 15,526,101 yen. Including the department of education, the expenditure from the national treasury for education in 1897 was 2,945,167 yen, which is more than double the amount spent four years previously. This same year the educational expenditure provided by the people was 18,669,049 yen. Thus the cost of State education has reached the annual figure of over 21,500,000 yen (about $10,500,000 gold).

THE EDUCATIONAL CABINET.

The present organization of the department of state for education provides for an educational minister and one vice-minister. The educational cabinet has seven distinct departments: Treasury, public documents, compilation, teachers' licenses, teachers' pensions, reports, and records. The work is very onerous. It includes: (1) The appointment, promotion, dismissal, and ranking of public school officials; (2) the proper licensing and classifying of teachers; (3) examination of books and charts; (4) composition or compilation of books; (5) adjusting of pensions for teachers or the families of deceased teachers; (6) questions relating to foreigners in the employ of the department; (7) the placing and support of Japanese students in foreign lands; (8) the consideration of petitions sent to the department; and (9) the financial relationships of all these matters to the public treasury.[2]

BUREAU OF SPECIAL SCHOOL AFFAIRS.

Within the department of education are two bureaus. The one on special school affairs has special obligations toward the imperial universities, higher schools, and middle schools. Reference libraries and astronomical laboratories fall under its jurisdiction. It concerns itself with degrees and encourages arts and sciences. The "academy" and scientific societies are its care. Its connection is intimate with these varied and important interests.

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[1] Japanese Government Report, 1890, p. 20; 1896, p. 23.
[2] Imperial ordinance, No. 93.

BUREAU OF GENERAL SCHOOL AFFAIRS.

This bureau has distinct duties to perform in the supervision of government education. It is responsible for the policy pursued in regard to normal schools, elementary schools, higher female schools, kindergartens, popular libraries, popular education, school attendance, school committees, and school directors of cities, towns, and villages. The bureau of general school affairs had responsibilities distinct from those falling to the bureau of special school affairs, as is seen by a careful comparison of the preceding two paragraphs.

SECTION IV.—GOVERNMENT EDUCATION AND THE ADVANCEMENT OF WOMEN.

During the feudal era of Japanese history no provision was made by the State for the education of women. This explains much in regard to the subordinate position which women held in Japanese life. It may be pointed out that the position of women in Japan during the feudal era was in strong contrast to that of the age of chivalry in Europe; and Buddhism and Confucianism are rightly charged by Japanese with being the false teachers of the nation.[1]

That interesting Japanese document, The Great Learning for Women, sets forth authoritatively the former attitude of the nation toward women's education. It says: "The five worst maladies that affect the female mind are indocility, discontent, slander, jealousy, and silliness. Without doubt these five maladies affect seven or eight out of every ten women." And then it proceeds to lay down the law, "Such is the stupidity of her character that it is incumbent on her in every particular to distrust herself and to obey her husband."[2] Such was the intolerable insolence shown toward the mental development of Japanese women in general up to the time of the Restoration, about the middle of the present century.

General Kuroda, head of what was then the colonial department of the Government, advised that a few young women of good families be sent to the United States to be educated. The Emperor approved this plan, and in 1871 they were authorized to go. The Emperor said, among other things, "Women, therefore, have had no position socially, because it was considered that they were without understanding; but if educated and intelligent, they should have due respect."[3] The head of the nation acknowledged that "it was considered that they [women] were without understanding." Yet Japan studiously set on foot a great social revolution in giving women an education. A year after the Emperor had given permission to Japa-

[1] Intercourse of the United States and Japan, p. 179; Outlines of Modern Education in Japan, p. 155.

[2] The Great Learning for Women; see Things Japanese, p. 454–463, and the American Missionary in Japan, p. 176.

[3] Intercourse of the United States and Japan, pp. 180, 181.

nese young women to study in America Marquis Ito, a member of the world's embassy, speaking in San Francisco, said: "By educating our women we hope to insure greater intelligence in future generations. With this end in view, our maidens have already commenced to come to you for their education."[1]

The example of missionary educators in Japan had a powerful influence on the Government in the days when woman's education was a mooted question. As early as 1867 Mrs. Dr. Hepburn was teaching Japanese girls at Yokohama. In 1870 Mrs. Carrothers began her work in Tokyo. Miss Kidder took up Mrs. Hepburn's work in Yokohama, and the Ferris Seminary was established. When the Kobe Girls' College was planted in 1875, the Japanese gave $1,000 toward the first building. This Kobe College for women has had a remarkable history and is the foremost Christian college for women in Japan. There is also a large advanced girls' college in Nagasaki. So great was the interest aroused by missionary teachers and others that the Empress Haruku came forward as a prominent patroness of higher education for Japanese women.[2]

In 1890 there were 51 girls' schools under missionary control, with a total attendance of 4,249.[3]

So keen was the interest taken in woman's education and so radical was the change of opinion in regard to its advisability that the minister of state for education said, in his official report of 1890, "In short, female education is the source from which general education should be diffused over the whole country."[4] The peeresses' school had 364 daughters of the nobility under instruction in 1893, the elementary course of study being six years and the middle course six years.

We must now note the effect of the new educational policy in regard to woman's education. In the elementary school system the obligation has been equally imposed on boys and girls to attend school. The system was organized in 1872, and the national education of women began. In 1885 there were 942,786 girls in the common schools; in 1890 the number reached 1,067,699, and in 1895 1,459,972 Japanese girls were receiving instruction in the elementary branches. This meant a very great advance, and though by itself it is encouraging, yet the following comparison shows that only a beginning had been made:

Of the total number of girls who should have been in school in 1890, but 31.13 per cent were in attendance; in 1895 the per cent had risen to 43.87, and in 1896 to 47.54 per cent, so that in 1896 still not one-half of those girls who should have been in school, under the law, were there. The difficulty of making the people actually appreciate

[1] Japanese in America, p. 14.
[2] History of Missions in Japan, Verbeck, pp. 45 and 143; Unbeaten Tracks in Japan, vol. 2, p. 333.
[3] An American Missionary in Japan, p. 182.
[4] Japanese Government Report, 1890, pp. 45, 46.

the value of female education is strikingly shown by the fact that in 1896 79 per cent of the boys of school age were under instruction, but only 47.54 per cent of the girls.

In the 47 normal schools of Japan male teachers and male students greatly predominate. In 1896 there were 5,609 men and 738 women studying to be teachers. An interesting examination may be made of the higher female normal school, an institution established by the Government for advanced work. This female normal school is in four distinct sections: (1) the higher normal school proper; (2) a higher female school; (3) an elementary school; and (4) a kindergarten. The result of this plan is that the students in the advanced normal school get regular practical training in teaching in the other three schools simultaneously with their theoretical instruction. The total number of pupils is 1,094, and they are divided as follows: [1]

Higher female normal school (main course)	132
Higher female school	354
Elementary female school	393
Kindergarten	215

The opportunity was given Japanese women to take advantage of higher government education if they so desired, and the higher female schools were established for the purpose. The following table has been compiled by the writer to show the comparative status of these institutions: [2]

Higher female schools.

Year.	Schools.			Teachers.				Students.
	Government.	Private.	Total.	Native men.	Native women.	Foreigners.	Total.	
1885	9	(a)	9	22	50	(a)	72	616
1890	8	22	30	139	153	19	311	3,115
1895	8	6	14	82	92		173	2,575

a Not reported.

An examination of the tabular statement shows that between 1885 and 1890 the number of private higher schools for women greatly increased, and from 1890 to 1895 they greatly decreased. But the Government institutions maintained a steady growth in teaching force and young women in attendance. In 1895 there were over 2,500 young women in the 14 higher schools established for them. It is noticed that in 1890, 19 foreign teachers are reported, but none in 1895. The foreign teachers were women, and in 1893 Japanese teachers were substituted for them.

It is interesting to inquire into the course of study pursued in the higher schools for women. We find that the course extends over five

[1] Japanese Government Report, 1896, pp. 60–64.
[2] Ibid., 1885, pp. 52, 53; 1890, pp, 64, 65; 1895, pp. 62–64.

years, with twenty-four hours of required work each week. The subjects of study may be summarized as follows:[1]

Morals	1 hour a week for 5 years.
Japanese language	4 hours a week for 5 years.
English language	6 hours a week for 5 years.
Mathematics and science	3 hours a week for 4 years, 2 hours for 1 year.
Geography and history	2 hours a week for 4 years.
Household management	4 hours a week for 3 years. 6 hours a week for 1 year. 8 hours a week for 1 year.
Writing and drawing	3 hours a week for 3 years. 2 hours a week for 2 years.
Singing	2 hours a week for 4 years. 1 hour a week for 1 year.
Gymnastics	2½ hours a week for 5 years.

It must be granted that, considering the former status in Japan of education for women, these efforts to provide modern education were painstaking and fruitful. But there is still much to be accomplished. The minister of state for education wrote, in 1885, that "in general, female education was not making satisfactory progress."[2] In 1890 he again called attention to the matter, saying: "If those concerned in educational matters were to direct their efforts to the development of female education, a great and general improvement could be reasonably looked for in a few years."[3]

Although the education of women in Japan is now and is to continue one of the great questions to be reckoned with in forecasting the Japan of the future, yet it is fair to notice the criticisms that have been made on the effect of Western schemes of education.

A condensed statement in the Japan Mail seems to present the criticisms of the opposition: "Vitiated tastes, loss of refinement of manner, undue forwardness, conceit, unfitness for the duties of married life, and in some cases looseness of morals are alleged to be the fruits of modern training."[4] It is granted that, in every country, the school may fail to make a philosopher of a dunce or to make a Dorcas of a Deborah; it undoubtedly has "turned" many heads, male as well as female; but judging the school by its average product, it does not deserve the sweeping criticism quoted. Western education in Japan inevitably changes the social status of women; with this change comes the overturn of many former customs. A new day is coming in Japan different from that which Professor Chamberlin described: "At the present moment the greatest duchess or marchioness in the land is still her husband's drudge. She fetches and carries for him; bows down humbly in the hall when her lord sallies forth; waits upon him at his meals."[5] There must be a readjustment to the better state of

[1] Outlines of Modern Education in Japan, pp. 155-159.
[2] Japanese Government Report, 1885, p. 53.
[3] Ibid., 1890, pp. 45, 46.
[4] Japan Mail, October 10, 1891.
[5] Quoted in American Missionary in Japan, p. 176.

affairs, but not the loss of a single essential element in woman's strength or usefulness to the state, to the family, or to herself.

One who has given more than a superficial glance to woman's education finds much to praise in the effort now making in Japan. Miss Bacon's picture was drawn by one who shared the life of the Japanese girls in a prominent school.

The objections made to the more advanced education of women in Japan have a striking similarity to those formerly so insisted on in America and England. The best answer to them is the quiet answer which education, year by year, is itself giving. Criticism serves to prune the educational tree, but does not cut it down. Each year of its growth means larger and better fruitage.

CHAPTER VII.

CLASSIFICATION AND PROMOTION OF PUPILS.

CONTENTS.—The St. Louis system, as set forth in the St. Louis School Reports, 1869-1874—The Elizabeth (N. J.) plan of grading, by Supt. Wm. J. Shearer—The Seattle plan of promotion and classification, by Supt. Frank J. Barnard—Plan of the North-side schools of Denver, by Supt. J. H. Van Sickle—Promotion in the grammar schools of Cambridge (Mass.), by Supt. Francis Cogswell—Report on the grading and promotion of pupils, by John T. Prince, agent of the Massachusetts State Board of Education.

I.—THE DEVELOPMENT OF THE SHORT-INTERVAL SYSTEM IN ST. LOUIS.[1]

FROM THE ST. LOUIS SCHOOL REPORT OF 1868–69. BY W. T. HARRIS.

Advantages of the graded system.

By the graded system I understand that in which the course of study is carefully arranged in accordance with the natural order of succession in the several branches; lowest in the course, the most elementary studies, followed by those that rank next in complexity, and unfold directly from the preceding, each study so graded as to advance in due proportion to all the others. At a certain stage of the pupil's progress in reading he is allowed to take up arithmetic; soon after that, geography, then grammar, then history. No branch of instruction is to come in before the requisite advance is made in those studies which are introductory to it. With this careful arrangement of the course of study there is also proper classification of pupils. The gradation of the course of study makes this possible. All pupils at a certain stage of advancement in a given branch are in the same class throughout all the others. When the course of study and classification is not thus fixed, there is more or less abnormal culture going on; some pupils taking up studies without learning the rudimentary presuppositions; some pupils studying Latin and algebra before they know English grammar and ordinary arithmetic. The regularity and consequent simplicity introduced into the school system by gradation and classification increases the power of the teacher incalculably. Instead of infinitesimal subdivisions of his school, amounting almost to the making of a class for each individual in each branch, and the consequent reduction of the teacher to the office of private tutor to each pupil, in the graded-school system a few classes comprise all the pupils of the school. The consequence is that the corps of teachers divide their labor, each taking two classes nearly of the same grade, and are able to concentrate all their energies on one point. The class can have thirty to forty minutes' time for recitation, whereas, if unclassified, each individual could get two minutes, more or less. But the teacher trains all to the habit of close attention throughout the recitation, so that each individual not only gets

[1] From the St. Louis school reports issued during the superintendency of W. T. Harris.

his thirty minutes as certainly as though he were the sole member of the class, but he gets far more. The stimulating effect of the exhibition afforded by the struggles of his fellows is the most valuable part. He sees his fellow pupils all striving for the same goal as himself; the lessons of their failures and success give him insight into his own, and deepen indefinitely the impression made by his private study in preparing his lessons. The complete dissipation of all the energy and faculty of the teacher by the nonclassified scheme renders him unable to produce any grand effect with his school, as a whole, and thus each pupil loses that important culture derived from mingling his individuality with that of the whole, subordinating his own caprices to the will of the community, and finding his pleasure in the effect produced by the organism of which he is a member.

These advantages of the graded-school system are obvious, and the result of their discovery and application is that all celebrated schools, both public and private, are graded in accordance with this scheme. No system of schools, supervised by one head, is possible without such grading—the results of one teacher could never be compared with those of another.

Disadvantages of the graded system.

On the other hand, there is a defect in the graded system which, though not often named and defined by educators, is nevertheless felt by the community at large. What I refer to is not the usual objection made—"that under the system named the work of the schoolroom becomes monotonous and like a treadmill; that it serves as a kind of Procrustean bed to hold back the talented pupil, while it does not benefit his dull companion"—for this can be avoided very easily by a system of promotions; the pupil is stimulated and encouraged by this. The obverse side is the worst—the discouragement produced by placing pupils in lower classes is the disastrous phase of the subject. The pupil who tries his best and then fails is deeply injured, and is apt to endeavor to preserve his self-respect by some sort of subterfuge. He accuses his teacher of partiality, it may be, or attributes the good success of his companions to the assistance of others. The root of all bitterness is loss of self-respect; the man or child who goes about thinking himself shut out from participation in the highest by his own natural incapacity is like one inclosed in a tomb while yet living. It is easy to see that this is the source of most of the difficulties which the graded-school system has to meet and overcome.

In the first place, there is difference in capacity; the temperaments differ; the relative mental endowments differ; tastes differ. And yet, in the graded school all are to be compared with the same standard. It is not surprising that evil consequences arise. The pupil is "sent over his course" again and again, falling back from class to class. He becomes stolid and lifeless, and reminds one never so much of the burnt-out coal in the grate which we name a "clinker." The teacher loses all patience: "The majority of the class can not be kept back on your account alone."

The closer the grading the better the classification is, and the fewer the "clinkers" developed; i. e., if the classification is made right at the beginning. For where widely different attainments meet in the same class it must needs happen that some will find the lesson that is adapted to the average of the class too easy, others will find it too hard. On the other hand, the severity of the teacher may contribute largely to swell the unfortunate class of pupils referred to. While severity may at times arouse latent energy, it as frequently closes up entirely that unfolding of the faculties which requires a genial, sunshiny surrounding as much as does the bloom of a plant.

When municipal governments are expending large sums for infirmaries and asylums, realizing the Christian humanitarian principle in the State, it is certainly

inconsistent to neglect a class of pupils and allow them to make shipwreck of their educational hopes. And yet it must be confessed that a large percentum of the pupils in our graded schools, after falling behind their classes, get discouraged and go, a few to private schools, most of them into spheres of manual labor or mercantile business, and forever renounce an education that would fit them to rise to the higher walks of life. Society recognizes its duty to care specially for all who are unable to direct their own activity in the regular channels of industry. It provides for the poor, nurses the indigent sick in its hospitals, and furnishes a retreat for its insane. In order that the inducement to educate the children may be as strong as possible for the parent, he is taxed by the laws for the support of schools, in proportion to his estate, and free schools are opened for all, rich and poor. But this is not enough. The school system must be made effective in the highest sense, and special provision must be made for weak or abnormal minds. The educational system should have in it the means of correcting any tendencies in the wrong direction.

The remedy—A special school.

The evils here spoken of may be remedied only by great care on the part of the teacher as to the habits or methods of study which the pupil has. For the reason that the evil becomes serious only in those grades as high as the grammar school, and is manifested chiefly in the class that passes from the district schools to the high school, it is clear that special classes should be made for such pupils. The regular class can not be kept back for them, nor will it do to degrade them to a lower. Accordingly, when the class is promoted as a whole on examination, one part can go to the high school, one part to the special school, where skillful teachers supervise and correct the habits of study, taking a slow course in the higher branches. Gradually the mental self-reliance increases, and the ability to overcome the full-length lesson is acquired. The pupil is then to be transferred to the high school. On this basis, and to test the truth of this theory, the board have, by a recent act (at the August meeting, 1869), established the "intermediate school." Its results will furnish data on which safe future action may be based.[1]

Public schools have generally been noted for thoroughness. This has been claimed as their greatest merit. Certain it is that very high percentages are required of pupils before promoting them to the next higher grade in the course. It has not been sufficiently considered that there is a limit to the thoroughness desirable; that the time consumed in securing such high standards of thoroughness would have been better used by the pupil in mastering higher methods. Instead of solving the problem of higher arithmetic by arithmetical methods, he could more wisely have "flanked" them through algebra and trigonometry, and these latter studies would have opened up to him new worlds in mathematics. Instead of pursuing topographical geography to exhaustive minuteness, his time would be better employed in mastering physical and commercial geography; and so, instead of exhausting a "compendious treatise on English grammar," after acquiring its general outlines, a few months' study of Latin would give him the culture requisite to make a grammar for himself.

[1]At the date this report goes to press the experiment has progressed far enough to justify its establishment. Of the 80 pupils admitted, the greater number were those from the district schools who failed to make the requisite per cent to enter the high school; some were from private schools, and had made more or less progress in the higher English branches or the languages. The result thus far has been such as to encourage the most sanguine hopes. Most were found to have bad habits of study, and these have been improved surprisingly; others were good scholars, but had not been quite long enough in the district schools to fit them for the high school. This class has saved a year's study in the grammar schools, thus seeming to prove that the standard of perfection in the lower branches was unnecessarily high. The name "intermediate school" is not appropriate, inasmuch as it does not convey a correct impression regarding the character of the institution.

This point is the most important one involved in the present discussion. To what extent should thoroughness be relied on and to what extent should the advance be made by means of higher methods? Have not public schools held too exclusively to the former appliance, and thereby engendered the defect to which attention is here called? Private schools sometimes rely too exclusivsly on the latter appliance, and in that case tend to produce smatterers. The true course. it seems, should use both appliances in their due proportion, and this can be determined by experience. This due proportion will be found when no pupil is kept using a lower method of solution after he is able readily to acquire the higher one. It is clear that too much attention can not be given to the formation of correct habits of study. But the discussion of the dangerous tendencies of the graded system should not lead one to suppose for a moment that the evils balance the good; for even where they are most injurious the positive benefits of grading predominate. In fact, most of what are called the evils of graded schools result from the lack of sufficient grading rather than from too much of it.

FROM THE ST. LOUIS SCHOOL REPORT OF 1871–72, BY W. T. HARRIS, SUPERINTENDENT.

The high-school course is divided into four classes, the work laid down for each occupying one year in its accomplishment. The fact that each high-school class is expected to begin its work in September and complete it in June indicates at once the condition of things that I have already alluded to in this report. Such a course of study is "nailed to the calendar," and its progress is rigid and determined by the lapse of time and not by the progress of the pupil. If a pupil is sick and unable to attend school for ten weeks, he finds, on his return, that there is no class just ready to admit him. The class which he left is now ten weeks in advance of him, and to make up this work and at the same time to do the regular work of the class is too difficult. If it were possible, it would prove a superiority of individual work over work in a class. The pupil is probably obliged to enter the next class below, but this class is thirty weeks behind his present acquirements, and his ten weeks' sickness has thus cost him a year's progress. On entering the lower class, however, he finds himself going over familiar ground and gets careless in his work. By the time his present class arrives at the work from which he was broken off by sickness the previous year he has acquired a loose habit of study, and is likely to fail on the first difficult study that he encounters. Two failures are pretty sure to complete his discouragement and cause him to leave school. Another case: A pupil, for some reason, is not quite able at the close of the year to pass the standard for admission to the next class, and is accordingly obliged to join the class below. He is set back just one year at once. He might have lacked five weeks' study or ten weeks' study—scarcely more than this—of completing the work of his class. But for this he is obliged to lose nearly a year more than was really necessary. It must be remembered that these are not isolated instances, but that the number of each class who ought to be separated, for one reason or another, from the part of the class that does the work of the grade thoroughly is about one-third of the entire number. In order to avoid this evil of putting back pupils, there is a strong temptation to let them pass on at a low standard. The consequence of such a course is that each class is impeded in its work by the presence of a number who are not equal to the performance of their tasks.

These evils are not confined to the classes of the high school; they extend to the higher classes of the district schools. Inasmuch as the examination for admission to the high school is to occur in June, the first grade's work of the district school must be completed at that time, and hence must be commenced in September of each year. This fact in turn influences the time of beginning and completing the work of the second grade. The tendency of all this is to produce a system of classification throughout the entire course of the district schools similar to that in the high school. In this case classes would follow each other at intervals of a

year, and the difficulty of properly assigning those who should be classified in grades between those established exists throughout the entire system. In many sections of the country—in Ohio and New York, for example—this very practice prevails. A promotion takes place once or twice a year, on occasion of a general written examination by the superintendent. Those who "pass" go on; those who fail fall back to the lower class or leave school altogether. Such a system of grading and classification must be regarded as only one step above the system of unclassified schools. In our St. Louis schools the classification is so arranged in the lower grades of the district schools that classes follow each other at intervals of about six weeks. Should it be necessary to put back a pupil to a lower class. he finds it at just that stage of progress which will enable him to review and strengthen those portions of his course that need it. But this system allows of another advantage. As the highest class loses numbers by promotion, graduation, or otherwise, its ranks are filled with the best pupils from the next lower class. The latter is again recruited by promotion of the best from the next one below it. This process is continued to the lowest class in school. After such a promotion has been made the account stands thus: Each class has sent forward perhaps one-third of its pupils (the best ones) to the next one above it, and has received the best third of the pupils from the class below. There has been no degradation of pupils. What can be said is that two-thirds of each class (including all the fair and middling scholars) were left, and a few of the foremost in rank of those below them admitted with them. Within less than a half-year's work the studious and brilliant pupils will work up to the top of the class. There will always be differences of native power as well as of previous acquirement. Before a half a year has elapsed the two-thirds of a given class who pass for "fair and middling" scholars will be overtaken and, in some instances, surpassed by the brilliant pupils admitted from the lower class. A change of the kind I have mentioned, amounting to a readjustment of all the classes, is desirable as often as four times a year. If made, it will entirely prevent the collection, in any one class, of the dull and incapable scholars.

These, for the most part, are pupils who have not become thoroughly aroused, or, more frequently, such as have become discouraged by degradation in rank. Their defect is not primarily intellectual, but moral; they have feeble wills. It is very rare that a pupil has so dull an intellect that he can not, if he possess a resolute will, accomplish any intellectual feat whatever by the aid of industry alone. Those who fail do so through lack of courage or of perseverance. This furnishes the strongest ground of all against manipulating the system of classification in such a manner as to make those who are not promoted feel that they are degraded. By the method here described I think the minimum of discouragement is reached. Two-thirds or more of the class—enough to preserve the identity of the class—remain after any reclassification, and, as this embraces many fair scholars, none need feel that they have been slighted. The change made has elevated the fair in rank to the highest rank in class and those who were poor to the rank of fair—at least for a time. Stimulated by this, they frequently increase in self-respect and develop powers that had hitherto lain dormant.

In what has been said the danger of collecting many poor pupils in the same class has been indicated. Our experiments have, I think, fully demonstrated that such a system is pernicious. Some years ago I recommended the establishment of an intermediate school for the purpose of classifying those pupils who fell short of the standard for admission to the high school and yet who were so far advanced as to be greatly injured by setting back a year, and classifying them with pupils of the next grade. The experiment was continued for two years. It was found that the so-called brilliant pupils, those full of courage and resolution, even if admitted on a very low per cent (I admitted on trial some of this character who made only from 30 to 40 per cent), were soon able to work their way to the top of their

classes and to acquit themselves creditably. But those of enfeebled wills, having lost self-confidence or having become listless through disgust, were very slow in manifesting improvement. The practice of giving them short lessons was tried with some success, but a cloud hung over them and hangs over them still. (Some of them have been two years and a half in getting through one year's work of the high-school course, and are not able yet to pass their examination at the time this report goes to press, March, 1873.) I think that many of these pupils would have done better if they had been reclassified periodically, in the manner described, with fresh and ambitious pupils pushing up from below. I once compared these pupils to "clinkers," or pieces of coal that do not readily kindle except in a very hot fire, and generally go out before all the carbon is consumed. The "clinkers" are found in our bituminous coal, and need to be burned twice in a hot fire. These pupils, so far as they have any influence, tend to dampen the ardor of others.

Their atmosphere is contagious, and they discourage the teacher and the other pupils when they are numerous in any one class. By the plan of frequent reclassification throughout the school, from the lowest class to the highest, is prevented the collection of these unfortunate pupils in one class. But if reclassification is carried on in any of the higher schools alone the result is to sift down this demoralized element of the school into a class by itself. Hence, whenever any change is made in the higher schools, a promotion of the brilliant pupils should be made from the district schools to compensate. (The board changed the rule for admission to the high school in February, 1873, so as to give an opportunity for the examination of applicants for admission quarterly. This will accommodate the district schools perfectly. There may be enough classes found in the first and second grades to reduce the interval between them to one quarter. Moreover, in the high school the divisions of any one class may be separated at intervals of the same length. At least this may be done with the classes of the first and second years of the high-school course.) * * *

There is needed some general plan by which the course of study in our higher grades may be made more elastic, better adapted to the capacities of pupils. The constant danger of all graded systems is that they are liable to become Procrustes' beds. Take the work laid out for any class in our schools—it should be found exactly adapted to the capacities of the average pupil of the grade. The tendency of the teacher of energy and ability is to raise this standard up to what the best pupils can do and to bring sufficient pressure upon the pupils of average or less than average ability to compel them to keep up. In many instances pupils are overworked by this process. Doubtless it more frequently occurs that the teacher grades her lessons by what the poor scholars can do, and the best ones are not given enough to try their powers. In the lower grades this difficulty is not serious, for the reason that the work of reclassification goes on more actively. In the higher grades it is more serious, and there should be some modification of the course of study by which pupils whose rank in the regular course is above a certain per cent should have the privilege of electing some one branch of study which they may carry on in the class above.

FROM THE ST. LOUIS SCHOOL REPORT OF 1871–72, BY W. T. HARRIS, SUPERINTENDENT.

Whenever the sizes of the schools have been such as to admit of it, a system of classification has been introduced, and the immediate consequences have been: (*a*) great increase in the length of recitation; (*b*) far more thoroughness in the discussion of the lesson, sifting the different statements, and probing the meaning of the same; (*c*) great stimulation of the mental activity of the pupil through trial and competition with other members of his class. These three advantages can scarcely be overestimated. They multiply the teacher's power just as organization improves the strength of an army. In the unclassified system the teacher

is only a private tutor, and the fewer pupils he has the better for each and all. In the classified system the proper quota of pupils is a potent instrument in the hands of the teacher, and he uses the whole class to correct and stimulate each one in it. The lesson, as recited and discussed by and before the class, gets all its phases stated, restated, and criticized as never could be done in the case of a single pupil with a private tutor. The presence of the class arouses the teacher to a high pitch of energy, and each individual in the class is excited by the presence of the teacher and the rest of the class. These circumstances account for the high estimation in which the graded system is everywhere held. So many good things have a tendency to hide some very serious defects. Such defects, already alluded to in speaking of the high school, will be discussed in a summary manner here.

The tendency of all classification is to unite pupils of widely different attainments. Especially is this found in the small schools. The consequence is that the lesson is too long for some and too short for others. The best pupils in the class are not tried to the full extent of their ability. They consequently lose, in some degree, the discipline which they should gain. The poorest pupils of the class are strained to the utmost. They are dragged, as it were, over the ground without having time to digest it as they should. This develops the result that the overworked pupils are frequently discouraged and drop out of the class and likely enough out of the school altogether. In large systems of schools, where classification is very perfect, the evil here spoken of need not occur to a serious degree. But it does occur very frequently from the fact that the course of study is laid out in grades (ten, more or less, in number), and all pupils are classified or graded so that each belongs to one of these grades. All pupils in the grade must be in the same degree of advancement at about the same time. The result is that the school is classified in such a way that there are ten classes separated by intervals of from five to ten months' work. Then promotion is made from one grade to another at set times, annually or semiannually. All who pass the examination commence the work of the next grade; all who do not, continue until the next examination in the work of the grade through which they have just passed.

The effect of this is well known to all teachers who have made experiments in this direction. Both parent and pupil feel very keenly the time lost. The pupil must have been over much of the work of the year, perhaps nine-tenths or three-quarters, or perhaps only one-half of it. Yet what he has done entitles him to an advanced position over his fellow-pupils of the next class below him. If he returns to school after being thrust back a year for his lack of less than half a year, he appears in the ranks of a class who were a year's work behind him. He has lost his ambition; he is some time in the class before they come to work that is difficult enough to arouse him to the exertion of his full energies. Meanwhile he has lost his discipline for hard study, and he is very likely to break down a second time on the work of the year. A second failure for promotion is nearly sure to cause withdrawal from school. The parent has lost faith in the talent of his child and puts him into business or apprentices him to a trade. The youth has lost his own confidence in himself, and is stunted for intellectual growth for the rest of his life.

Was there any advantage in this kind of grading? How could it otherwise have transpired? Instead of the Procrustean bed of grades, the pupils should have been classified into classes of thirty or less each. These classes in all large schools would be separated by intervals of about five weeks' work. As often as these classes, any of them, become too small by the withdrawal of pupils or too large by the assignment to them of newcomers, there should be a new formation of classes. The best pupils of one class are to be sent up to the next, the best from the next below are to be promoted and joined with the pupils remaining. Those not promoted are now united with the best of the class that is five weeks' work behind them. The degradation is scarcely felt. It is rather called, in both cases,

a promotion of the best ones, not a degrading of the poorest. It is a process of cutting up the school into classes anew, and, as a matter of fact, the pupils need not have changed rooms to any very great extent.

A set time for examination and promotion is injurious just in the ratio of its infrequency. Annual examinations for promotion and a discontinuance of promotions at other times is an extremely pernicious system, and occasions serious injury to the higher grades of our schools. It is evident that the further advanced the pupil the more unfavorably will it affect him; and yet in our schools throughout the country the system is so arranged that this Procrustean device applies more especially to the advanced pupils. In how many of our cities is there promotion to the high school oftener than once per year? What becomes of the pupils who lack 1 per centum of making the standard required? Are they not sent over the work of the highest grade of the grammar schools again, and thus made to occupy a year in doing what they might do in one-fourth of that time? And do they not leave school at this crisis more than at any other time in the whole course? Are not our high schools arranged in grades or classes just one year apart in their work? And is all this necessary? Not, certainly, where there are pupils enough to make two or more divisions of thirty pupils each. If the pupils from the highest grade of the grammar schools had been classified according to their rank in the examination, the first thirty would have formed the highest division of the high-school work, the next thirty the second division, and so through those who had made a reasonable standard. Then would have come the highest thirty pupils in rank of those not admitted, who should be admitted to a central school and conditioned to five weeks' work on the studies of the first grade of the grammar school, and then examined again; the next thirty to a longer period, and so on. Pupils thrown back five weeks, and then classified with their own fellows who had been unsuccessful, would find the hardship a very trivial one, and would scarcely think of leaving school.

For schools where the number in any grade fell short of the requisite thirty wherewith to form a new division, of course this plan of subdivision could not be carried out. But so far as the first [highest] grade of the grammar school is concerned this would rarely happen, and still less likely would it occur with classes below the highest grade.

The principle is clearly this: Not a Procrustean bed of grades on which the school is to be stretched so as to reduce the number of grades of advancement to ten or any other special number, but a thorough classification of all the pupils into classes on a certain quota as a basis, whether this be thirty or twenty-five, or whatever other number is considered the best. The endeavor will be to have the classes separated by as small an interval as possible; but four, six, or even ten weeks' work is small enough for all practical purposes; and in order to make this arrangement uniform the pupils in upper grades, when too few to form classes with the required quota, should be brought together in central schools; and this principle should be applied as far as possible; if the highest grade in the high school consisted of sixty pupils or more, the division of it into two classes would be required.

This process of continual readjustment of classification in our schools will render the whole system elastic and mobile. Like the current of a river, there will be everywhere forward motion—in the middle the current is more rapid, at the sides the current flows more slowly. The work of the grade laid down for a year's study will be accomplished in three or three and a half quarters by the brightest; by the dullest and slowest in five quarters. There will be no temptation to push on a slow pupil or drag him beyond his powers; no temptation to promote a pupil to a new grade's work before thoroughly completing what is below him.

By this plan would be checked a pernicious system of holding back pupils from

examination for the high school, simply for the purpose of gaining a reputation for the school through the high per cent of its pupils in the competitive examination.

Doubtless there is a certain degree of thoroughness requisite in the lower branches before the pupil can profitably take up the studies of the next higher grade. After attaining this per cent it is possible to keep the pupil drilling over the lower work, in order to secure a certain mechanical thoroughness, so long as to waste much time that might be better expended for the pupil's culture and growth on the higher studies.

There are still some points on which doubts may rest. For example, it may be urged that this system would cause a collection of the dull and stupid pupils into classes by themselves, a deplorable result. But this is one of the evils which this system is adapted to correct. The fact that the best pupils from below are allowed to rise through the masses above them as fast as their ability can carry them is surely not likely to prevent the slower pupils, who are their companions, from exerting all their energies and making considerable progress. The stream of bright pupils from below is inexhaustible. From the primary grades it ascends, continually passing fixed points or points that move on more slowly. In every class there will be its quota of bright pupils, some leading the class, and some just sustaining themselves in it, having recently joined it. But in the old system all the bright pupils had attained the top of the class and the dull ones had fallen hopelessly to the bottom long before the needed reclassification took place.

Another may urge that this system causes so rapid a change from teacher to teacher that the very important personal influence of the teacher is materially impaired. But under this system in the higher grades the pupil would hardly change teachers oftener than once or twice per year, and a change as often as this is desirable for the healthy individual culture of the child. The school should not be a family influence exclusively. It is the transition to civil society; consequently the pupil must change teachers often enough to correct any one-sided tendencies of social culture that he may be liable to acquire from the individual teacher. For it must be remembered that reclassification of a whole school of 700 pupils, distributed through 12 rooms, does not imply a change of teachers on a part of more than one-sixth of the pupils, even when one-third of the best pupils in each class are promoted to the next higher. Each teacher having two classes (or, in the lower grades, three classes) will have one-third of the pupils from her advanced class promoted to the lower class in the next room above; she will likewise receive from the next room below one-third of the pupils from the advanced class there. In her own room, one-third of the pupils will be promoted from her second to her first class, but will still remain under the same teacher. In fact, she will have promoted to the next room one-sixth of her pupils, and have received one sixth from the next lower room—that is to say, in case one-third is promoted from each class; but, practically, this is the maximum, and in ordinary cases a less proportion of the class will be transferred. If reclassification is instituted four times per year, and on each occasion one-sixth of the pupils are promoted to the next room, it will follow that each pupil will be taught one year and a half by the same teacher. But, as frequent transfer is necessary in some schools, to make up for depletion of pupils in higher grades, it will happen that this period will be reduced one-half or two-thirds.

In small towns where the high-school classes do not number over thirty pupils each, such subdivision as I have here described can not be accomplished. But in such places there is ample occasion to apply this system to the district schools, which frequently suffer more than the high school from the wide intervals between the higher classes. Transfer of the same to the high school as a preparatory class, or to intermediate schools, will be found a salutary measure. Hence, the Cincinnati

plan of intermediate schools is an excellent one for purposes of classification. In small towns not only the regular high-school pupils are to be sent to the central institution, but also the higher grades of the district schools whenever the classes are too small for economical instruction. These may form a "preparatory department" and can be graded into divisions of thirty pupils each, in such a manner that there is an interval of ten weeks or less between each and the next higher. But whenever transfer and promotion take place in this school there should be at the same time promotion from the grammar school in order to prevent the isolation of the dull pupils in the lowest class of the school; when the best pupils are promoted from any one division their places should be made good by the best pupils promoted from the class below. The psychological effect of successful competition has been alluded to before. The moderate scholars of a higher class may find themselves at an advantage as compared with the best pupils newly promoted from the class below, and are likely to take fresh courage.

The question may arise, Do these pupils who are promoted from one class to the next omit that portion of their studies gone over in the interval of time between the two classes? It is expected that this will be taken up by a review of the ground embraced in the mentioned interval.

FROM THE ST. LOUIS SCHOOL REPORT OF 1872–73, BY W. T. HARRIS, SUPERINTENDENT.

Last year I alluded to our plan of promotion from class to class, and to the elasticity that prevails here in regard to grading. Briefly stated, the theory of our plan is as follows:

1. There is great difference among pupils in the capacity to learn. Children who enter school at 8 years of age, can, on an average, make nearly double the progress in primary work that pupils of 5 years of age can make. Bright, nervous children will make far more rapid progress than children who are stolid and dull.

2. The school must provide for this difference in rates of progress by frequent reclassification; otherwise the school will become a lifeless machine, a Procrustean bed. It must be understood that when bright scholars are kept back for dull ones they acquire loose, careless habits of study; and when pupils of slower temperaments are strained to keep pace with quick and bright ones they become discouraged and demoralized.

3. Besides difference in temperament, there is difference in regard to amount and regularity of attendance upon school. Some pupils are detained from school by sickness; some by the necessity of working for a living. Three months a year is all that can be afforded by the poorest people after the child is able to work. New arrivals in the city or departures from the city occasion a fragmentary participation in the privileges of the school. Moreover, it is a singular fact that nearly one-half of the youngest pupils begin their school life in the spring, having arrived at school age too late the previous fall to enter before the inclement weather sets in. The number of pupils belonging to the school at any one time in St. Louis is two-thirds of the entire number enrolled for the year. Hence the accession and loss of pupils during the year equal 50 per cent, or one-half of the average number belonging to school. It should be stated that the statistics of a large majority of other cities show a greater fluctuation than this. The general character of this accession and loss may be stated thus: In the lower grades there is continual accession, in the upper grades continual withdrawal of pupils.

4. Combining these two inequalities or differences with a view to restoring equilibrium—the continually developing difference of rate of progress in studies between pupils of the same class with the continually developing inequality of size of classes (in upper grades decreasing, in the lower grades increasing in size)—it is evident that provision must be made for promotion of the pupils who make

rapid progress, and that this promotion will at the same time restore the proper quota of pupils to the teachers of the higher grades. A promotion made once in ten weeks, or once in a "quarter" or "term," will generally suffice to keep the school in a state of equilibrium.

5. It is clear that frequent promotion should not be made by classes. The few best ones in the class should be united with the class above—it will seem a reward or a recognition of their excellence. After such promotion has been made through all or nearly all of the classes from the lowest, each class will find itself composed of its fair, average, and poor scholars, together with a few of the best from the next lower class in place of the few that it has lost by promotion. For a while, at least, the average and fair scholars in the class will have the stimulus of being the best in the class. The poor ones will rank as "middling," and the new pupils will begin as the poorest and slowly work up toward the top of the class. The advantage to the self-respect of the slower pupils which comes from standing in relation to their classmates as abler and better informed is not to be lost sight of.

6. Classification in a school is never absolute. No two pupils are of exactly the same degree of progress. The entire number in the school may be ranked from the highest to the lowest, and there will be found no wide gaps indicating a natural separation into classes, but the best of the next class below would stand very near the poorest of the class above, no matter where a division were to be made. In dividing into classes, therefore, the proper number in the class is first to be considered, and next the qualifications. But it will not do, even for the sake of having a class of proper size, to combine pupils of widely differing attainments. As indicated in the above table, the numbers in the various years of the course vary nearly as follows:

First year	30	Fifth year	7
Second year	21	Sixth year	4½
Third year	20	Seventh year	2½
Fourth year	12	High school	3

Provided the classes in the higher grades are to be of normal size, it is clear that the chances for proper grading are only one-seventh to one-tenth as good in them as in the lowest grade. The only remedy for this is to bring together the pupils of the higher grades into fewer schools. There may be very many schools with the lower four grades. There should be only five rooms devoted to instruction of pupils of the sixth year in the course where there are 30 devoted to the lowest grade, or 91 rooms devoted to the five lower years' work. With us those schools giving instruction to pupils in the seventh or highest year of the district school course[1] are called "first-class" schools. For purposes of proper grading and classification, there should be one of these for each district enrolling 4,000 pupils per annum, or for an average attendance of 2,500 pupils. Ten such schools would answer our purpose at present. As we have 15 we ought not to increase our number for five years.

7. As systems of schools are generally organized, the higher priced and most experienced teachers have charge of the upper grades of pupils. As their classes suffer depletion throughout the year, unless there is some regular mode of transferring new pupils to the care of those teachers, they will have very small classes the latter half of each year. Thus, while the poorer class of teachers are overburdened, the ablest and best-paid teachers have less than their quota of pupils. It is clear that the policy should be to bring as many pupils as possible under the ablest and best-paid teachers. The practice of frequent transfer of pupils is better for this purpose than the custom of transferring in bulk once per year.

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[1] At a late meeting of superintendents of western cities (held in November, 1873), it was agreed to adopt a system of eight grades for the work of the district schools, each grade corresponding to a year's work and accordingly subdivided into quarters. The cities of Toledo, Cleveland, Detroit, Cincinnati. Memphis, St. Louis, and Chicago have adopted this standard.

8. The system of frequent transfer does not affect the individual pupil any oftener, on an average, than the system of transfer once a year. The bright pupils, it is true, have frequent opportunity to advance. The system is elastic for them. The slow pupils advance only when ready. The system discards one general epoch of transfer and reclassification at the close of the year, and adopts instead four or more partial transfers so arranged as to accommodate the twofold demand—first, that the ablest pupils shall not be kept back; second, that the ablest and highest-paid teachers shall, at all times, have their full quota of pupils. In the lowest grade, where several rooms in the same building are filled with pupils not advanced beyond the first year of their course, the bright pupil will change teachers perhaps three or four times in the year. In the higher grades the pupil will remain a year or more under each teacher.

9. How to provide for the necessary process of reclassification and transfer from room to room with the minimum of discouragement and consequent injury to that half of the pupils who fall below the average of attainment is the serious question. If the sifting of each class for the advantage of the best ones is accompanied with "dropping" the few poorest ones into the class below, we have the maximum of injury. The class, as a whole, is not stimulated, but only frightened at the degradation of the few hindmost. Those actually "dropped" are really disheartened. Besides, such sifting down tends to create a movement toward the lower departments instead of toward the higher departments where the vacancies are. When the opposite policy is followed, of promoting the few best instead of degrading the few poorest, the maximum of encouragement is attained. Sift up and not sift down. The school should be a living process, continually readjusting and adapting itself to the want of the organization as well as to the capacities of the pupils.

10. How if the upper classes are quite small and yet the intervals are very large in regard to advancement—in other words, what if the more advanced pupils are very few? Central schools should absorb all the pupils of higher grade, leaving to the other schools only such grades as they find it possible to provide with good classification. Without such combination with central schools, economy and perfect classification are impossible. Small classes and small provision for differences in capacity among pupils naturally result.

11. When promotion is made only once a year into the high school, the district schools are compelled to adapt their upper classes to this condition of things, and accordingly make the work of the first grade begin at the beginning of the year and end with its close. The second grade, likewise, must fall into the same trammels. If a class should finish the work of the second grade before the close of the year, it must not take up first-grade work until the beginning of the next year, and if, at the commencement of the scholastic year a class of the second grade has not quite finished its work, it is generally put at once into the work of the first grade, although unprepared. The only alternative would be to let it work a year longer on second-grade studies. The utter want of elasticity in the classification of the upper grades of the district schools, arising from the lack of frequent promotions to the high school, works violence continually to the interests of one-third of the pupils. All those delayed through sickness, the necessities of poverty, or inactive temperaments, either fall back a whole year, or else in a vain endeavor to make up their deficiency, overwork themselves or get discouraged.

12. The advantages of frequent reclassification are, in brief—

(*a*) *Economy.*—Filling up the classes of the ablest and best-paid teachers and making room in the lower grades for new pupils constantly applying.

(*b*) *Rapid progress.*—The pupils that learn readily are allowed to move forward as fast as their abilities permit, the slower pupils and those irregular in attendance neither allowed to hold back the more fortunate ones, nor obliged to overwork and cram in order to keep up.

The disadvantages alleged are confined to the practice of changing teachers too frequently. To these it is sufficient to reply by a question: Is it desirable to keep a pupil back in his studies simply in order that he may recite for a long time to the same teacher? Every superintendent knows that a change of teachers brings the pupil in contact with a new individuality, prevents the danger of warping the development of character in the pupil, and is desirable oftener than once a year in the lower grades, and at least once a year in the higher grades—where the teachers are maturer and more highly cultured—until the pupil reaches the high school, where he recites daily to three or more teachers.

FROM THE ST. LOUIS SCHOOL REPORT OF 1873–74, BY W. T. HARRIS, SUPERINTENDENT.

The theory of grading and classification set forth and defended in my annual report for 1871–72 has provoked more discussion among the leading educators of the country than I anticipated. Criticism has generally been favorable, but in some quarters strong protests have been made against it by very intelligent men. I believe, however, that a complete statement of the method of reclassification, embodying all of its details, will prove the objections made to be groundless. I propose, therefore, here to present the subject anew, and endeavor to consider the alleged defects in a candid manner.

At the National Educational Association in Detroit for 1874 Hon. E. E. White, of Ohio, made the following statement and defense of the position:

The pupils in the graded schools are divided into classes, and to secure necessary economy these classes are made as large as practicable. The fewer the number of pupils embraced in the system, the fewer must be the number of classes, and, as a consequence, the greater must be the inequality in the attainments and capacity of the members of each class, and hence the greater the difficulty of the problem now under consideration. If the teacher of a class adapt his instruction and requirements to the maximum capacity of his pupils, the great majority are hurried over their studies and receive a superficial and imperfect training. If he adapt his class work to the minimum capacity of the class, the great majority are held back, and, as a consequence, not only sacrifice time and opportunity, but fall into careless and indolent habits of study. The remaining course is for the teacher to adapt his class work to the medium or average capacity of his pupils, with such special attention to the more and the less advanced pupils as may meet, to some extent, their wants. But here comes in the "per cent system," with its demands. That the class, as a whole, may attain a high average per cent, it is necessary that the lowest members of it may reach a good standard, and this results in the holding back of the bright and industrious pupils until by iteration and reiteration the dull and indolent may be brought to the required standard. The amount of time and talent thus wasted in some graded schools is very great. This is not always evident to the teacher, since the brightest pupils, being chained to the dullest, soon learn to keep step, scarcely showing their ability to advance more rapidly. This difficulty is greatly aggravated when classes are promoted en masse from grade to grade, the pupils being thus chained to each other year after year, or throughout the course—an efficient process for reducing pupils to the level of mediocrity.

The statement of these difficulties suggests their partial remedy. The brighter and more capable pupils in each class must have the opportunity to work away from the less capable, and to step forward into a higher class, when the difference between them and their lower classmates becomes too great for a profitable union in the same class. To this end there must be a proper interval between the successive classes, and the reclassification of pupils must be made with corresponding frequency.

Experience alone can determine what this interval should be and the frequency with which pupils should be promoted. It is possible that both of these facts may depend somewhat on the number of pupils included in a graded system, a much more complete classification being possible in large cities than in small towns. While this may be true, it is believed by many experienced superintendents and other intelligent observers that the universal experience of graded schools condemns the prevalent practice of promoting pupils but once a year, with a year's interval between the classes. This wide interval is a serious obstacle in the way of a needed

reclassification of pupils. The more capable pupils can not be transferred to a higher class, since this obliges them to go over the ground of two years in one—a task successfully performed by very few pupils—and the less advanced pupils can not be put back into a lower class without serious loss in time and ambition, if they are not withdrawn from school. It may be well for a few pupils in any system of graded schools to spend an entire year in reviewing the previous year's work, but these exceptional cases are usually the result of an unwise attempt to hold pupils too long together. Large classes of young pupils can not be kept together, even for one year, without serious loss both to those who are held back and to those who are unduly hurried. What is needed is a system of classification and promotion that shall provide for the breaking of classes, at least twice a year, with a transfer of the more advanced pupils and their union with the less advanced pupils of the next higher class, and also with special transfers of bright pupils from class to class as often as may be necessary, and special provisions for pupils deficient in some branch of study.

We are aware that the system of annual promotions has special advantages. It reduces the number of classes in the smaller cities and towns, and it saves labor and trouble, especially when classes are promoted in a body, on a minimum standard. It is undoubtedly true that a Procrustean system which puts pupils in classes, reduces them to the same capacity, and moves them regularly and evenly forward, requires little skill to run it, but this can not compensate for the serious losses involved. The highest good of pupils ought never to be sacrificed to secure a self-adjusting mechanism and uniformity of results.

Superintendent Stevenson, of Columbus, Ohio, in his report for 1873-74, discusses the question in an attitude somewhat hostile to the plan of frequent reclassification. He says:

The course of study assumes one year for the completion of the studies in each grade, and an annual transfer of pupils from grade to grade. The amount of work to be done each year is the maximum for the pupils of average capacity whose attendance upon the school is the average number of days a child of ordinary health may be present during the year. Dull scholars often make up what is lost in natural ability by regular attendance and industry, and bright scholars lose by irregularity of attendance and indolence what they gain by quickness to learn, so that the larger number of promotions can be and are justly and satisfactorily made at the close of the year.

But differences in the ages and the capacity of children entering the school must in many cases be provided for in the classification. To make such provision no classification can be absolute; it must undergo changes from the beginning to the end of the year. A child of 10 years of age having a healthy body and vigorous mind will do more or is capable of doing more study than a feeble child of 8 years of age; and a bright child whose parents take some pains in home training, who is regular in his attendance, will do much more in a year than the dull child who is neglected at home, and whose attendance is interfered with by the necessities at home or by bad health. It is also true that pupils of the greatest ability have frequently less power of application than those less brilliant. What one gains by ability the others gain by industry and effort. For example, ability is equalized by industry; regular attendance, by irregular; health, by illness; age, by home training; attention, by inattention. These are important factors which must be considered in the solution of the great problem of classification.

By observing closely the progress of children in public schools for a series of years I have arrived at the following results: In a graded school in which the course of study is made for the average pupil, about 5 per cent will show strength enough to be advanced during the year, and about 10 per cent will fall behind the remaining 95 per cent of the class. This varies a little in the lower and higher grades, but it is a fair and approximately correct average for a course of study requiring eight years for its completion. The question then is, What is to be done with this 15 per cent of scholars? Every teacher will answer, Let the 5 per cent go to the next higher grade, and do not permit the 10 per cent to interfere with the progress of the class. Five per cent of the 10 can, without injury to themselves, by a little extra effort be worked up to the proper standard, and the remaining 5 per cent ought for their own good to pass over the work of the grade again, or so much of the work as will prepare for the next higher. I can not condemn in too strong terms the recommendation of those theorists who would gather into one class or grade all the bright ones, and the dull ones into another—that is, make the basis of classification upon the estimated ability of the pupils, rather than upon what they do; for it is the rule, rather than the exception, that the dull scholars win the race in the long run. The separation of the dull and bright scholars into different classes is unjust and injuri-

ous—unjust, because the keenest discrimination can not always discover the slumbering mental power of many children, nor ascertain the outside influences which detract from the manifestations of intellectual ability by the child; injurious, because the dull scholars are deprived of the highest possible standard by which to measure themselves intellectually and the competition which is necessary to excite interest and enthusiasm. To meet this theory, viz, that the bright scholars should not be chained to the dull ones, promotions of classes in many schools are made semiannually. The arguments in favor of frequent promotions are, first, the interval between the classes being short, those who fail to reach the required standard for promotion will lose less time; second, it gives an opportunity to the bright and industrious scholars to break away from their dull and indolent associates; third, it brings the scholars in contact with a greater number of teachers. The objections to frequent promotions by classes are, first, frequent changes of teachers; second, the best interests of the majority are sacrificed for the benefit of a very small minority; third, there is no real advantage gained for those who are promoted, either in time or opportunity for more rapid advancement. These objections are worthy of careful consideration. The teacher, in an interval much shorter than a year, can not become acquainted with the individuality of her pupils, their strong and weak points, their susceptibilities, their physical and intellectual powers, and the outside forces which more or less control their education and character. The teacher ought to know her pupils thoroughly. This takes time. Will not children do better work and make more rapid progress with a teacher who has had time enough to win their confidence and love than they would with one whose name they scarcely know and whose warm sympathy they have never felt?

Why make a reclassification of a whole school three or four times a year because 15 per cent have failed to reach a fixed standard at the end of every three, four, or six months, to the disadvantage of the 85 per cent? The amount of work to be done by the pupil in a year is the same whether it is divided into quarters, halves, or a year, with a promotion at the end of each period.

The plan of promotions in the schools of this city has been by classes annually, except in the lowest, primary grade, in which promotions are made semiannually, to accommodate the new pupils entering in the spring, and by individuals at any time during the term, whenever they are found qualified for a higher grade. A pupil passing into a higher grade at the end of five months finds no difficulty in making up the subjects omitted in connection with the reviews of the class if he is apt and diligent. In the practical working of a system of schools this plan secures all the advantages of frequent promotions with none of the disadvantages of the plan of yearly transfers. In short, it has all the flexibility that the varying circumstances and the differences in children require.

His condemnation of the theory or system which brings together all the bright ones into classes by themselves, and collects the dull ones in a similar manner, is not too strong, in my opinion. I have seen the bad effects of this often. He limits his objection to the system of reclassification recommended here by specifying "promotion by classes." In my discussion of the subject last year I remarked, in view of much evidence of misunderstanding on this point (Report. 1872-73, p. 25, section 5):

It is clear that frequent promotion should not be made by classes. The few best ones in the classes should be united with the class above—it will seem a reward or a recognition of their excellence. After such promotion has been made through all or nearly all of the classes from the lowest, each class will find itself composed of its fair, average, and poor scholars, together with a few of the best from the next lower class in the place of the few that it has lost by promotion. For a while at least the average and fair scholars in the class will have the stimulus which arises from the consciousness of being the best in the class. The poor ones will rank as "middling," and the new pupils will begin as the poorest and slowly work up toward the top of the class.

It seems that in Columbus about 5 per cent of the pupils "show strength enough to be advanced during the year." One in every twenty pupils has so strong need of promotion that it is found best to place him in the class above, although that class is a full year in advance. If so many are benefited by a leap over so large an interval, it is difficult to see why 10, 20, or 30 per cent of the pupils could not be profited by promotions to classes thirty, twenty, or ten weeks in advance. And if 10 per cent fall behind into classes a year lower in the course of study, it admits of doubt whether they and many more besides would not have been better pro-

vided for by assigning them to classes ten or twenty weeks lower in the course. The other objections will be noticed in their proper place.

It will be noted that Mr. Stevenson believes in promoting "by classes, annually (semiannually in the lowest primary grade), and by individuals at any time during the term, whenever they are found qualified for a higher grade." "Promoting by classes" evidently refers to changing the work of the class from the course of study laid down for one year or grade to the work of the next year or grade, while "by individuals" refers to actual reclassification.

"Promotion by classes" may be from day to day, or month to month, or year to year, or once in four years, according to the arbitrary standard of division adopted by the one who makes out his course of study. Whenever the teacher sets a new lesson she promotes "by class" to a new stage in the course of study. Whenever one ten weeks' work is accomplished, and a new one begins, there is a promotion "by class," although neither the teacher nor the pupils make any note of it. The course of study with us is subdivided so as to show the average amount of work for ten weeks. Many years ago no accurate measure of the time required to go over the course of study in its various stages was kept in this city, and as a consequence the expression "promotion by class" would not have been used with reference to entering upon the work of a new year, but might have been applied to the promotion of a class to a new text-book, or from one school building to another, or from one room to another in the same school, or, finally, from the district school to the high school. Possibly, also, "promotion by class" refers to the change of teacher, in Columbus. But at all events it is not "reclassification" in the sense that term is used in this report. The promotion "by individuals," since it must refer to a change from one class to another, is a reclassification, and this must happen quite frequently even in a school where only 15 per cent of the pupils are thus changed in the course of a year.

Superintendent Stone, of Springfield, Mass., presents his view of this matter, in his report for 1874, thus:

The perfection of school organization, as I understand it, is reached when every pupil has a chance to do his best. This can be accomplished only by judicious grading; but schools are frequently graded so mechanically that they fall far short of the highest efficiency. In this way arises the objection, sometimes made, that work in graded schools is slow, and that pupils are not unfrequently hindered, rather than carried forward, in their progress. It must be acknowledged that unless grading is done strictly according to proficiency and ability, the advantages claimed for it are not attained. The mistake most frequently made in grading a school is in supposing that a class once formed can be continued for a considerable length of time without any promotions or other changes. It can hardly be expected that 50 pupils, even of similar proficiency, at the commencement of a school year, can be placed in a room and kept profitably employed there for a twelvemonth upon the same amount of school work. A difference in ability will soon develop itself, and then if the rate of progress is graduated to the average, or, as is sometimes done, to the minimum capacity of the class, those who are able to do more will soon find themselves with considerable unoccupied time upon their hands. Such a result is especially to be deprecated; for it is an important principle to be borne in mind that pupils do not study to the best advantage, nor accomplish their greatest and best work, unless they feel the necessity of constant effort. They ought not to be hurried, but they should feel that they can not be idle without incurring the danger of falling into the ranks of the laggards and the drones. Persons of active minds must have employment of some kind, and if they do not find sufficient legitimate work in school, they often, from mere restlessness, occasion the teacher much trouble in the way of discipline, or become disgusted and leave school altogether. Their minds are dwarfed if they remain under such circumstances; they have little enjoyment in their work, and it is not strange they lose their patience and their interest.

Various plans are proposed and tried for the solution of this difficulty. That of dividing and subdividing pupils of a single room into numerous small classes is, perhaps, the most objectionable, the time allowed to be devoted to each class being wholly insufficient for anything like thorough and satisfactory work.

Another plan is an entire reconstruction and classification of all the grades four

times a year. Whatever may be said in favor of such a course, neither theory nor practice gives it a strong indorsement. While it may bring those of the same proficiency together at each classification, a term of ten weeks does not allow sufficient acquaintance to be formed between teacher and pupil to enable both to work to the best advantage before a recast of the school introduces a new class, or one for the most part new. Such frequent changes are found to produce constant confusion, and the advantages of continuous methodical work are almost entirely lost.

Our own schools, as I regard them, seem to need a more discriminating classification at the commencement of the school year, and afterwards more frequent individual promotions. When a class is formed every pupil should be placed there who is able or who can possibly be induced to do the work of the class, no matter how many grades such pupils overleap or what may be their ages. As the class progresses, those who seem capable of advancing faster and are willing to make an extra effort should from time to time be promoted to the next higher class or grade, provided that it seems probable that such pupils can bridge over the interval thus passed in a reasonable length of time. Where such opportunities for promotion are constantly before the school a laudable ambition for respectable progress is kept up and more and better work is accomplished. At the commencement of the spring term, in April, a reclassification of the lower primary grades may be desirable, as a considerable accession of new pupils is made at that time to those schools. I would also advise that at the same time, three months before the close of the year, a thorough examination be made, in the upper grades of the grammar schools, of those individual cases who seem capable of advancement, that they may be allowed promotion, and thereby gain a year in their course, especially when the age of the pupil seems to render such a step desirable.

Such a system of classification and promotion, carefully watched and carried as far as the health and ability of the pupil will admit, and assuredly no further, will, I feel confident, greatly increase the efficiency of schools. In this way many a disheartened pupil will be incited to interest and effort; many who have despaired of promotion will look forward with hope; many who have anticipated leaving school in the middle grades will be induced to go further; and many, very many, I hope, will be able and willing to go beyond the grammar-school grade and join the classes in the high school—the highest public educational good in our city now within reach of its children and youth.

The plan of "dividing and subdividing the pupils of a single room into numerous small classes," spoken of above as the "most objectionable," is the plan adopted in ungraded schools and for the numerous class of small country schools. While the plan is very objectionable, it is difficult to suggest anything better for the small schools in thinly settled districts of the country. In the lowest primary classes of a city school, where the recitation should not exceed twenty minutes in length, the teacher may profitably divide her 60 pupils into three or even four classes. But in the grammar school there should not be more than two classes of 24 pupils each. "Reclassification of all the grades four times in a year," if it had the effect described, of changing at each time the majority of the pupils from one teacher to another, would certainly fail of "strong indorsement," or at least ought to fail of it. When we read, however, of the "frequent individual promotions" and of the "reclassification of the lower primary grades" at the commencement of the spring and fall terms, we find that the kind of "reclassification" we advocate here is practiced and strongly indorsed in Springfield.

The school committee of Worcester, Mass., present the following remarks on this topic in their recent report on the suggestions made by the mayor of that city:

It should also be borne in mind that any system of grading is necessarily imperfect. The differences between our scholars are not a series of regular and abrupt steps according to the theory of our grades. There are wide differences of attainment by study of physical and mental capacity and of disposition and home influence. In truth, these differences might be more fittingly compared to the slope of a mountain ridge than to either a stairway or an inclined plane; and, if we rightly understand the remarks of the mayor, it is these differences that form the basis of his criticism upon our system of grading. But precisely the same criticism may be made upon the ordinary classification of scholars in an ungraded school; and until the city of Worcester can afford to furnish to each scholar a private tutor espe-

cially adapted to the scholar's needs, we are not prepared to recommend the abolition of grading and classification in our schools.

But it is no doubt true that a series of graded schools needs constant supervision and regrading. Many teachers seem unwilling to promote their best scholars except at the termination of the year, and, therefore, some special provision for discovery of cases of exceptional merit and their more rapid advancement is necessary.

The ordinary and regular operation of our system results in the promotion or advancement of the scholars one grade each year. The average Worcester scholar performs the work assigned for him to do with an indifferent sort of success, and is regularly promoted.

But there are cases of exceptional dullness and absence, where the work is not done; and there are exceptional cases of meritorious achievement, when promotions might and ought to be made more rapidly than our system in its ordinary working provides for. It is the latter which we suppose the mayor to have had in mind when he called attention to semiannual promotions. Agreeing with the spirit rather than the strict letter of his recommendation, we favor promotions in cases of exceptional merit, at whatever time of year it may be discovered, and recommend the breaking of all rules, if need be, to get at them and do justice by them.

When the present plan of placing each school building under charge of one master or principal was adopted, it was expected that the principals, having all the scholars in the building directly under their own eye, would readily discover and rapidly advance superior merit. Has this expectation been as fully borne out by results as we had right to hope it would be? Do the principals make themselves personally as familiar with the scholarship of each scholar as they might and ought? It seems to us that we have a right to expect that all principals having an assistant in their own room will make frequent visits to each room, hear recitations, and give instruction in each, and make personal examination to such an extent as to become perfectly familiar with the attainments of every scholar and be prepared at any time to advance the deserving. It is believed that they have abundant time to do this.

We have in mind the case of six scholars at the beginning of the present year promoted from the sixth to the eighth grade, and to-day they are among the very best scholars of that grade. Nothing can be more certain than that it would have been a great injustice to have kept back those six scholars in the seventh grade during the present year.

The provisions of Chapter VII of the rules and regulations of this board well define the duties and confer ample powers upon "principals and assistants" with regard to promotions, and the only change we see reason to recommend is the addition of a rule requiring assistants to make reports to principals, and principals to superintendents, at the end of each term, whether there are any scholars in their school that ought to be promoted; and if so, why they are not promoted.

Superintendent Harrington, of New Bedford, attacks very earnestly the proposed plan of reclassification, and takes a far more radical position of hostility than any other opponent. His first and chief objection to the system is against the supposed frequent change of teachers necessitated by it, and the consequent injury to the thoroughness of the instruction and the healthfulness of the discipline. He very justly contends that the teacher must have time to get acquainted with his pupils and to plan and carry out a systematic whole of methods and processes carefully arranged, so as to produce important mental and moral results. Perhaps a sufficient reply to this will be found in the subsequent demonstration of the fact that the change of teachers need not and does not occur any oftener under this system than under the system its opponents advocate. But Mr. Harrington seems, like some other opponents, to understand the effect of "reclassification four times a year" to be the change of teachers four times a year. With such a mistaken view of the system, one can not be surprised that he opposes it.

But he proceeds to indicate his hostility to all systems "in which promotions make one of the customary instrumentalities of influence and progress." "The course of study," according to him, should be "so adjusted as to meet the intellectual demands of a scholar at every step of his progress, following him along until, at 14 years of age, he has compassed a full schedule of elementary study." "Although the well-constructed manual of study presents only the minimum of

requirement," he asks: "Do we not expect that minimum to serve only as a skeleton, which the teacher is to clothe with flesh and blood and round out into full proportions, so as to meet the expectations of the ambitious, satisfy the cravings of the intellectual, and occupy the time of the most proficient?" "The school in which promotions are a customary instrumentality must be addressing itself all the time to mediocrity alone, on a comparatively low level of purpose without stimuli to create a healthful *esprit de corps*, and wanting in the characteristics of vigorous, intellectual life." "Promotions are not provided for in our system—are not asked for—could have no legitimate place. The best scholars, all throughout our grades, find constant and delightful occupation."

By this we are to understand that a vastly superior plan to the one which sifts and classifies and is attentive to close grading has been discovered, and this plan makes pupils and parents indifferent to the grading and classification of the school. It makes no difference how unequal the powers of those who are in the same class—the gifted and mature pupil can use his time in full, while the poorest pupil does as much. "This condition of things, rendering it possible to occupy the time of the superior scholars in fruitful study, and also to give the poorer ones a good, wholesome stint which they can accomplish without any undue strain or forcing, while all at the same time work together as a class, is brought about by an adjustment of the studies, which may be described in a homely way as 'a circle within a circle.' The inner circle represents the essential fundamental work which is prescribed to be thoroughly accomplished by all the class. The outer circle represents a broader field of study, either illustrative of or supplementary to that of the inner circle, which all are expected nominally to engage in, *but from any test work as to which the weaker minded can quietly be released just in proportion to their incompetency to master it.*"

I have italicized the last clause in order to draw special attention to it. "The result," he continues, "amply justifies our method. It is as admirable as it is astonishing to find, by letting the poor scholars work along side by side with their original mates, not souring them by rebuffs, not destroying their self-respect or paralyzing their ambition by keeping them back, how much they will gradually acquire, how often, indeed, their indifference becomes charmed away, their dormant faculties aroused to activity, and an honorable career substituted for one of neglect and demerit." Finally, he concludes that the best plan is "to continue the class of scholars under the selfsame teacher through all the four years of progress after entering the grammar school up to the graduating grade." He intimates that the schools under his charge "have comparatively little to do with percentages. We do not believe in them in connection with either large schools or little schools. We believe that a system of marking and per cents exerts a depressing influence over school work. We have stated written examinations (four times a year) at which, for specific purposes, the papers are marked and the per cents obtained. Beyond that we trust in less artificial stimuli to give spirit and life to our schools."

The repudiation of all class records by which the individual pupil and his parents can be provided periodically with a faithful statement of the amount of work done by said pupil, would seem to be quite in harmony with the system described as existing in New Bedford. While I am far from denying that the "let alone" (*laissez faire*) theory of school management will permit some very good work to exist, my experience with very much of it in my youth, beginning with the "red schoolhouse" in the woods and extending through several of the private schools called "academies," forces me to say that I believe that under it there is a wholesale slaughter of the time and opportunity of well-disposed youth. I shall never forget the epoch made in my life upon emerging from this régime and entering the Phillips Academy at Andover, then under Dr. S. H. Taylor. Here a class

record was kept, and students were held accountable for the use of their time and opportunities. I can not but believe that the system practiced at Andover does the utmost to develop responsible beings, and to transmute the pulpy substance of impulse and inclination—the undisciplined will—into a self-controlled will, a directive intelligence that can reinforce the moments by the hours and accomplish something in the world.

Most persons that I have known brought up under the laissez faire system have seemed to lapse away in after life, and recede from the promise which their school life gave, while the strong characters have emanated from the throng of those who were held to a strict responsibility in their school life. A system which classifies the weak and incompetent with the strong and genial minded, and when they diverge in the amount of work accomplished under its instruction—as they certainly will diverge under any instruction which is anything other than an opiate, a paralyzer of the will—still retains them in the same class and relaxes its hold so as to release the weak from the normal responsibility, will be found in nearly every case to be productive of injury to the growth of character in both weak and strong. If pupils of all classes are to be held to a strict accountability for their work there must be a careful system of classification.

I am aware of the difficulty of making any statements regarding schools without the probability of being misunderstood, even by those well versed in educational affairs. When we undertake to describe a system or method, we assume a certain status of things as existing; probably we take for granted that the reader or listener has in mind the organization of the schools in which we are working. If the reader or listener happens to be acquainted with a radically different system only, his attempt to construe our words results in ludicrous misconceptions. Few people have any adequate idea of the diversity that really exists in our public educational systems in the United States. Not to speak of the difference of public school methods from those of private or parochial schools, one may find variety enough within the public schools to explain how such misunderstandings arise. It is not sufficient to state a system in words which have become technical in a particular locality.

The reader of a different locality will read such words attentively, but will put his own construction upon them. An example of this has been seen in the different interpretations given to the words "promotion" and "reclassification," used by different writers in different senses, and sometimes by the same writer in the same sentence in two meanings. "Promotion" may mean change of class (*a*) from one book to a higher one; or (*b*) from one room to another; or (*c*) from one teacher to another; or (*d*) from one school to another; or (*e*) from the quantum of work prescribed for one limited time (primary or grammar department, year or grade, term or quarter, week, or single lesson). Or, again, it may refer to the change of a pupil from a lower class to a more advanced one, etc. "Reclassification" may be used to signify some one of many phases appertaining to the organization of a school. The transfer of a single pupil from one class to a higher or lower one is a reclassification. It is not strictly correct to apply the term "reclassification" to the transfer of a whole class from one school, teacher, room, book, or grade of work to another; and yet much confusion arises from such application.

In order, therefore, to make this discussion explicit, it will be necessary to have constant reference to systems that stand in contrast to our own, while we are attempting to give an account of it in a report.

1. The germinal school organization out of which all varieties have grown is the country school of one room and one teacher, with from 10 to 60 or more pupils of all ages and degrees of advancement, from the stripling of 4 years, who begins at the alphabet, up to the young man of 21, who is likely to study algebra, or Latin, or natural philosophy. The difference in qualifications ranges through

eight or ten years of study. If classes are to be made they are likely to be made on the accidental fact that some of the pupils bring to school the same text-books; in the same arithmetic, the same reader, or geography, or grammar, a class being formed with little regard to the difference in advancement of its members. Not seldom it happens that those of like advancement in the country school happen to have different text-books, and for that reason alone are assigned to different classes and mated with other pupils of very inferior attainments, who have the same book. Thus it happens that the function of the teacher in the country school becomes chiefly one of keeping order and hearing lessons, without being able to find time to teach or explain anything, or to become acquainted with the obstacles that arise in the minds of his pupils.

His number of recitations per day averages from twenty-five to fifty, and their length varies from two minutes to twenty or thirty, but averaging only five or ten minutes apiece. But the same teacher may remain in the school for years, although this is not usually the case. The pupils then may avoid frequent changes of teachers. A pupil might spend several years under the same teacher. There is no division of labor in this rudimentary type of school, and it is obvious that the continuance under the same teacher possesses but little more advantage than the antiquated process by which a gun was made throughout—lock, stock, and barrel—by one gunsmith, has over the division-of-labor system in the Springfield Armory, or the watch manufactories at Waltham or Elgin, where each manipulation has a different workman to perform it. With small schools of this character which range through so wide differences in age and acquirements in their pupils, but little can be done other than to secure discipline, and lay special stress upon individual industry. Uniformity of text-books (now generally established by State laws) renders possible some degree of classification, but at best such classification is very imperfect for the reason that there can be little transferring from one class to another in case of differences of ability.

2. When the country school grows to be a village school, and the number of pupils increases to 60 or 100, two rooms are opened and two teachers employed. Division of labor may begin here. Primary and grammar department is instituted, and the range of acquirement in each room may be four years by the course of study. Fewer classes and larger ones allow the teacher twice the length of time for each recitation, and he can begin to lay some stress on instruction. The advantages of class recitation over individual instruction begin to appear at this point. Individual instruction is good where the teacher can devote to it as much time as to an ordinary recitation, but it is inferior to class recitation even then. The class should consist of not less than 10 nor more than 30. The length of recitation should vary from fifteen or twenty minutes in the primary grades to thirty or forty minutes in the grammar department. During recitation there should be the most vivid and constant attention on the part of all the pupils. It is obvious that this can be obtained in the primary grades only for a short time. With increasing discipline and the strength that comes of years' practice, the recitation hour can be lengthened.

That a properly conducted class recitation is of far greater value than individual instruction is obvious from the consideration that the contents of the lesson are stated over and over by different pupils of the class, criticised and discussed, illustrated from the experience of different pupils, and the pupil has the advantage of seeing how his fellows encounter and surmount such difficulties as he himself meets. What we see in the experience of others, our equals, becomes at once our experience by adoption, and it saves us from the pain and consumption of time necessary to acquire its wisdom through personal adventure. Hence education is essentially to be carried on in the form of community. The school is and must be a community; no private tutoring can educate as the school can. But it is evi-

dent that the school best subserves this purpose when it classifies so that each one meets his equals in the recitation. Great inferiority or great superiority in his fellows mars the force of the lesson which he learns from seeing their work.

The village school of two rooms, as contrasted with the country school of one room, exhibits to us the beginnings of classification and proper recitation. It does hardly more than this. Its separation of the four years of primary work from the four years of grammar-school work is a great, but only one, step.

3. When a village comes to have 500 or 1,000 children living within a small area so that they can be brought into a central school of eight to twenty rooms, new developments become possible in grading and classification. Usually the primary work is kept localized in small schools, while only the advanced pupils are brought together into the central school. This is just and proper. The ratio of younger pupils to older ones is large. In St. Louis there were last year, in every 100 pupils, 37 in the first year's work; 17 in the second year; 16½ in the third year; 12 in the fourth year; 7 in the fifth year; 4½ in the sixth year; 3 in the seventh year, and 3 in the entire four years' course of the high school. Counting the lowest three years of the course as primary work, we have over 70 per cent of all the pupils in the schools in the primary department, and only about 26 per cent in the grammar department. In Eastern cities, where education for a long time has done its work, the ratio is much more favorable to the higher departments than with us. From these facts it is clear that in order to secure as good results in classification of grammar-school pupils, as with primary pupils, the former must be brought together in about one-fourth as many schools as the latter. To explain: There are, in the school children of a given community, about one-half as many in the grammar-school department as in the primary. The recitations of the primary pupils should be about two-thirds the length of those in the grammar department, by reason of the undisciplined power of attention of the former. The number of recitations in the primary department will average three-fourths of the number to each class in the grammar department. Hence it is that the number of pupils to each teacher in the grammar department must be considerably less—two-thirds of the number assigned to each teacher in the primary department. The teacher in the primary department can manage and instruct 72 pupils with greater efficiency than the teacher of the grammar department can manage 48 pupils. In the small primary schools located in the different neighborhoods, therefore, the primary teacher may easily manage three or four classes of pupils. These may represent a difference in advancement twice as great as that in any single room of the grammar department.

The question of the proper number of classes to be assigned to a teacher arises in this grade of schools. No one would think of organizing a country school or the 2-room village school on the basis of one class to a room. It is first in the central or "graded" school, with its 8 to 12 rooms, that the question arises of reducing the classes in number so that each teacher shall have charge of one only. According to our St. Louis system the teachers in the grammar department (fifth, sixth, seventh, and eighth years of the pupil's course at school) have two classes each, and one is engaged in study while the other recites. In the primary department three and even four small classes are formed by the teacher of each room. In these remarks it is taken for granted that the style of building is not the old-fashioned type of a large study room, presided over by a principal and with small recitation rooms opening out from it, in which the assistants hear the classes recite, when sent to them from the large room. This type of schoolhouse, invented for the purposes of the Lancasterian system, has gone out of date. Since 1848 the plan has been adopted of assigning each teacher a room about 32 feet square, with 48 to 64 pupils, who do not leave the room for study or recitation, both being conducted by the teacher in charge of the room.

The gain in humanizing the pupils and in rendering a milder discipline possible has been very great under this system. Formerly the assistant teachers had little to do with the discipline, which was enforced almost entirely by the principal, who, on the other hand, not learning to know the pupils through their recitations, had to govern them through external authority rather than through the subtle influences which one can wield who knows the characters of his pupils thoroughly. The objections to the plan of having only one class under each teacher are these: (*a*) It makes the class too large, so that either the recitation must be too long or else its members can not all share in the recitation; (*b*) it wastes the possibilities of classification by requiring the whole room to take the same lessons, when, if divided into two classes, one in advance of the other, the class intervals could be lessened one-half throughout the whole school, and as a consequence transfer from one class to another be rendered easier; (*c*) it is apt to destroy the force of the recitations, because the teacher while not hearing a recitation is helping scholars to learn their lessons or solve difficulties, and thus, to a greater or less extent, distracting the attention of the pupils from work which they ought to perform by themselves and with all possible self-concentration and self-reliance, the consequence being that the work of criticism and analysis that should come up in the recitation is anticipated by the ill-timed assistance of the teacher during study hours; hence a tendency to obliterate the lines between study hours and recitation hours and to confound them.

If, then, we suppose that our village "graded shoool" is organized so as to give each teacher a room with two classes, the class intervals will be about as follows: Eight rooms devoted to grammar-school work (the second four years' course for the district schools) and 400 pupils in attendance; of these pupils one class would be in the eighth or last year of the course—30 pupils; three classes in the seventh year, the advanced class one-half year behind the highest class in school, the second and third classes, respectively, in the first and second quarters of the seventh year's course—70 pupils; four classes in the sixth year's work, one in each quarter's work of the course—110 pupils; seven classes in the fifth year's work, the class intervals being from five to ten weeks—190 pupils.

The following scheme would indicate the rooms, classes, and grade of advancement of the pupils in this "graded school:"

Room.	First-class pupils.	Course of study.		Second-class pupils.	Course of study.	
		Year.	Quarter.		Year.	Quarter.
I	30	VIII	Second			
II	20	VII	Third	25	VII	Second.
III	25	VII	First	25	VI	Fourth.
IV	25	VI	Third	30	VI	Second.
V	30	VI	First	25	V	Fourth.
VI	25	V	Third	30	V	Third.
VII	25	V	Second	30	V	Second.
VIII	25	V	First	30	V	First.

We have not indicated a high-school course in this school system. Its normal size would be about 70 pupils. These, dividing into four classes to correspond to the four years' course, could not be subdivided, for subdivision of classes ought not to take place unless the number in the class is greater than 30, except in those cases where the class intervals would be greater than one year. In the above graded-school course perhaps it would be found necessary to subdivide the class of 30 who are in the eighth year or grade.

In order to explain my use of the technical expressions "year" and "quarter" I will state that at the National Educational Association in August, 1874, a conventional grading scheme was adopted by the school superintendents in order to

measure the progress in the course of study and afford a convenient technique for expressing it:

District-school course.								High-school course.			
Primary-school department.				Grammar-school department.							
I year or grade.	II year or grade.	III year or grade.	IV year or grade.	V year or grade.	VI year or grade.	VII year or grade.	VIII year or grade.	I year or class.	II year or class.	III year or class.	IV year or senior class.

4. The per cent of pupils in the entire system that are enrolled in the high-school course of study varies from 2 to 5 per cent (Chicago, 2 per cent; St. Louis, $2\frac{3}{4}$ per cent; New Bedford, 4 per cent; Boston, 5 per cent). Hence in school systems enrolling 5,000 pupils and upward per annum the high school enrolls 200 or more pupils, as the percentage of high-school pupils is usually larger for small cities. The ratio of pupils who enter the high school and remain to enter the second year is 57 per cent; to enter the third year, 36 per cent; to enter the senior class, 25 per cent. At this ratio there would be about 100 pupils in the class entering the high school. These could not all recite in one class, and would be divided into three or perhaps four divisions. According to our principle: "Have as many degrees of advancement in a school as there are different classes or divisions for recitations." We may accordingly find our high-school classes ranking as follows:

I. Senior class ..... 24 members, one division.
II. Third-year class ..... 36 members, two divisions, half-year intervals.
III. Second-year class ..... 56 members, two divisions, half-year intervals.
IV. First-year class ..... 90 members, three divisions, quarter to half year intervals.

The only ground that can be alleged for desiring to avoid these class intervals and reduce all to the standard of the year interval is found in the fact that the high-school course usually admits elective courses or studies which are not difficult to arrange when the class is so large that a full division can be made up on any one of the elective studies or courses, but with a small class split up by election of various courses, the arrangement becomes impossible without an extremely large and expensive corps of teachers. This objection may be met by curtailing the elective studies and constructing a rational course of study. Such an attempt has been made by the committee on course of study in our schools. All pupils are obliged to take Latin during the first two years of the high-school course. Election of studies is allowed to some extent, but is limited by a rule prescribing the minimum number that may form a class in an elective study.

In this organization of schools the plan of class intervals of less than a year may exist in all the classes except the highest. When the number in the high-school course exceeds 500, the senior class will consist of two or more divisions and should graduate at intervals of half a year. The matter of graduation from the high school is not, however, so important. It is easy to bring all the divisions together in the third year of the course by adding something to the extremely valuable culture studies of that year, so that those who get ready to take the studies of the senior class before the close of the year may take up an extra amount of work to occupy them until the end of the year.

For the first two years of the high-school course the class intervals should by all means be less than a year if those classes are subdivided into two or more divisions.

The question may arise, How shall we introduce the plan of shorter class inter-

vals into the high school? This question would be asked in the presence of a system whose course of study has been rigidly "nailed to the calendar," so that each pupil was supposed to complete the work of his grade just at the time of the annual examination and at no other time; and if he lacked some little time of completing his year's work—say one week or one month—then he should simply be consigned to the next class below and continue a year longer on the work of the grade. Attention must be called to the fact that this correspondence of the progress of the class in the course of study with the calendar indicates violence. Such correspondence is not natural and can not be reached or maintained, except by holding back pupils already advanced or by cramming pupils who are not up to the standard. If the natural causes are allowed to work, class intervals will appear everywhere, so that no two divisions will be at the same degree of advancement in their work. What I would lay stress on is this: Never try to bring the degree of advancement of any two classes or divisions to the same exact standard or to standards exactly a year or multiple of years apart. Rather encourage the organization of classes at intervals of less than a year apart, so that reorganization of classes for economical reasons, or for purposes of better classification, may be made at any time without inconvenience. This can be done easily when the classes are only six or ten weeks apart, but not easily when they are a year apart.

The actual test of advancement of a pupil is maturity or ability to go on with the work given him. It is safe to say that even in a country school of 60 pupils there are no two of exactly the same advancement, although it is probable that there are eight years of school work between the advancement of the highest and that of the lowest. Now, classification is at all times a merely relative and arbitrary affair. In the school of 60 the first class in arithmetic may include any number from 1 to 10, perhaps. If it has 10, it is likely that there will be a difference in qualifications of from two to three years in actual advancement, and the consequence will be that while the lowest will be dragged beyond their powers, if they are really compelled to do the work, the most advanced will feel no pressure except that of their own caprice. Without looking at their lessons, they will easily lead the class. Hence they will lose that valuable discipline of the will which comes of a feeling of responsibility and the necessity of making persistent and regular exertions.

The ever-repeated experience in such schools is the loss of all hold on the pupil's mental habits by the teacher except what he can get by a little individual instruction. Classification in large schools, though still arbitrary, becomes approximately exact. It always happens that there is no strongly marked line between the lowest of the class and the highest of the class next below. Where there is a year's interval of school work between the classes, it always happens that the interval between the highest and lowest in the class is less than the interval between the lowest in rank of the upper class and the highest in rank of the lower. Bearing in mind this relative nature of classification, one can easily see the importance of having small intervals between classes. The question of economy here meets the question of classification. The classes ought not to be below a certain size; 20 to 30 pupils should be in each class; the less the intervals between them the better. In a country school of 40 pupils of all grades the size of classes is so seriously limited by intervals of advancement that little else than individual instruction is the result, and the time and energy of the teacher is dissipated.

In enumerating the causes which tend to render frequent reclassification necessary, I would lay stress upon the following:

(*a*) Irregularity of attendance caused by sickness, by necessity of working for a living, by change of residence. To show the prevalence of this irregularity, I

have taken at random the following statistics from such sources as are before me:

City.	Per cent of attendance of pupils of number enrolled.	City.	Per cent of attendance of pupils of number enrolled.
Boston	89	Louisville	64
New Haven	80	Cleveland	63
Richmond (Va.)	76	Milwaukee	63
New Bedford	75	Chicago	61
Providence	74	Pittsburg	60
Washington	74	Newark	58
Columbus (Ohio)	72	Rochester	56
St. Louis	67	Kansas City	55
Syracuse	66	Albany	54
Detroit	66	Baltimore	54
Indianapolis	65	New York	54
Worcester	64	Jersey City	48

About two-thirds of the entire number are in attendance at a given time, it would seem. Upon return to school, after a period of absence, the pupil has the opportunity of falling back into a class one year behind or of overtaking the class he left by making extraordinary effort.

(*b*) Time of commencing school. Nearly one-half of the youngest pupils begin their school life in the spring instead of the fall, and consequently their class interval is three-fourths of a year behind the class that entered in the fall before.

(*c*) Then there is the difference in temperament and character—the slow and the swift, the weak and the strong, the careless and the earnest, the mature and the immature, the industrious and the indolent. Start all together, and these causes will soon make a great difference.

It is evident that with small class intervals reassignment of any of these pupils who have lost their standing in their classes is an easy matter. The system of small class intervals only takes advantage of the necessary division into classes, and would not have new divisions formed simply for the sake of making short intervals. Pupils who are irregular in attendance, or who begin school in the middle of the year, or who are immature, have to be dealt with even under the old systems, and is it possible to deal with them satisfactorily? They form nearly or quite one-third of all the pupils enrolled.

There is a perpetual diminution of pupils in the higher grades, occasioned by final withdrawal from school, and, on the other hand, there is a perpetual accession of numbers from below. Not to readjust periodically would leave the classes of the high-priced and most experienced teachers very small, while the classes of the teachers of least experience and smallest salaries would be filled to overflowing, and it often happens that pupils are refused for want of room in these grades when there is much room in the upper grades.

Instead of adjusting this at the end of the year, let it be done as often as needed by promoting a few of the best pupils in each class to the next higher. This will not (*a*) isolate the poor pupils by themselves, for into each class the best pupils will come from below; (*b*) nor will it fill the upper classes will brilliant, superficial, precocious children, for the test of promotion will be maturity—ability to do the work of the higher class, and if any other standard is used the evil will speedily correct itself, inasmuch as the immature pupils thus promoted will remain at the bottom of the higher class, and will not get promoted again until after they are rejoined by the rest of their class; (*c*) nor will it on an average cause pupils to change teachers any oftener than the old system. In fact, unless withdrawal from school in the upper grades makes room for the transfer of pupils, they can not be transferred from one teacher to another, but the readjustment must be

effected in part by assigning incompetent pupils to lower classes. The actual depletion of upper grades, including the high school, however, is sufficient to allow of the "sifting-up process" to a sufficient degree to make all needed adjustments. If each teacher has two classes and one-fourth of each class is promoted and joined to the next every ten weeks, the average stay of each pupil in her room will be two years; if one-third is promoted each time, one year and a half will be the average stay under each teacher. The maturest and ablest pupils will stay a less time than the average, while the immature and weak will stay for a longer time. The maturest and ablest pupils need less individual help and less psychological study of their idiosyncrasies on the part of the teacher.

Of course it is understood that these promotions are followed by a review of studies on the part of all classes into which promotions are made. Frequent reviews are essential to thorough work and essential to teach pupils how to study.

Under this system of small class intervals and frequent opportunities for promotion, there is not so much high pressure and cramming, nor, consequently, so much danger to the health of pupils. If the pupil does not get into the high school on this occasion, ten weeks more are soon passed, and a review of his studies for that length of time will not seem unreasonable. If he is very thorough, he will overtake many of his former companions who will lose ten weeks, for one cause or another, in their future course.

This frequency of examinations for admission to the high school is not based on the expectation that every grammar school will graduate a class each quarter, for that would indeed imply too much change of teachers; but each grammar school will send one or two classes a year and at such times in the year as they are prepared, at one time, at the close of the first quarter; and then again perhaps at the close of the third quarter, just as it may happen; but there will be enough pupils admitted to the high school at the close of each quarter to form one or more new divisions.

Reclassification does not mean a thorough reorganization of classes. It may take place on the promotion of one, two, or a dozen pupils from one class to the next. The system here recommended is designed purposely to prevent such complete reorganizations as are necessary when a class changes teachers and is divided and united with other classes. It substitutes a gradual process for such violent measures.

This system has been in practice in St. Louis and Chicago and other Western cities, so far as lower grades are concerned, for at least twenty years. The effect of the high-school examination coming once a year was, however, to prevent the application of the system in the highest grades of the district school. The object of the present discussion is to bring out the merits of the system as one to be universally applied throughout all grades of common schools.

FROM THE ST. LOUIS SCHOOL REPORT OF 1874–75, BY W. T. HARRIS, SUPERINTENDENT.

In St. Louis there is no attempt to bring all classes within the same grade to one standard of advancement, so that, e. g., in January, all pupils within a given grade shall have arrived at just the same point in a study. At all times there are new classes just beginning the work of a grade, or year's work, in some one of our schools. The classes are not separated by intervals of one year in their work, but by irregular intervals varying from six weeks to twenty. It is considered desirable to have these intervals small, so that reclassification may be more easily managed. Pupils who fall behind their class for any reason (such as absence, lack of physical strength, or of mental ability) may be reclassified with the next lower class without falling back a year and thereby becoming discouraged. Pupils who are unusually bright or mature may be promoted to the class above, or form

new classes with the slower pupils of the class above who need to review their work. Thus it happens that in a district school there is a continued process going on, the elements of which are as follows: (1) The older and more advanced pupils are leaving school for business or other causes. This depletes the classes of the most skillful and best paid teachers who are usually placed in charge of the most advanced pupils. Again, there is at all times of the year an influx into the lower grades of pupils who have just completed their sixth or seventh year and are now anxious to begin their school career. Thus the pupils in the primary rooms of our schools tend continually to be overcrowded. (2) To correct this continued tendency which overcrowds the rooms of the least skillful and poorest paid teachers and gives small quotas of pupils to the most skillful and best paid teachers, from time to time (usually once in ten weeks, but oftener in some schools), each class is sifted and its most promising pupils united with what remains of the next higher class (i. e., with the not-promising portion of it—those who, for absence, or dull intellect, or weak wills, fail to keep up with the best). (3) To make room for this transfer, a portion of the highest class is sent to the branch high schools. (4) The number changed from class to class is usually small. The disturbance in classes is very slight, compared with the advantages gained by the teacher in being relieved of the necessity to drive the laggards and drill and cram them to make them keep up with the average of the class. The teacher was once obliged to spend most of her time upon the dull ones in the useless endeavor to force them to make up lost time or to equal the strides of the more mature, more regular, or more brilliantly gifted pupils, and, of course, these latter pupils lost proportionately, and the net result of the process was to overwork the incompetent and to hold back the competent ones. The teacher, in the vain effort to hold together the extremes of her class, separating more widely every day till the end of the year, became cross and petulant, and sank continually into the abyss of drill-machine pedagogy.

Under our present system we can make room, when needed, in the lower grades, and fill up the classes of our skillful and high-priced teachers.

II. THE ELIZABETH PLAN OF GRADING.

BY WILLIAM J. SHEARER, SUPERINTENDENT OF SCHOOLS, ELIZABETH, N. J.[1]

Of the many difficult problems which confront those who are responsible for the organization and administration of the schools, no other one is more perplexing than this one of grading. No other one affects more vitally the present and future welfare of the pupils in the schools. No other one is of such interest to the parents who are solicitous for the progress of their children. No other one is of more immediate interest to the principals and teachers who have been compelled to work under the present mediæval plan, which has long since outlived its usefulness. No other one is such a source of worriment to conscientious superintendents who realize that the system of grading, which was intended faithfully to serve the children, has become their tyrannical master.

All must admit that teachers vary greatly in knowledge, power, skill, and many other ways affecting their efficiency. None dare deny that the children of every grade differ widely in age, in acquirements, in aptitude, in physical endurance, in power of attention, in their rate of mental development, in the time of entering school, in the regularity of attendance, and in many other ways influencing their progress; yet, because of the manner of grading and promoting, the graded school

[1] From the Proceedings of the Department of Superintendence of the National Educational Association, at its meeting in Chattanooga, Tenn., February 22–24, 1898.

tends to keep all of the same grade in intellectual lock-step, not only month after month, but year after year for their whole school lives. Children are not alike in ability or in any other way, and God never intended that we should be held responsible for making them alike. Why, then, should we put them in so-called "educational mills" and attempt to grind them out alike, crushing out that individuality which He meant should be a guide to their education and usefulness, and not a hindrance thereto? Is there any reason why we should labor to produce uniformity of tastes, of character, of aspirations, of ability? Is not individuality of more importance than evenness of grading? Is it not the divinity of the child? Should it not be watched for and discovered, that it may be carefully studied and lovingly guarded? Does not biography teach us that those only have become distinguished who have developed a love for work along certain lines? Is it not time we stop finding fault with teachers because, in spite of all these mentioned differences and many more unmentioned, but not undiscovered ones, they can not produce "symmetrical nonentities?" Should the teacher, limited in power and by conditions, be criticised because she can not overcome the differences predetermined by the Almighty?

Surely it is time that the friends of our grand public schools, which are growing in efficiency at an ever-increasing rate, should speak plainly of the defects of the present system and earnestly work for its improvement.

The Elizabeth plan is not an individual plan, but is the result of an attempt to work out a system which will so combine the advantages of class, group, and individual teaching as to make it possible to suit the instruction to the needs of the individuals and enable each to go just as fast as the work can be done well, and no faster. It is no mere theory, but is a plan which has stood the test of a ten years' trial, and the claims for which are based on the good results which have followed its adoption in several cities under varying and unfavorable conditions. The plan described is in use in every class in the city of Elizabeth, as well as other cities.

CHARACTERISTIC FEATURES.

In place of basing the promotion of pupils, in whole or in part, upon a promotion examination, it is determined by the teachers' careful estimate of the pupils' ability to do advanced work. A premium is put upon the character of the work done day by day, rather than upon the amount of "stuffing" which can be done in preparation for the examination. Thus the pupils are furnished a moderate and continuous stimulus instead of an excessive and spasmodic one. The teaching test is a necessary part of all true teaching, but the promotion examination prevents broad and intelligent teaching, makes out of the teacher a grind, and turns out machine pupils. It is not a good test either of the ability of pupils or of teachers. It is a great temptation to deceit and causes many mental wrecks.

Pupils are promoted to advanced work whenever ready for it, instead of being promoted at a time arbitrarily determined. Surely, there is no good reason why the time of year should determine a pupil's promotion to advanced work. All must agree that it should be determined by acquired ability rather than by lapse of time. That, under this plan, it is entirely feasible for pupils to go forward at any time is shown by the fact that, during the past year, 60 per cent of the pupils did so. But for this plan, all these would have had to mark time until the rest were ready to go forward.

Instead of having pupils roughly sorted into large, loosely graded classes, in which the classification must grow more and more unsatisfactory as time passes, those of very nearly equal ability are placed together in a room. In the essential branches the classes are still more accurately graded, according to ability, into small divisions. Extra divisions are made when necessary and are not continued longer than they are needed properly to provide for the important differences in

the pupils. This is done in such a way as not to greatly increase the work of the teachers. The number of divisions in a grade varies with the number of rooms of the same grade in the building, with the importance of the subject, with the efficiency of the teacher, and with other limiting conditions.

The number of divisions in each subject, as well as the places for individual instruction, is also determined by these conditions, after a careful consideration of the subjects in each grade and the records of several thousand pupils in the different grades. The number of pupils in each division also varies with the conditions. The larger the number of pupils to select from, the larger the number that can go together for a time without injury. The aim is to have pupils with others of about equal ability, for the nearer the pupils of a class are in ability and attainments the better can the instruction be suited to their needs, the greater is the power of emulation, the larger the number that can successfully be taught together, the easier it is to hold the attention and fix it upon the subject to be presented, and the better the mental training that can be given. While the usual plan provides for but eight divisions below the high school, this method has from thirty to sixty. In his paper read at the last meeting of the National Educational Association, Dr. Harris said: "Thirty classes between the first and the eighth years are possible in large schools in cities. That all cities do not avail themselves of this possibility is one of the most serious defects in American supervision."

Under the usual plan the distances of the classes from each other, and other unfavorable conditions, make it almost impossible for pupils to pass to higher classes, save at the regular moving times. Yet authorities agree that reclassification is the only way of saving the pupils from the evils of the graded schools. Statistics prove that sooner or later nearly all of the pupils suffer because of this inability of the teachers to reclassify them. Under this plan pupils can easily pass from one division to another at any time, when they are found to be either ahead or behind their companions. The need of reclassification, as well as its feasibility under this plan, is shown by the fact that during the past year almost 70 per cent of the pupils were moved to other divisions between the regular times for promotion. This year an epidemic of measles, etc., has caused not less than 30 per cent of the pupils to lose time. Under the usual plan all these would have to dangle at the foot of the class and lose a year. Under this plan they return and take up the work where they left it, and up to February 16, 1898, 54 per cent had been reclassified, though but a small proportion (about 10 per cent) of these had changed teachers. This was done in such a way as not to hinder, but greatly facilitate, the work of the teachers.

Instead of compelling teachers to take all pupils over a given amount of the course by a given time, this plan allows teachers to advance just as far and as fast as the ability of the pupils will enable them to do the work well, and no faster. Not only do teachers vary greatly in efficiency, but pupils and classes differ in many ways, as before stated; therefore it is an outrage to require the same amount of work of all, regardless of the different conditions. Surely this making of the time limit the same for all is the greatest mistake of our schools, both public and private. Why should any teacher be criticised because she can not furnish the brain cells, health, or conditions which some need to keep up with their more gifted companions?

In place of almost entirely losing sight of the individual this plan demands attention to the peculiar needs of each. Under the usual plan, as the pupils are crowded into large classes, and all are expected to cover the same amount of the course in a given time, the poor teacher is forced to forget that the class is composed of 50 individuals, and to think only of the fact that all must be at a certain place by the time fixed for all to move; therefore she dare not think of the needs of the individual pupils. Under fear of criticism she tries to stuff all with the same amount of indigestible matter in the hope that they will appear big enough

to pass the useless examination for promotion. Fortunately the Almighty has provided the children with good forgetters, and that which would be a mental burden and would result in great injury is soon forgotten. Under this plan attention to the individual is not only encouraged, but required. In the essential branches pupils work in small classes, and also work as individuals at those points where experience has shown there is greatest need of individual work. Thus the teacher comes into close contact with each pupil, than which nothing is more important. For proper mental development there must be this contact of the mind of the teacher with the mind of the pupil; the separate study of its needs and the separate ministering to the needs which are peculiar to it. Only thus can the strong mind of the true teacher come into life-giving contact with the weaker mind of the pupil for the purpose of restraint, guidance, and development. But while the effort is made to secure all the advantages of attention to the individual, care is taken to retain the many advantages of class and group instruction.

Pupils are generally moved forward by companies and no record of their ability, acquirements, or mental, oral, or physical peculiarities is sent with them. Before the new teacher learns these, many of the pupils become discouraged because they are not understood, and for this or other reasons quit school or get but little benefit therefrom. * * * Under this plan, such a record is sent with the pupil that, after a short study, the new teacher has the benefit of all that the previous teachers have been able to learn of the pupil. The record shows not only what the pupils are worth in each branch, but also any defect of vision or hearing, and any other fact which may have a bearing on the character of the work which may reasonably be expected of each. Difficult cases receive special attention, and suggestions as to their management are given for the assistance of their future teachers.

I have mentioned, but briefly, ten characteristics of the plan in use in the city of Elizabeth. Time does not permit even a brief consideration of the individual records of pupils, the extra-promotion blanks, the pupils' reports, the record of work done, the report of principals, management of periods for individual instruction, arrangement of programmes, certificate of time gained, means of making sure of thorough work, and many other devices, which ten years' experience with this plan has proven to be most valuable aids in securing results without asking too much of teachers and without unnecessary risk to the superintendent.

The proper consideration of any one of a score of points mentioned would have required at least as much time as is devoted to this paper. Having spoken briefly, I have necessarily spoken subject to misunderstanding, misrepresentation, and criticism. However, at this time I can do no more than mention some of the beneficial results which have followed the adoption of this plan since its introduction into this particular city a little over two years ago.

A FEW OF THE BENEFICIAL RESULTS.

The instruction is accurately suited to the needs of the pupils of each division. That the instruction should be suited, both in matter and method, to the ability and attainment of those to be taught is a fundamental pedagogical axiom, upon which all others depend and with which all others should be in harmony; yet all know that it is violated in each recitation of nearly every school of our land, for the extremes of the classes can not be benefited by the same instruction. Accurate adjustment of the instruction is possible under this plan, for the reason that pupils of nearly equal ability are always together.

The most careless observer of children knows that they love to do what requires a reasonable amount of effort. In idleness only is there misery for pupils and teacher. When the pupils were so closely graded that work suitable to all could

be assigned, the tendency to idleness almost vanished, and the need of punishment was greatly diminished in all classes, and entirely disappeared from many. Under the usual plan, all know that the brighter children are not kept busy; therefore they get into mischief, for the idle brain is still the devil's workshop.

Under the usual plan pupils are not thorough in the work passed over, though they spend far more time than should be required to do more work well. That they should be thorough in the essential work none dare deny. That many are not thorough most teachers of experience are not slow to admit. Under this plan all other things are secondary to thoroughness in the essentials. This is easily secured, for teachers are not expected to take pupils faster than they can do thorough work. It is no longer wondered why pupils went to school so long and knew so little when they stopped.

All know that, under the usual plan, the bright are injured mentally and morally by being held down to the pace of the slowest; the plodders are likewise injured by being continually driven over the work faster than they should go. By this plan the brighter pupils are allowed to move forward as fast as they can do the work thoroughly. The slower ones go no faster than they have the mental ability to do the work well. The mental and moral benefit resulting from this can scarcely be overestimated, and it is perhaps the most valuable result of this plan.

Statistics prove that a much larger proportion of the pupils remains in school until the higher grades are reached. In every grammar school in the city there has been an increase in the proportion of pupils in the higher grades, the average per cent of increase for the different districts being about 10. Surely this is an important matter, for in some cities 90 per cent of the pupils do not reach the grammar grades, and the reports show that 81 per cent of all the pupils in the graded schools of this country are in the four lowest years of a twelve years' course.

On all sides much regret is expressed that so few pupils reach the high school. Less than 2 per cent get to the highest grammar grade. Since this plan of grading was introduced two years ago the number attending the high school has more than doubled, though the course of study has been strengthened.

All deprecate the fact that pupils entering the high school are from 1 to 5 years older than they should be. During the past two years the average age of those entering the Elizabeth High School has decreased more than 1 year, while the classes about to enter will still further reduce this average.

As the schools are generally managed, if any but the very brightest fall but a short distance behind the class, they must stumble along at the foot of the class and lose a year when but a month or two behind. Because of sickness, or some of a hundred other reasons, nearly all of the pupils do lose time, and therefore fail to keep up with their companions. Statistics gathered in different cities show that 80 per cent of the pupils lose from one to four years, and for every 100 pupils in the schools examined there had been from one hundred to three hundred years lost. Under this plan, if pupils fall behind their class, they drop into a class but a short distance behind the one left. As promotion may come at any time, this lost ground is easily recovered. The records in Elizabeth show that, except for absence, very few lose any time.

As under the usual plan it is very hard for pupils to go to advanced work at any other than the time for regular promotions, it is readily understood why but few pupils gain time. Most of those who seem to do so really lose the time later, because they have omitted much essential work. Under this plan 90 per cent of those who go through the primary grades or further will gain from one to four years. The teachers' records of several thousand pupils show that during the past year over 80 per cent of the pupils in Elizabeth gained from one to seven months' time, while the average gain was over three months. This they did without any urging and almost without their knowing it.

In most schools pupils recite nearly all of the time, and there is but little time left for the preparation of lessons in school, where most of the lessons should be prepared. For this reason, either the lessons are not prepared, or they are prepared under the direction of the parents, who should not have to instruct their children, even if they are qualified to do so. With this plan the pupils have more than one-half of their time in school for the preparation of their lessons. Thus they may be prepared under the direction of the teacher, who is best qualified, both by knowledge and experience, to give the pupils the assistance which they should have, and whose duty it is to relieve the parents of this task. Time is provided, both morning and afternoon, for individual help.

Intelligent principals and teachers realize the weakness of the usual plan. More than 90 per cent of the principals and teachers who have worked under this plan have given, in writing, their reasons for preferring it to any other.

As published, these opinions show that the benefits to the teachers are as many and as marked as those reaped by the pupils. When the plan was started, all were opposed to what they thought the plan would be. On all sides interested parents have expressed great satisfaction with the results obtained.

If pupils receive the same amount of instruction as they would under the usual plan, they would get it in much less time. Pupils now average a loss of about two years. Under this plan they will average a gain of not less than two years. Thus there would be saved to the district what it would cost to instruct a pupil for that time. When this is multiplied by the number of pupils, the financial saving becomes apparent. Add to this the amount saved by the lengthening of the pupils' productive lives and the gain is enormous, though not to be compared with the gain in improved mental habits.

III.—THE SEATTLE PLAN OF PROMOTION AND CLASSIFICATION.

BY FRANK J. BARNARD, SUPERINTENDENT OF THE SCHOOLS OF SEATTLE, WASH.

1. The Seattle schools consist of a high school, grammar schools, and primary schools.

2. The high school is divided into four classes, first, second, junior, and senior, each of which, beginning with this year, is subdivided into two "divisions," first and second.

3. The grammar schools are divided into four classes, A, B, C, and D, each of which is subdivided into as many "divisions" of 20 pupils each as the number of pupils enrolled and the number of teachers employed in the different buildings will permit. The divisions are designated first, second, third, fourth, etc.

4. The primary schools are divided into four classes, A, B, C, and D, each of which is similarly subdivided into "divisions," designated first, second, third, fourth, fifth, etc.

Large buildings or districts afford better opportunities for close classification than the smaller ones, the South district having ten "divisions" of D primary pupils taught by five teachers, and higher grades in proportion, while the Mercer district has six divisions of a corresponding class.

The word "year" is not used in the plan of classification for the following reasons:

1. The pupils are classified by "divisions" in strict accordance with their abilities, and as all pursue the same course of study, it is evident that a sixth division of a D primary, for example, will require more time to complete the work outlined for the D primary than will be required by the pupils of the first division, who perhaps may complete the work and begin that of the C primary long before the expiration of the "school year."

2. The school year varies in length from eight to ten months.

As the plan was devised by the writer and introduced in this city some years ago, the following extract from the published Seattle school report for 1891-92, page 64, may serve to more fully explain the details:

The course of study, promotions, and classifications are questions so intimately connected that a discussion of one naturally involves the others.

School men have for years been attempting to answer the questions, "How shall we shorten the course of study?" "How enrich it?" One proposed solution is to almost entirely abolish arithmetic, grammar, and geography, thereby shortening it, and bringing down into the grammar schools such high school studies as German, French, Latin, geometry, algebra, etc., thus "enriching" the course of study below the high school. These solutions are obtained by but one rule, viz, "Save time by the sacrifice of quantity"—that is, win the race by throwing overboard part of the cargo. We all admit that for a large number of our boys and girls eight years is too long a time for the work below the high school. Many could do the work in six years, some in less time, while others, naturally slow, though sure thinkers, would require full eight years.

The questions of time and quantity are entirely different factors. Quantity is the course of study itself, while time is the number of years necessary to complete it. If, then, a certain factor, quantity, made up of more or less arithmetic, grammar, geography, spelling, reading, etc., is required for admission to the high school, why not classify the pupils as to enable them to take the quantity and enter the high school in the shortest possible time? The time of the course of study can thus be shortened for different pupils. Pupils thus enabled to enter the high school in less than eight years take up the enriching studies of German, French, Latin, etc., under the instruction of competent and experienced teachers, but in the high school, not below it—that is to say, the pupils hasten forward toward the "enriching" point, but the "rich" pabulum is not brought down to them.

Such a plan would permit many pupils to complete the entire course of study in the elementary schools and take two years in the high school by the time they are 14 years of age. Pupils having once entered the high school would be apt to remain in school, and that department would thereby be greatly strengthened and enlarged.

How can such a plan be put into practical operation? Stated times for promotions will not accomplish it; semiannual promotions will not solve it.

In my opinion the only solution is to classify pupils strictly according to abilities and qualifications and then allow them to master the quantity (the course of study) in such time as they can do the work well.

To illustrate, suppose there are in a certain school 80 pupils in the A primary grade. I would divide them into four divisions of 20 pupils each, classifying them strictly according to abilities. To one teacher I would give the first and second divisions, to another the third and fourth divisions.

To the teachers and pupils of all the "divisions" I would say: "Now, the theory upon which the course of study for the fourth years is constructed is that it will take one year to complete it, but if you can do the work thoroughly and easily in less time, why do so, and then at once begin the work of the fifth year, overtaking the lowest 'division' of that class, if possible." This means daily promotion. Progress is constant. The "first division" of one class will overtake, for a time work with, but finally pass the lowest "division" of the next higher class, while the lower "divisions" will go steadily forward, many of the pupils "working up" to higher "divisions" of the same class. In schools like the Denny, where there are more than two teachers to a grade, the classification can be still more thorough by having a greater number of "divisions" in each grade.

The accompanying table illustrates the plan:

Classes and divisions.	D primary. Months.										C primary. Months.									
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
First	×												×							
Second	×										×	×								
Third	×								×		×									
Fourth	×						×			×										×
February class					×											×				

Classes and divisions.	B primary. Months.										A primary. Months.									
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
First						×													×	
Second				×												×				
Third		×											×							
Fourth										×										×
February class						×										×				

Classes and divisions.	D grammar. Months.										C grammar. Months.									
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
First												×								
Second								×												×
Third				×											×					
Fourth										×										×
February class						×										×				

Classes and divisions.	B grammar. Months.										A grammar. Months.									
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
First					×													×		
Second												×								
Third						×											×			
Fourth										×										×
February class						×										×				

The crosses (×) represent the different "divisions." The classification of the pupils and the rate of progress given is simply an ideal one, and represents a class entering the first year primary in September, before classification, and its further progress after classification through a course of eight years, individual reclassification being frequent. The progress—i. e., direction of the "divisions" as represented in the table—is from left to right, and the objective point is the high school. The vertical columns, headed by the names of the months, serve to show the relative position of the "divisions" of higher classes, for, while the progress of but one class is here represented, other classes are ahead and behind in the race, and hence their positions are also shown. The rates of progress for the four "divisions" are 10, 11, 12, and 13—i. e., the fourth division is supposed to do ten months' work in ten months, the third division eleven months' work in ten months, and the second division twelve months' work in ten months, and the first division thirteen months' work in ten months. The term or expression "months' work" represents the factor quantity or course of study, and is used as a mere matter of convenience.

If we let the word "mile" represent "months' work," the word "hour" represent "year" (ten months), it being assumed that the journey (course of study) is 80 miles (months) long, the chart will be easily understood. The problem of the first division would then be, "How many hours will it take to complete a journey of 80 miles, traveling at the rate of 13 miles an hour?" Answer. Six and two-thirteenths hours (years). A study of the chart will thus show that the first division will be able to complete the course in six and two-thirteenths years, the second in six and two-thirds years, the third in seven and three-elevenths years, and the fourth in eight years. I am decidedly of the opinion that the rates of progress assumed for the first and second divisions are much too low. The subclassification of the February class is not given, as its members would soon be able to "work into" different "divisions" of other classes. It will be seen that such a plan of classification affords opportunities for frequent transfers of pupils from higher to lower "divisions," or vice versa. Such a classification of pupils will give those needing it more careful attention, as they will have more of the teacher's time, while those able to think and work more rapidly will be able to go ahead, and not be held back by their less fortunate mates.

The one rule necessary to the complete and perfect success of such a system is, "Study the capacities of each individual pupil." Some minds develop early, others late. The dunce of the class, if kept chained to the "honor pupils," may always remain a dunce, but if unchained, if studied and allowed to study under proper directions and influence, he may become the wonder of the school, the genius of the age.

RELIABLE RECORDS NECESSARY.

As, under such a plan, many individual pupils will "work ahead" or "drop back," and entire "divisions" may, with their teachers, be promoted and begin the work of the next class in the middle of the year, a few important items of information should be recorded very carefully and kept ready for use in case of transfers, withdrawals, and statistical comparisons and information.

The following are the most important:

To be recorded in September—

1. Name, age, birthplace, and residence of pupil.
2. Date of first enrollment in lowest division of D primary class.
3. Total months' attendance, all classes and schools from date of first enrollment to date, including temporary absences.
4. Received by present teacher from what division, class, school, and teacher?

To be recorded in June—

5. Total months' attendance from date of enrollment in D primary to date of promotion to present class.
6. Total number of months in course from D primary to and including last class from which promoted, assuming time required for work of each class to be ten months.
7. On above basis, total number of months gained or lost.
8. Assigned for next year to what division, class, school, and teacher.

PROMOTION STATISTICS.

The first practical results of this plan are now in evidence, as many pupils who entered our schools at the time of the adoption of the system (1891–1892) are now in, or about to enter, the high school. Owing to incomplete records during the first few years the summaries given below are not absolutely accurate, but being approximately so, they serve to show the first practical results. (See promotion statistics below.)

Some unexpected results were reported by individual teachers; as, for example, some reported "no promotions during the year," and hence no per cent; while others who promoted a division in October, and keeping the same pupils but doing the work of the next higher class until the end of the year, completed that course of study also, and therefore reported one division as twice promoted in the same year, or 200 per cent. Both reports are technically correct.

REQUIREMENTS FOR PROMOTION.

Primary classes: Average, 70; no study less than 50.

Grammar classes: Average, 80; no study less than 60.

High school: Average, 80; no study less than 65.

The standing of pupils in the grammar and higher primary classes is determined as follows: First month, by written tests, questions prepared by the teacher. Second month, recorded opinion of the teacher, but no written or oral tests except as required in regular lessons and recitations. Third month, one regular recitation in each subject to be in writing once each week and graded and averaged for the month. Such recitations are not to be announced and are to be conducted at irregular intervals and unexpected hours. Fourth month, written tests; questions to be prepared by the principal. Fifth month, same as second month. Sixth month, same as third month. Seventh month, same as first month. Eighth month, same as fourth month. Ninth month, same as third month. Tenth month, same as second month.

PROMOTION STATISTICS.

	Primary schools.				Grammar schools.				
	D.	C.	B.	A.	D.	C.	B.	A.	Total.
Number belonging last two months whose records follow	1,353	1,016	817	738	656	442	357	250	5,635
Number of pupils who have gained time since entering D primary	272	263	242	243	307	224	207	177	1,935
Number of pupils who have lost time since entering D primary	847	586	499	442	305	167	124	61	3,022
Number of pupils who have neither gained nor lost since entering D primary	394	191	123	117	81	61	53	33	1,053
Total months' time gained by entire grade	595	1,167	1,373	1,629	2,298	2,290	2,042	1,728	13,122
Total months' time lost by entire grade	3,812	4,778	4,839	4,882	3,216	1,269	1,020	535	24,451
Balance—months' time gained by entire grade	.....	.....	.....	.....	.....	1,021	1,022	1,193	.....
Balance—months' time lost by entire grade	3,217	3,711	3,466	3,253	918	.....	.....	.....	11,339

HIGH SCHOOL.

	First year.	Second year.	Third year.	Fourth year.	Total.
Number belonging last two months whose record follows	160	48	72	35	315
Number of pupils who have gained time since entering D primary	96	35	58	35	224
Number of pupils who have lost time since entering D primary	23	5	3	.....	31
Number of pupils who have neither gained nor lost since entering D primary	41	8	11	.....	60
Total months' time gained by entire grade	1,325	1,205	866	793	4,189
Total months' time lost by entire grade	214	105	22	.....	338
Balance—Months' time gained by entire grade	1,111	1,103	844	793	3,851

ON A BASIS OF TEN MONTHS' TIME FOR EACH CLASS.

Table showing per cent of gain since entering D primary for B and A classes in grammar schools and all classes in the high school.

	Grammar classes.		High school.			
	B.	A.	First.	Second	Third.	Fourth
Per cent of class who gained 5 per cent or more in time	44.8	60.5	55.6	75.3	63.5	94.2
Per cent of class who gained 10 per cent or more in time	37.1	46.1	41.5	72.1	41.9	74.3
Per cent of class who gained 15 per cent or more in time	28.6	37.7	19.9	39.8	31.0	45.8
Per cent of class who gained 20 per cent or more in time	17.8	23.5	11.7	29.1	21.6	31.5
Per cent of class who gained 25 per cent or more in time	12.4	15.4	6.5	8.6	8.1	20.0
Per cent of class who gained 30 per cent or more in time	10.3	11.2	5.9	7.5	2.7	5.7
Per cent of class who gained 40 per cent or more in time	2.4	3.4	.6	0	0	5.7

TRANSFER CERTIFICATE.

To the principal of ——— building:

Please to receive ——— ———; residence, ——— street, No. ——, who is hereby transferred from ——— School, ——— grade, ——— division, ——— ———, teacher, to the ——— School, such grade and division as position of class given below will permit.

Yours, respectfully,

——— ———, *Principal.*

——— ——, 189—.

POSITION OF CLASS.

Studies.	Subject.	Page.	Article.	Remarks.
Deportment				
Reading				
Spelling				
Writing				
Arithmetic				
Language				
Geography				
Music				
Drawing				
Physical culture				
Civics				
History				
Physiology				
Times tardy				
Days present				
Days taught				

The following record card is sent with this certificate:

RECORD CARD.

Surname.	Given name.	Age.	Grade.	Class.	Division.	Room.

Teacher, ——— ———; district, ———; born, town of ———, State or country ———, year ———, month ———, day ——: parent or guardian, ——— ———; residence, No. ———, ——— street. Memorandum, school year ending ———, ——;

first entered school, D, primary, month of ———, year ———; promoted to present class, last day of the month of ———, year ———. If first entered school Seattle check here ———; total attendance between above dates (including temporary absences), ——— months. Assuming ten months for each class, total time in course from first day in D primary to and including class from which promoted, ——— months. On above basis total number of months lost, gained (underscore), ——— months. Past record, conduct, ———; attendance, ———; habit of study, ———: health, ———; rank in class, ———; received from ———, district ———; ——— ———, teacher.

IV.—PLAN OF THE NORTH-SIDE SCHOOLS OF DENVER.

BY JAMES H. VAN SICKLE, DENVER, COLO.[1]

Local conditions can not be ignored in a scheme of promotion. Conditions affecting the problem in my district are as follows: Large, centrally located buildings, enrolling eight grades; buildings of four to six rooms tributary to the large buildings for the convenience of small children for whom the long walk would be a hardship.

The Chicago plan (each building a law unto itself in the matter of promotions) could not be applied where such an interdependence exists all along from third to sixth grade. The Cambridge double track, or long-and-short course plan, would unduly complicate the machinery. The separation of a class into small, independent groups with separate lessons involves a loss in the scattering of the teacher's effort for which the rapid movement of the strongest group is no adequate compensation.

Our circumstances permit promotion in lower primary grades without regard to fixed dates, but about the third grade we find it best to work toward fixed dates. The half-year interval between classes has proved most serviceable after the fourth grade. We admit two classes to the high school each year. As far as possible, adjustments needed between September and June are made within the room, so that a change of teacher may not be necessitated. The classes or divisions in a room vary in number and relative size. They change in both these respects from time to time, according to circumstances.

It will be seen that this plan, so far, is practically the plan recommended in Circular of Information, No. 7, published by the Bureau of Education in 1891.

After an exhaustive discussion of the class intervals used in seventy cities, we find on page 20 of this circular this statement: "Of the three class intervals above considered (the year, the half year, and the term or quarter), the half year seems to possess the most advantages and the fewest objections, and this is specially true in grades below the high school, possibly excepting the first and second grades, where a shorter interval may be desirable. This interval is sufficiently short to permit needed promotions of individual pupils, and it is sufficiently long to prevent a too frequent readjustment of classes and class work."

This plan is easily understood and easily administered, and therefore likely to be handled by the average school principal with greater effectiveness than a more complicated one. A class interval so long as to prevent frequent reclassifications and irregular promotions and brief reviews is not now generally defended.

My contention is that the short and varying interval in the primary grades, with the half-year interval in the grades above, is a sufficient development of the mechanism of gradation to safeguard individual interests, so far as any mechanism can safeguard them; that, instead of introducing further complications into the machinery of school organization, we shall find a more hopeful field for effort in devising plans for greater flexibility in class management, especially in the grammar grades.

[1] From the Proceedings of the Department of Superintendence of the National Educational Association, at its meeting in Chattanooga, Tenn., February 22–24, 1898.

Even if the members of a class could have at a given time equal knowledge, which is impossible, they would still differ greatly in quickness of comprehension and in working power. This would be equally true of a class of fifteen and of a class of fifty. These differences would manifest themselves in varying degrees according to the changing order of studies during the day. The child who is strong in arithmetic may show less strength in language, while another good in both may need more time in geography or history, and so on in infinite variety; while the average strength of the individuals composing the class may not vary greatly. No matter how carefully we grade, we find these differences.

A recitation, as ordinarily conducted, attempts to secure the attention of all individuals in the reciting class during the entire twenty or thirty or forty minutes assigned to it on the programme. All members of the class attend to the same thing at the same time; though often badly mated in point of speed, they must move at the same pace; the quick wait patiently for the slow; if the pace is rapid enough to keep up the keen edge of interest in the quick, the slow are fairly dragged over the ground; so a compromise is arranged which fits neither. At the first subtle signs of lessening interest the teacher redoubles her exertions in order to chain the wandering eye and check the budding yawn. If she is a teacher of ability, she generally succeeds in this, but at too great a cost in vital force, for the energy put forth by the teacher is out of all proportion to that put forth by the pupils.

The pupils are kept in motion too much by the will power of the teacher; the force is external and temporary, rather than internal and permanent; it tends to produce fitful and spasmodic effort. The pupils attend out of respect for the teacher and from a desire to conform, rather than from any feeling of need. Those naturally quick easily become satisfied with an effort far less than their best. Their time might be employed to better advantage than in listening to repetitions of what they already understand or in spending thirty minutes on what they might do in twenty. Such management makes dawdlers.

The individual plan does not offer an altogether satisfactory remedy even in schools with a smaller assignment of pupils to a teacher than is possible with us. Is it not possible to retain the manifest advantages of the class recitation so often set forth by Dr. Harris, and yet, as the recitation progresses, allow individuals to drop out and do other work more profitable than simply maintaining the semblance of attention?

Feeling that we ought not to put a premium upon the mere act of sitting through a recitation, I have watched with some care for the past three years an experiment in this direction tried in two of our larger buildings. It is an effort to do in a systematic way what a few good teachers here and there have done occasionally. It is, therefore, not an invention, but an adaptation. Some of the purposes kept clearly in view are these: To secure better use of time; to fit each pupil to rely upon his own judgment by often allowing him to share with the teacher the responsibility of deciding what he had better do at a given time; to secure, by means of this individual responsibility, willing effort even on the less agreeable studies, thus keeping the pupil fairly even in his work; to secure more study time in school, where conditions favor concentration, and thus to do away with the necessity of "keeping after school" (staying after school is quite a different matter); to enable a pupil to demonstrate his fitness for special promotion; to secure conditions favorable to enthusiasm in the pursuit of efficiency and knowledge by emphasizing these as ends, instead of placing emphasis upon marks, special seats, or rewards of any kind. The central thought is individual responsibility.

While no two teachers work in exactly the same manner, the plan followed may be stated in a general way as follows: All pupils are held for definite minimum requirements. (In order to afford facilities for greater attainment, each room is provided with its sets of supplementary books and a carefully selected reference

library of from 50 to 75 volumes.) While those pupils for whom the minimum requirement in a given subject is sufficient are mastering a given assignment in that subject, others, capable of doing more, though not yet strong enough in all studies to be able to skip a half year, are, by a process of natural selection, detaching themselves temporarily from the class in order to work on some study in which they are weak, or for broader or deeper study of the topic by means of the reference books, gathering illustrative material, or following out some line of interest approved by the teacher. Those excused may at any time be required to rejoin the recitation to give needed help to others. They are thus continually held responsible for the work in hand. Failure to respond satisfactorily at any time, either in advance or review, is understood to be evidence that the pupil in question had not attained that degree of proficiency which would warrant diverting his attention from the minimum requirement from which he had been temporarily released, and his release is canceled. A few experiences of this kind improve his judgment and make him cautious. He strives to make his acquisitions permanent, not merely for the day. He had better make mistakes early in his estimate of himself and correct them, than to be acting so wholly under prescription that there is no chance for a mistake in this respect. Without this opportunity for self-measurement there is danger that some will develop vanity and conceit, and others excessive timidity, rather than self-respect and confidence. The pupil is in the truest sense educated through occasions for choice.

A pupil may at a given time find the work in arithmetic and geography all that he can do, while at the same time he is making fuller study than some of the rest of a period in history. This he considers a privilege which he works energetically to secure. Another, not so able in history, may get this liberty in some other subject. There will come a time when he may give to the class the benefit of his skill or of his research; thus he has an immediate motive, partly selfish, but not wholly so. He is giving to others. His success awakens a desire in others to be able to make creditable contributions of the same kind; thus all are stimulated to do independent work in spare moments and to find spare moments for independent work. They learn how to find things in books. This is perhaps the most useful single accomplishment that we can cultivate in a child. Books must always be his chief reliance after leaving school.

In a class fairly well graded each pupil will have some study from which it will be safe to release him partially now and then. Thus all get some encouragement from the plan. It secures energetic work without stimulating a hothouse growth. The motive it holds out is a permanent motive and a worthy one.

It is not a plan for hurrying pupils through the grades. This class presents an even front when entering upon a new division or lesson unit of any study. The development work is done with the whole class. One goes no faster than another, but he gets more. One describes a larger circle than another, or, to use an agricultural expression, cuts a wider swath. It is not so much to the pupil's advantage to go through the grades rapidly as to get all that he is capable of getting while he is going through.

The plan tends to even up the pupil in the various studies, since making pleasant excursions in favorite studies is conditioned upon fair attainment in all studies.

It secures for the pupil so much additional study time in school that much less work needs to be carried home, and thus it helps to do away with the idea, prevalent in many homes, that the parents are expected to do the teaching, and that the only duty assumed by the teacher is to check up the work and pass judgment upon its quality.

It allows the teacher to devote time to the less able pupils without robbing the others. The less the brighter pupils depend upon the teacher the better. The aim should be, as rapidly as possible, to make all pupils self-reliant.

It affords opportunity for the development of latent strength, and gives the

teacher a safe basis for determining the fitness of individuals for working with the division a half year in advance. We find that the child irregularly promoted invariably makes an enviable record in the higher class. One hundred and forty-two such promotions have been made in our schools since September last, or 4½ per cent of all promotions. Five and three-tenths per cent of all pupils now in the grammar grades are where they are by special promotion.

In the eighth-grade class this year, 4 have finished, or will have finished, the eight-year course in less than six years, 7 in six and one-half years, 21 in seven years, and 24 in seven and one-half years. Able pupils are not kept marking time, but are advanced whenever they show the requisite strength. The half-year interval does not prevent this. The year interval would add materially to the difficulty.

In the two buildings in which this plan of class management has been systematically tried there has been apparently greater attention to individual needs than in the other buildings. One hundred and sixty-one pupils finish the work of the eighth grade this year in three buildings. In one building, 57½ per cent finish in eight years or less; in another, 62½ per cent, and in the third, the one pursuing the ordinary plan, only 37½ per cent.

I do not mention any of these figures as showing progress at all remarkable, for, by force of circumstances, in all three of these buildings the school day is cut short for all first-year pupils, each child attending but one-half day. Thus a reasonable allowance would be eight and one-half years to complete the course. The figures seem to indicate, however, that in two buildings the plans are more favorable to individual advancement than those used in the third, since I know of no other conditions affecting one school more favorably than another, such as strength of teaching force, nature of the population, etc.

It is not denied that this plan requires more thought and broader preparation on the part of the teacher than the ordinary class plan. But a teacher whose attention is thus directed constantly toward individual needs inevitably gains so much in skill that after a time, all things considered, the work seems easier than before. There is ample compensation for the energy spent in planning work for those temporarily excused from recitation. These are the active spirits who ordinarily find means to divert themselves at the expense of the good order of the room. Kept fully occupied with self-imposed tasks, they cease to be a disturbing factor. The spirit of the room soon comes to be one of self-control and industry. Repression is no longer needed—only direction. A difficult pupil, new to the plan, soon learns that he can not afford to go counter to public opinion. It is not the teacher, but the spirit of the room, that causes him to settle down to earnest work.

Teachers are hampered by their own training. They have not been accustomed as pupils to any freedom in these directions; hence it does not occur to them that it is possible to give their pupils any freedom. They have little faith in the ability of the pupil to use wisely any freedom.

If, as we glance into a schoolroom, it seems to be in perfect order, every child looking at his book, no one whispering, faces all to the front, teacher's desk and pupils' desks models of neatness, we are pleasantly impressed, and we are inclined to say to ourselves: "That is a good school." Whether it is a good school or not depends upon how these appearances are secured. If every choice of occupation and every movement are dictated by the teacher, the school is a very poor school. The pupils must necessarily grow less and less self-reliant.

Unfortunately, we superintendents, by commending these surface indications, and pronouncing those schools good which have them and little else, have encouraged a vast amount of formalism that absolutely prevents freedom to do the best thing possible for the individual. We thus oblige teachers to cultivate that whole brood of artificial incentives so common everywhere, instead of natural and worthy ones.

In the evolution of our schools, those teachers who most carefully observed these outward forms were counted most successful; they were, therefore, most in demand, and hence the type has persisted. Most of us, and most of the teachers associated with us, have been brought up under the system; hence it is hard to break away from it. It is so easy to measure a teacher by this standard; so hard to take less tangible things into account.

I regard it important that the class interval used in the grammar grades shall be used at least in the earlier years of the high-school course. If the grammar-grade interval is one-half year, and yet pupils are admitted to the high school only in September, a large number must be held back at a time when it is very important that they should move forward.

A larger number of those promoted in January enter the high school than of those promoted in June. They leave the eighth grade on Friday, and begin the work of the ninth on the following Monday. No long vacation, with its many opportunities for a change of purpose, intervenes. Ninety-five per cent of those promoted last month at once took up the high-school work. Only 80 per cent of those promoted last June registered in the high school in September. We find the plan no more expensive than the plan of annual admission, since the classes are so large as to require division. Fewer pupils drop out through discouragement, since failure in any study means only a reasonable review of that one study.

Besides carrying the half-year interval through the twelve grades, we attempt to care for the interests of the individual in the high school by making a large number of studies optional. Any pupil not a candidate for graduation may study any subject which the daily programme will permit. All pupils, to quite an extent, make their own courses. Certain studies are required of all pupils alike if they wish the diploma of the school. Aside from this list, which is relatively small, pupils may choose, with the advice of parents and teachers, those studies which appear best suited to their several needs.

Fixed courses, in which all must do the same amount of work in the same time, do not take account of differences in mental and physical strength. Those who can carry all of the work stay in school; others, becoming discouraged, drop out. We aim to provide for all, "the mentally strong and the mentally weak, the physically strong and the physically weak, the permanent and the transient." Those who can not carry four studies may take three; those who can not carry three may, without the slightest loss of self-respect, limit themselves to two.

The official course of study is an inventory of the studies authorized to be taught, with a statement of the aims of the school, suggestions as to the amount of work a pupil should undertake, the subjects characteristic of certain courses, the proper grouping of studies, etc.

At the close of each half year each pupil receives a certificate showing the studies successfully pursued and the number of periods per week devoted to each. When he gets enough of these certificates to show that the official requirements have been met, he receives the diploma of the school, which bears on its face a record of the subjects pursued and the time devoted to each.

Each pupil may work according to his strength by choosing just the number of studies that his physical and mental ability permits. He may take as long a time to earn his diploma as he needs—five years if necessary; or, if possessed of sufficient physical and mental vigor, he may earn it in three and one-half or three years.

The aim of the pupil's effort is the mastery of distinct subjects of study rather than the maintenance of a general average. The pupil does his work more enthusiastically since the studies are largely of his own choosing. His course may not differ materially from one that would be chosen for him by his teachers, but it makes a vital difference in the spirit with which he undertakes it whether he loads himself with work or is loaded by another.

The plan has been in operation in our school for three years. We have noted that the pupils do more work and better work than formerly. More pupils remain in school to complete a course. The development of natural talent is encouraged. Of 102 graduates (three classes) no two have pursued exactly identical courses.

RECAPITULATION.

A class interval less than a half year is desirable in the lower grades.

The class interval may be longer as the pupils become older and able to work more independently.

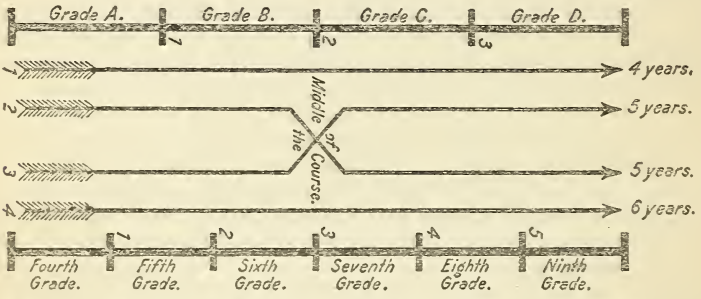
In the grammar grades and in the high school the half-year interval is satisfactory.

As the mechanism grows more rigid, owing to the necessity of consolidating classes at fixed dates, freedom to make class management flexible steps in to the rescue of the individual.

The pupil is educated by a gradual increase of responsibility, and the accompanying necessity of choice, till finally a most important choice, that of his high-school course, is intrusted to him in part.

V.—PROMOTIONS IN THE GRAMMAR SCHOOLS OF CAMBRIDGE, MASS.[1]

The course of study is divided in two ways: (1) Into six sections; (2) into four sections; each section covering a year's work. Pupils taking the course in six years are classified in six grades, called the fourth, fifth, sixth, seventh, eighth, and ninth grades. Those taking it in four years are classified in four grades, called grades



Arrow No. 1 indicates the four years' course; grades A, B, C, D. Arrow No. 2 indicates one of the five years' courses; grades A, B, 7, 8, 9. Arrow No. 3 indicates the other five years' course; grades 4, 5, 6, C, D. Arrow No. 4 indicates the six years' course; grades 4, 5, 6, 7, 8, 9.

A, B, C, and D. When pupils are promoted to the grammar schools they begin the first year's work together. After two or three months they are separated into two divisions.

One division advances more rapidly than the other, and during the year completes one-fourth of the whole course of study. The other division completes one-sixth of the course.

During the second year the pupils in grade B are in the same room with the sixth grade. At the beginning of the year they are five months (one-half the school year) behind those in the sixth grade. After two or three months grade B is able to recite with the sixth grade, and at the end of the year both

[1] From the Cambridge School Report of 1897, prepared by Francis Cogswell, superintendent.

divisions have completed one-half the course of study—the one in two years, and the other in three years. The plan for the last half of the course is the same as for the first half, the grades being known as the seventh, eighth, and ninth in the one case, and as C and D in the other.

There are also two ways of completing the course in five years: (1) Any pupil who has completed one-half the course in two years may at the end of that time be transferred to the seventh grade, and finish the course in three years; (2) any pupil who has completed one-half the course in three years may at the end of that time be transferred to grade C, and finish the course in two years. In both cases these changes can be made without omitting or repeating any part of the course.

It is now six years since the schools were first classified on this plan. During this time 3,065 pupils have graduated from the grammar schools. Of this number, 9 per cent completed the course in four years, 30 per cent in five years, 47 per cent in six years, and 14 per cent in seven years or more.

Of the number who entered the Latin school during the past three years, 21.5 per cent did the work in the grammar schools in four years, 39.8 per cent in five years, and 38.7 per cent in six years. Of those who took the general course in the English high school, 13.8 per cent did the work in the grammar schools in four years, 43.1 per cent in five years, and 43.1 per cent in six years. Of those who took the commercial course in the English high school, 12.1 per cent did the work in the grammar schools in four years, 38.4 per cent in five years, 49.5 per cent in six years. Of those who took the manual training course in the English high school, 9.9 per cent did the work in the grammar schools in four years, 39.5 per cent in five years, and 50.6 per cent in six years.

More than 50 per cent of the pupils entering the high schools did the work in the grammar schools in less than six years, 41 per cent doing it in five years, and 15 per cent in four years. It does not follow, however, that because so many did the work in less than the full time the plan is a good one. It is comparatively easy to carry pupils rapidly over a course of study. The value of the plan is shown rather by the thoroughness with which the work has been done, not in one year only, but in a series of years.

The following table shows how the pupils who completed the course of study in the Cambridge grammar schools in four years and in five years sustained themselves during the first year in the high schools, the results being compared with those of the pupils who were six years in the grammar schools:

Record of three different classes, first year in high schools.

	Four years in grammar schools (average per cents in high schools).	Five years in grammar schools (average per cents in high schools).	Six years in grammar schools (average per cents in high schools).
In the Latin school.	*Per cent.*	*Per cent.*	*Per cent.*
Class of 1897	79.3	72.8	66.9
Class of 1896	80.4	77.0	71.6
Class of 1895	78.7	78.9	76.4
Average for three years	79.4	76.2	71.6
Per cent of whole number of pupils in the classes	21.5	39.8	38.7
In the English high, general course.			
Class of 1897	79.7	78.7	72.2
Class of 1896	85.9	75.1	76.4
Class of 1895	77.3	76.2	73.4
Average for three years	80.9	76.6	74.0
Per cent of whole number of pupils in the classes	13.8	43.1	43.1

Record of three different classes, first year in high schools—Continued.

	Four years in grammar schools (average per cents in high schools).	Five years in grammar schools (average per cents in high schools).	Six years in grammar schools (average per cents in high schools).
In the English high, commercial course.	*Per cent.*	*Per cent.*	*Per cent.*
Class of 1897	76.3	69.0	69.3
Class of 1896	74.8	70.9	68.4
Class of 1895	73.7	73.5	69.8
Average for three years	74.9	71.1	69.1
Per cent of whole number of pupils in the classes	12.1	38.4	49.5
In the manual training course.			
Class of 1897	78.6	67.2	61.7
Class of 1896	79.2	63.5	65.2
Class of 1895	72.6	65.4	65.9
Average for three years	76.8	65.3	64.2
Per cent of whole number of pupils in the classes	9.9	39.5	50.6

From this table it appears that the average per cent during the first year in the high schools of the pupils who were four years in the grammar schools was higher than the per cent of those who were five years in the grammar schools, and that the per cent of those who were five years in the grammar schools was higher than the per cent of those who were six years in the grammar schools.

This does not show that even these pupils were prepared for the work in the high schools. It does show that if these pupils ought to have remained longer in the grammar schools those who spent six years in the grammar schools should have remained still longer, and it also emphasizes the fact that no classification should ever be made that does not provide either for the more rapid advancement of a part of the pupils, or for additional work for those able to do it.

The appointment of a special teacher for each of the grammar schools was an important factor in the success of this plan. In the opinion of the superintendent it was not only a wise measure on the part of the committee, but an economical one. In all but one of our grammar schools there are at least eleven classes occupying separate rooms. If through the efforts of the special teacher only four pupils are promoted from each class who otherwise would spend two years in the same grade, the salary of the special teacher does not add to the cost of the schools, for when a pupil spends two years in a grade it costs twice as much for his instruction in that grade as when he spends one year. If, in addition to this, the special teacher is enabled to help four other pupils from each class to shorten their course by one or two years, the employment of a special teacher is a gain, not only to the pupils in the saving of time, but to the city from a financial point of view.

These statements in regard to the financial side of the question should be modified in a measure. They are made on the basis that pupils remain in the grammar schools until the work is completed.

In connection with this the superintendent desires again to express his conviction that a special teacher could render important service in each of the high schools. It is not expected that efforts would be made to carry pupils over the course more rapidly, certainly not in the English high school, but to render such aid to faithful pupils, in addition to that given by the regular teachers, as will enable them to do their work successfully.

More than 400 pupils enter these schools each year. They come from all parts of the city and from homes representing all conditions of life. Many of these pupils have no one at home to render them assistance, and it is not strange that with new studies and new surroundings they become discouraged and disheartened and leave school. Some of these would be saved from failure by the aid and influence of a special teacher.

VI. THE GRADING AND PROMOTION OF PUPILS.

REPORT OF JOHN T. PRINCE, AGENT OF THE MASSACHUSETTS STATE BOARD OF EDUCATION.[1]

There is no question of school organization at present more important than that of a proper adjustment of conditions to the needs of individual pupils. The assumption upon which most courses of study seemed to be based, that just so much ground must be gone over with equal thoroughness by all pupils in the same time, is the greatest bane of our public school system. The courses in use are probably intended to meet the needs and capacity of pupils of average ability. Such, however, is the difference of ability between the brightest third and the dullest third of almost every class of pupils, that the work thus required is enfeebling to one part while it is discouraging or unduly excessive to the other. To neither group is there the stimulus of success with effort. To one group there is success without effort; to the other there is effort without success. The difficulty, it is feared, is enhanced by the want of ability or inclination on the part of many teachers to adapt each lesson's requirements to the capacity of individual members of the class.

There are some signs of reaction against a system which encourages or permits a dead uniformity of ability and effort. The only fear is that the opposite extreme of individualism will be sought as a remedy. As between the practice by which forty or fifty pupils of all degrees of ability are required to do the same work with nearly equal efficiency, and a return to individual teaching such as was carried on in ungraded schools forty years ago, there is but little choice, although the ill effects of the two practices must be felt in widely different ways. But a choice between these extremes of practice ought not to be necessary. No more useful service can be rendered the public schools than that of devising ways by which the benefits of a class system of teaching will be secured, and at the same time such an adjustment of work be made as will permit pupils of varied abilities to do the most for themselves. To this task many educators have given much time and effort of late. Out of all the plans that have been devised, there should be found some which can be readily adapted to any conditions that are likely to exist. It is evident that no one scheme will do for all. A classification which can be made in large schools should not be made in small ones, and a system of promotion that is feasible in small ungraded schools would be wholly inoperative in large graded ones.

In responses to letters of inquiry to prominent school superintendents throughout the country, concerning plans of classification and promotion, over eighty replies have been received, from which the following facts and conclusions are gathered:

The written examination as the sole means of ascertaining the pupil's fitness for promotion seems to be passing away. Out of the entire number of places reported, there are but seven in which entrance to the high school is determined solely by examinations, and only two in which promotions from grade to grade in grammar schools are so determined. It is pleasant also to record the fact that in only four cities is the determining element for admission to the high school the superintendent's examination alone. The teacher's judgment alone generally determines the class in which pupils of the primary schools are placed. Promotions from grade to grade in the grammar schools of about two-thirds of the places reported are based upon the combined judgment of the class teacher and that of the superintendent or principal. In a few instances the examination by the superintendent or principal is made the determining element in all doubtful cases only, or cases in which the teacher is not able to decide.

[1] Massachusetts School Report, 1896-97, pp. 297-314.

The intervals between classes or grades in about two-thirds of the cities and towns reporting are one year. In the other third the intervals are one-half year or less. In the Report of the Commissioner of Education for 1890–91 returns from 465 cities and towns of over 4,000 inhabitants show the proportion of short intervals to be much greater than this. Several places report shorter intervals for the primary schools than for the grammar schools.

The methods of promotion will first be considered of those places in which the intervals between the classes are one year.

In about one-half of the cities and towns reporting, special provision is made for individual promotions or promotions out of course. Where no such provision is made there are reported either few individual promotions or none at all. Quite a number of superintendents report that the matter is left with teachers, with the request that pupils be promoted whenever they are qualified; but in such cases there is either no report of the number of individual promotions, or else the number of such promotions is so small they may be said to be rare exceptions. A few superintendents seem opposed to double promotions on the ground that some portion of the course is either done slightingly or else entirely omitted, or, as one superintendent says, "Good pupils are spoiled by being advanced beyond their depth merely because they are bright."

Where special provision is made for advancing pupils out of course the widest difference of practice and of results is reported. In some cases the teachers are asked to report all pupils who by superior scholarship or by maturity are deserving of promotion out of course. A list of such pupils is kept by the principal or superintendent, and special facilities are afforded those who desire to be advanced. A few superintendents cause each grade to be divided into two sections, according to scholarship, thus enabling pupils to pass more easily from one grade to another during the year. In the primary schools the pupils of a single class or grade are sometimes divided into three sections or groups in the same way. In one city where the latter plan is followed a modified form of the monitorial system is followed, in which the larger pupils from the highest grades often hear pupils of the lower grades in reading; either individually or in groups of two or three.

The group system of classification is carried out still further in a few towns, as in Leominster, Mass., whose superintendent reports as follows:

> In the lowest grades we divide pupils into four or five groups, higher grades into three and sometimes possibly only two. Pupils pass readily from one group to the next higher without the so-called "jump," whereby a certain amount of work is always lost. Pupils in the most advanced group in a room are doing about the same work as pupils in the lowest division or group of the next higher room. This enables pupils to go readily from one group to another, and at the same time also from one room to another.

Several cities and a few towns report the opening of an ungraded school in each of the large graded-school buildings. In this school are placed backward pupils or pupils who can not be readily classified in existing classes. Here, too, are pupils who are trying to get into a higher grade. The superintendents in their letters and reports speak in unqualified terms of the great good accomplished by the establishment of these ungraded schools. In some places the same end is reached by one or more assistants going from school to school in a building to assist backward pupils or pupils who are trying to get into an advanced division.

A number of superintendents whose schools have the one-year interval between the classses report a plan of dividing the classes into small sections in two or three essential subjects, and of permitting pupils who do especially well in these subjects to be pushed forward. Elizabeth, N. J., is a conspicuous example of this kind of classification. Here a class or grade of pupils is divided into three or four divisions in each of the most important subjects, as arithmetic and grammar, the divisions going forward as rapidly as they are able to, and continuing their pace even

after the grade promotions are made. "Thoroughness in essentials" is made the motto. Individual promotions are made generally at the end of each month, but it is understood that any pupil may be advanced as soon as he shows that he can do more for himself in another division. A complete record of every pupil is kept, which shows the exact amount and character of the work done, the pupil's characteristics, etc. This is a kind of life-book, such as is made in the French schools, and is passed on from teacher to teacher, as the pupil advances. Last year's statistics show that 23 per cent of the pupils earned irregular promotions, and that 60 per cent of them were reclassified during the year and placed where they could do better work.

Of other plans followed in schools having one-year intervals between the classes, a few will be given somewhat in detail.

The plan pursued in Cambridge, Mass., deals only with the grammar-school course, which is supposed to cover six years' time of pupils of average ability. A few weeks after the pupils enter the grammar school, in September, they are separated into two divisions, according to ability, one division called Grade A, and the other division called fourth grade. The pupils of Grade A move forward with the aim of completing the prescribed grammar-school course in four years, succeeding grades being called B, C, and D. The pupils of the fourth grade go forward more slowly, aiming to do each year only one-sixth of the work prescribed for the grammar school. The grades of these pupils in succeeding years are known as fifth, sixth, seventh, eighth, and ninth. At the beginning of the second year the pupils of what was Grade A, now called Grade B, go into a room with pupils of the sixth grade. During the first part of the year the pupils of the sixth grade are in advance of the pupils of Grade B, but, owing to the superior ability of the latter division, they all come together during the latter part of the year. At the beginning of the third year precisely the same conditions exist as existed at the beginning of the first year. The pupils of Grade C recite with the pupils of the seventh grade for a few weeks, when a readjustment is made, the abler pupils moving on at a pace sufficiently rapid to finish the course in two years, leaving the others to finish it in three years.

The fifth-grade pupils are alone in a room under one teacher during an entire year; the same is true of the eighth-grade pupils. In all other rooms there are two grades or divisions, one belonging to the four years' course and the other to the six years' course.

A pupil who begins with the fourth grade and remains in the slower division to the end of the course will graduate in six years, unless he has to repeat; a pupil who begins with Grade A and remains in the more rapid divisions to the end of the course will graduate in four years; a pupil at the end of the sixth grade or of Grade B may go on with a division which will enable him to complete the course in five years. Thus it will be seen that the entire course of study may be finished in four, five, or six years, depending upon the strength or ability of the pupils, and all without the omission or repetition of any part of the course.

All promotions both from the grammar to the high school and from grade to grade are made by the class teachers, under the direction of the principal and superintendent. No preannounced examinations are given, but there are frequent written reviews given by the teacher, the results of which help to determine the fitness of pupils to go forward. * * *

To the criticism that this plan of classification can be used only in large systems of schools or in large buildings, it may be said that in one of the Cambridge schools, where the plan is in full and successful operation, there are only 330 pupils distributed in 6 rooms, 1 room having 80 pupils, with 2 teachers. Of the present graduating class, numbering 50 pupils, 4 will probably have completed the nine years' course in six years at the time of graduation, 12 in seven years, 16 in eight

years, 15 in nine years, and 3 in ten years. Principal Cutter of this school says of the plan:

It is my belief that the plan can be successfully carried out in a school requiring but four or three teachers. There is more than one way to bring about a desired result. The 18 pupils who were last year in Grade A entered in September the same room with Grade VI, and are now well abreast of the pupils of this grade. The same thing is true of the 10 pupils of Grade C in joining the ninth grade. In neither case is there a pupil who is now failing to sustain himself with credit. I am a hearty believer in the scheme; and it can no longer be said that in a graded system the brighter pupils must be kept marking time to the pace of the slower ones.

Added testimony to the adaptation of this plan to a small system of schools is found in Middleboro, Mass., whose enrollment of pupils is about 1,100, the enrollment in the three buildings where the plan is in operation being 474, with 11 teachers. Of the present graduating class, numbering 50, about 15 will complete the course in one year less than the prescribed time. Concerning the advantages that may be claimed for the Cambridge plan, Superintendent Jacoby writes as follows:

1. It gives pupils an opportunity to do the grammar-school work in four, five, or six years without omitting any essential part of the work.
2. It enables pupils to better use their ability and time.
3. It permits the grouping of pupils of the same degree of advancement, thus making the conditions for successful work more favorable.
4. It does not complicate or destroy the organization of the schools.

In Woburn, Mass., a plan of "double promotions" has been in operation for some years, and has been attended with good results. In the primary schools the interval between classes is made short by dividing the pupils into small sections. As there are three or more sections in each room, the class intervals are so short as to permit frequent changes, the section rather than the grade being the unit of promotion.

The nominal time for the completion of the primary school course is three years, but many complete it in much less time. In each of the grammar grades the essential features of the entire work prescribed for the year are taken during the first half year, and those pupils who have successfully performed the work, especially in language and arithmetic, at the end of the half year, are promoted to the next higher grade. During the second half year a more minute study of the topics in language and arithmetic already pursued is made, by which an opportunity is afforded for new pupils to do the work of the grade, and for those who have done it imperfectly to review it. By this plan bright pupils are given the opportunity of passing through two grades in one year. The number of pupils who won mid-year promotions last year in the grammar grades was 129, of whom 104 received a second promotion at the end of the year. The number of mid-year promotions in 1895 in the same grades was 315. Of this number all but 78 were again promoted at the end of the year. The present total enrollment in the ninth grade is 145. Of these, 3 have completed the nine years' course in six years, 10 in seven years, 33 in eight years, and 99 in nine or more years.

Some possible objections to the plan are met by Superintendent Emerson, who says:

The conditions of promotion in every case are punctual and constant attendance, high rank, good conduct, good health, and the consent of parents.

And again:

This special adjustment of the work in language and arithmetic is necessary on account of the nature of these subjects, each principle being so related to those that precede it that the pupil is obliged to carry in his mind a general outline of the entire subject. This is not true of the other branches of study, such as geography, history, spelling, etc. It is of little moment which hemisphere is studied first, which continent shall have the precedence, or in what order the countries of a given continent are studied.

In Keene, N. H., a plan has been in operation for three years which embodies some features of plans already described. Its resemblance to the Cambridge plan consists in the division of two grades into A and B sections, one of which goes forward at a more rapid pace than the other, with opportunity for pupils to cover a six years' course in four or five years. Its plan of reviews at stated times for the convenience of those who omit some portions of the work, as well as for those who need more drill in the subjects reviewed, resembles in some respects one of the essential features of the Woburn plan. In the Keene plan, the A or advancing divisions do not work ahead in all subjects, but only in those subjects in which consecutive work is necessary, as grammar and arithmetic, the plan resembling in one important respect those followed in both Elizabeth and Woburn. There are other features of the Keene plan which are unique, and show the value of skilful planning and careful oversight. There are ten grades below the high school. Of 1,056 pupils belonging last year, 48 special promotions were made during the year. In the present graduating class of 84 in the grammar school, 14 will have completed the course in nine years, 4 in eight years, and 1 in seven years.

The reports of plans of promotions in schools having short intervals between the classes are almost as varied as those already referred to. In nearly all of these schools the reported number of double promotions during the past year far exceeds the number reported from schools where class intervals are one year in length, the percentage of such promotions, based upon the number of pupils enrolled, ranging from 3 to 30 per cent. In a majority of this class of schools there are twenty-week intervals between the classes, regular promotions being made twice a year. When two sections twenty weeks apart recite in the same room to the same teacher, transfers from the lower to the higher divisions are said to be comparatively easy to make. Sometimes the classes, especially when they are large, are separated into two or more divisions, making the intervals between the divisions only ten or twelve weeks. This arrangement is not unlike that which is made in several cities and towns by which all the pupils are divided into small sections according to attainments, with provision for promotions at the end of eight, ten, or twelve weeks. There are some differences in the details of plans followed, but in general the principle recognized is the same, which is to make as short intervals between the classes as possible, with frequent promotions. This principle was applied in the classification of the elementary schools of St. Louis, twenty-five years ago, under the direction of Dr. Harris, now Commissioner of Education. * * *

Of the cities in this country which have adopted this plan in whole or in part, Dayton, Ohio, may be mentioned as a conspicuous example. Of the plan in Dayton, Superintendent White writes:

> The aim is to have from 30 to 35 pupils in each room. The work is assigned for the year by grades. The pupils of each grade are assigned to rooms, as before stated, commencing with the one having the highest standing, and so on down to the end. In districts where there are several rooms of the same grade it makes classification very close, and enables the teacher to present the work to each class in such a manner as to be within the comprehension of each individual child. Each of these rooms is again divided into two classes, according to standing, and the work is presented to the two groups separately. When the work for the ensuing year is completed, the pupils of any group, or any particular pupil in the group, may be advanced to the next higher grade at any time within the year.
>
> We are trying to preserve the class organization and retain the benefits of class instruction at the same time that we are utilizing the individual instruction of pupils.
>
> Our teachers, principals, patrons, pupils, and board of education take kindly to the new arrangement, and the work of the schools is perhaps more harmonious than it has ever been in its history. This arrangement takes closer and more methodical supervision, and a great deal of patient, skilful work on the part of those in authority, but we anticipate for it very gratifying results.

It is asserted by some that this plan is only adapted to the schools of large cities or to schools of large size. Two cities of small size report that they are following the plan essentially with success—Le Mars, Iowa, and Centralia, Ill. Of the work in Le Mars, Superintendent Coleman writes:

Our class intervals are short. In the primaries they are from six to eight weeks, in the grammar grades from eight to twelve. At intervals varying somewhat each class is reviewed back to the next lower class; but all pupils very strong in the work, as indicated by the recommendation of the teacher, are excused from said review and are promoted to the class that reviews to meet them. Our rate of progress between these reviews is determined largely by the ability of the stronger members of the class, as we expect the others to review soon. This is our sixth year on this plan, and we find an increasingly large number of pupils ready for the promotions.

We have admitted three classes into our high school this year, one in September, one the 1st of November, and one in December. There are 49 pupils in these three classes, and 5 of them took ten years to complete their preparation for the high school; 5 took nine years; 8 took eight years; 13 took seven years; 15 took six years; 2 took five years; and 1 took four years.

In the Centralia school 425 pupils, or over 30 per cent, out of 1,374, the whole number belonging, were promoted out of course last year. Of the plan pursued Superintendent Mather says:

Our system of promotion has to do largely with the individual pupil. Each grade is divided into A and B sections. No grade in the system is more than six weeks, or seven, beyond the next lower. When a pupil, in the judgment of the teachers, is able to do the work of the grade beyond, he is promoted to it. With my strong teachers, those of good judgment, I permit the recommendation to take the place of an examination. Every month and many times every week pupils are promoted. By keeping the grades thus far apart the school is not disorganized, and sufficient encouragement is given to all pupils.

Thus far I have given somewhat in detail the plans of grading and promotion culled from letters and reports which are in actual operation in this country. They express in forcible terms the feeling of opposition quite generally felt in progressive centers to the lock-step marching by platoons from grade to grade, which still characterizes the practice of grading and promotions in many schools of both hemispheres.

In all the examples given there is doubtless much that is good. It is evident, owing to various circumstances, that no one plan is suited to all places; and yet it is possible to select certain common elements of excellence, and from them derive some principles of value to all who are seeking to solve the difficult problem of making such grading and promotions as will give individual pupils the largest measure of opportunity. To these principles I will add some conclusions of my own, based upon experience and observation, and upon opinions from trustworthy sources.

1. First, as to length of intervals between the classes. It is significant, that although in my recent inquiry only about one-third of the places reported shorter intervals than one year, and in the investigation made by Commissioner Harris in 1893 the proportion of places having short intervals was but a little greater, the opinions of superintendents as shown in the latter investigation very generally favored the shorter interval; only 65 out of 465 reporting as being in favor of the one-year interval. I place, therefore, first, among the principles of grading, the making of as short intervals between the classes as circumstances will permit. In a collection of children numbering 100 or more the gradation should be of such a kind as to permit intervals of one half year or less in at least two branches of study; and where the number of children is more than 200, such intervals may profitably exist in nearly all the required studies. Where the numbers warrant it, as in buildings having 400 or more pupils, the intervals should be nine or ten weeks in all subjects, and may be less than that in some subjects. Where the number of pupils covering the entire course must be placed under the charge of

two teachers, their distribution will depend upon circumstances, such as the relative number of advanced pupils, number of beginners, etc. But generally it may be said that a little more than half of the work usually assigned to the course should be given to the primary teacher, and the rest to the grammar school teacher. An arrangement of classes in both rooms should be made by which the intervals are less than one year between classes in sequential subjects, like reading and numbers in the lower grades and arithmetic and grammar in the upper grades. With such classification pupils should be permitted to recite in an advanced division in any one or two subjects, whenever they show ability to do the work of that division, with a view of working up into a higher grade in all subjects.

2. Where the work of one teacher must cover the entire course, close gradation in all subjects should be avoided. The pupils may be heard together or in two or three divisions in all subjects whose parts are not closely dependent, like language, nature study, geography, and history. In other subjects, as arithmetic, grammar, and some parts of reading, the school should be divided into four or more divisions. Pupils should be permitted to recite in any division or in any subject in which they can do the most for themselves, and be permitted to pass from one division to another whenever they show that it is for their advantage to do so. The more advanced divisions in some subjects may be heard two or three times a week, with correspondingly long lessons assigned if they are full-time subjects. The number of daily recitations in rural schools will depend upon circumstances, but should not exceed twenty.

3. The course of studies as far as possible should be made so as to assist the teacher in adapting the work assigned and called for to the abilities of all pupils in every class. This can be done by designating important or principal features which must be taken by all for a proper understanding of the subjects, and by suggesting supplementary work that may be done profitably by pupils after they have acquired the necessary portions, and while they are waiting for others who have not acquired them.

4. Regular times of grade or class promotions are desirable, with special arrangements for the promotion of individual pupils or of sections of pupils whenever they show their ability to perform the work of a subsequent grade. A specific plan for irregular as well as for regular promotions should be made and carried out by the principal or superintendent. As a rule, merely general directions or a reliance upon the judgment of the teachers to promote pupils out of course is not sufficient to meet the requirements of all cases.

5. "Double promotions," where the intervals between the classes are one year or more, or where there is no arrangement by which the work in sequential subjects of all grades is covered, may be a benefit to some pupils in the saving of time, but are likely to be attended with dangers that do not offset the benefit gained. If the course of studies is what it should be, there is, in "skipping" a portion of the work, a loss which can not be easily made up.

6. Pupils should not be heard in recitation together in all subjects, but should be separated into two or more divisions, one division of pupils being given an opportunity for study while others are reciting. In some exercises all the pupils of a grade may recite together, as in penmanship, and some kinds of language and nature study in the lower grades, and in some forms of written and oral reviews in the upper grades. In some subjects, like arithmetic and grammar, at least three divisions of a class may with profit be made. In large buildings the divisions may be distributed in the rooms on the basis of those subjects in which the shorter interval is made; that is, two or three divisions in arithmetic, constituting one class or grade, may be placed together in one room.

7. Promotions from grade to grade should not depend upon examinations made by a person other than the class teacher. In general, the class teacher should

determine the promotion or nonpromotion of all pupils whose ability or non-ability to perform the work of the subsequent grade is unquestioned by her. The place of all other pupils should be determined by the principal or superintendent, by means of examinations and such other evidence of their ability and needs as is attainable.

8. Provisions should be made in the course of studies for reviews at such times and in such subjects as will permit rapidly advancing pupils to lose no part of the work outlined in the course.

9. Wherever it can be done, the help of one or more assistant teachers should be secured, whose special work will be to give assistance to backward pupils, or to pupils who are endeavoring to work up into a higher division or grade.

10. For the purpose of knowing the characteristics and needs of individual pupils, a teacher should be in charge of the same class of pupils for at least one year. In some cases, where pupils are promoted out of course from one room to another, the time of such pupils with one teacher might be less than a year.

11. Although the number of pupils to a teacher has not been a special object of inquiry in this investigation, it has been brought out incidentally that attention to the needs of individual pupils demands that in no case should there be more than forty pupils to a teacher; and that, where the ages and attainments of pupils are widely different, as in so-called ungraded schools, no teacher should have more than twenty-five pupils.

CHAPTER VIII.

THE DEVELOPMENT OF THE COMMON SCHOOL IN THE WESTERN STATES FROM 1830 TO 1865.

By Rev. A. D. Mayo.

OHIO.

The State of Ohio was the first Commonwealth in which the characteristic experiment of the new American republican civilization, the training of a population representing "all sorts and conditions of people" in the supreme art of living together in freedom and union, justice and equality of civil rights, as members of a democratic order of society and government, was tried under the conditions of national life. The widely differentiated immigrant populations that swarmed into the central region of the old Atlantic colonies were for many generations so kept apart by the semifeudal type of some of the original settlements and the obstinate antagonisms of class, creed, language, and manners as they existed two centuries ago in all, that the real union of their people came slowly, and even yet in some localities may be said to be incomplete. The new colonies of Kentucky and Tennessee, that were formed anterior to that of Ohio, were for many years reproductions of the more enterprising and energetic side of the States of Virginia and North Carolina, and until 1860 retained an almost exclusively "native American" population. But the new State of Ohio began its life at the opening of the century under the inspiring influence of a national life of the republican type. In the constitution and laws of the new State there was "no respect of persons," as by the original compact the existence of negro slavery was forever to be kept outside its borders.

During the half century from its settlement to 1840 a population of 1,500,000 had been reared or received on its 40,000 square miles of territory. Probably no State, ancient or modern, had ever received within so short a period 50,000 people of such energetic mold and in many ways so widely varied as the Territory of Ohio at its admission to the Union in 1802. These people had come in groups from every portion of the Union and every civilized nation. They settled oftentimes in places far apart, and each of these outposts in the new country became a practical training school of executive life. In every new county seat was found a cluster of families which the superior class of the Commonwealth is now proud to honor as its ancestors. Thus in Ohio it may be said that there never has been an especially wealthy or favored class. The majority of the original settlers were an enterprising and intensely practical body of people, seeking new homes in a new land, then farther from the great centers of civilization than any portion of Christendom is from its chief metropolitan cities to-day. It was under these favorable circumstances that this great experiment of the making of the final American people under national auspices was first to be tried, and the success of Ohio during the first half century of its existence became an object lesson for the making of the new republic beyond the Alleghenies.

But so difficult was this experiment at the best that, even with this "new deal" in human affairs, the process of assimilation and the achievement of a harmonious civic life was slow, halting, and often lapsing into reaction. It was not till the memorable crisis of 1860-1865, when the imperious call to stand up for the nation of which Ohio was almost the first-born and most lusty child, rallied her 2,000,000 people in an overwhelming majority to do battle for the Union, that the new Commonwealth was really awakened to a consciousness of her own power. It was then seen what a training school of executive ability of the American republican order this isolated, intense, and perplexing life of the past half century had been. From that day Ohio has stood before the world as the most remarkable object lesson of the development of a democratic State within the memory of two generations in modern history.

But in no direction were the especial disadvantages of this great training school of civics more evident than in the original attempts of the people of Ohio at the literary schooling of her children and youth during the first half century of her existence, from 1790 till 1840. Although favored with the most bountiful gifts of public-school lands ever bestowed on a new Commonwealth, the people of Ohio were in no favorable condition to use or even to appreciate their great opportunity. The result was that, even until 1838, when Samuel Lewis, Nathan Guilford, and Calvin Stowe appear as the first prominent leaders of the common-school movement, the educational life of the State was practically "a thing of shreds and patches." There was doubtless a larger amount of school-keeping and more good school-keeping in the State than the somewhat fastidious estimates of the leading educators of a later period, who have written its history, are willing to allow. Especially was this the case in the southeastern and northeastern portions of the State, largely settled from New England and New York, where the people brought along in their immigrant wagons the idea of the educational facilities at home. The log schoolhouse rose with the church and the home, and either by the little public schools or private arrangements the children were kept above "the barbarism of ignorance."

In other localities, peopled by immigrants from the States where the educational opportunities were largely utilized by the favored class, with great illiteracy among the masses, the work went on more slowly. Yet even there the good seed was widely sown. The successive attempts in 1821, 1828, 1829, and 1831 to build up a common school on the foundations of "hay, straw, and stubble" that were then on the ground emphatically had at last awakened the attention of the people and prepared the State for better things. The partial interest of the more prosperous class in every community and the insatiable greed of private land ownership, which had almost wrecked the splendid school-land fund, had greatly retarded the progress.

So, when Samuel Lewis, after years of agitation, was installed as first State superintendent of public schools in 1837, he found himself in the position of a lonely observer on a mountain summit overlooking an almost unknown country. What might be called, by a figure of speech, the common-school system of Ohio was a medley of isolated school districts, working in an almost absolute and jealous independence of each other through an annual school term of a few months, with no real examination of teachers, no effective supervision, no official knowledge of what they were about. Only the one considerable city of the State, Cincinnati, was attempting a proper graded scheme of public education. The school laws of the Commonwealth were a legal jungle; the general situation almost impossible of comprehension; and everywhere groups of influential and well-to-do people were resisting the step already taken as a dangerous experiment not to be tolerated.

With all his optimism and enthusiasm, Mr. Lewis, at the first glance at his work, felt a sinking of the heart and "consulted with the executive on the propriety of

assuming the office." That he did accept and toil like a hero through four tremendous years, until the labor wrecked his health and left him a restless invalid during the remainder of his life, is one of the reasons why the Buckeye State thenceforth in its educational affairs "thanked God and took courage."

Superintendent Lewis was at once confronted by the enormous difficulty of obtaining any satisfactory view of the real state of educational affairs. The county authorities, whose duty it was to make returns of the schools to the State government, persisted with the magnificent official "independence" characteristic of the new American civilization in an obstinate neglect of the matter, or in such a perfunctory or ignorant performance as left their reports of no real value. Even the charge for the postage of circulars to stir up this class of easy-going officials, for which there was no authority in the law and which would swamp the new superintendent financially, made the prospect almost hopeless. He therefore, in the true spirit of the missionary, mounted his horse and, in this laborious way, traversed the State, seeing with his own eyes what sort of schools the people were supporting; talking with everybody; lecturing in his own earnest and familiar way; collecting the facts by which to shape the policy of the future.

He found what accounted for the late movement in behalf of education—that everywhere the teachers were his advocates. He reports that "the education of the masses is a marked feature in all discussions and reports. Nothing will rally the people more readily than the discussion of subjects connected with education." "The city of Cincinnati seems to be almost the only place where common-school instruction proper is furnished and where the means of public instruction are free to all, rich and poor, on equal terms." The new capital city of Columbus was just beginning to build up what has since become its splendid system of public instruction; "but even there the provision is not half enough, and the schools have from fifty to eighty children to the teacher." The superintendent inclined to the belief that the common schools were better in the country than in the villages and cities, as in the rural districts the humble allowance of public funds, supplemented by a rate bill and personal gifts, was comparatively a better outfit than in the cities, where the wealthy and well-to-do families patronized the private seminaries and left the common school to become a "common affair," satisfactory to nobody.

Without following the superintendent in his elaborate statement of the defects of the common school and his eloquent presentation of its absolute needs, we learn that out of the confused and conflicting materials on his official table he pictures this résumé of the situation: From the 62 counties and 1,129 townships of the State, 7,033 districts had, after a fashion, reported. There were 492,837 children and youths of school age, 4 to 21, in the State, of whom 227,805 had been enrolled in the common schools during the year. Of the 146,440 reported, 84,296 had been in school less and 62,144 more than four months. There were 4,336 public and 2,175 private schools, 6,511 in all, taught by 7,962 teachers, of whom 4,757 were men. The entire cost of the schools, from all sources, was $438,937 for public and $148,000 for private schools. There were 4,378 schoolhouses. The school fund, built up from three partial and one general school land fund—the Virginia military fund, United States military fund, and Connecticut western reserve school fund—and the proceeds of saline properties, was $1,153,239, with an income of $68,716. The prospect of future sales of school lands warranted the prophecy of a school fund of $2,433,230 and a permanent income of $88,736. The State school tax of 1½ mills on a dollar, with the probable increase of taxable property and the addition of the income of the portion of the United States surplus revenue dedicated to education, and other sums, swelled the full amount to $436,957, less than a dollar to each of the entire school population, and little short of $2 per capita for the number enrolled in the schools.

One of the most aggravating duties of Superintendent Lewis was the examination of the condition of the school lands of the State. There is no more melancholy,

and certainly no more confusing, chapter in American history than the record of the amazing waste of this great national gift to the people of Ohio, as related in the reports of Superintendent Lewis and condensed in the statement of President Eli F. Tappan, of Kenyon College, in his contribution to the valuable centennial volume of 1875, entitled "Education in Ohio."

We shall not burden these pages with a republication of this record. The history of the management of the school-land funds of Ohio has been probably the most remarkable contribution made, even by this great executive State, to the illustration of the science of "how not to do it" in public affairs. The "long and short of it" seems to be that there were, even as late as 1875, "823 distinct funds in the State of Ohio held in trust for the use of the common schools." Three were large: The Connecticut western reserve, the Virginia military reserve, and the United States surplus revenue funds. The rest were for early township and special township funds in about three-fifths of the State. Those within the sixteenth section in 1875 amounted to $3,534,826. It is unnecessary to repeat the story of the scandalous plundering by which the large university fund of the State was practically wrecked; so that until twenty-five years ago there had been no serious and persistent attempt to establish a State university of the type found in all the remaining Western States, and none to found even one State normal school to the present day.

It is impossible to estimate the amount lost by what would seem to be, at the best, the most careless handling of a precious trust. One of the causes of this was the fact that the mass of people who through the first generation flowed into Ohio were poor and depended greatly on the low price of public lands for a start in life. Without the education acquired by the administration of the present homestead laws, they were chiefly interested at first in getting the lands at a nominal rate and in sending members to the legislature who would resist every attempt to wrest the children's patrimony from the hands of their hard-working and anxious parents. As it was, the labors of Superintendent Lewis are said to have saved to the State hundreds of thousands of dollars by the attention awakened to the subject even as late as 1838.

After the three reports of such a mentor as Samuel Lewis in the chair of State school superintendency, the people of Ohio evidently desired a "vacation," and on his retirement, in 1840, repealed the act establishing a State superintendency and assigned the duties of the office to the secretary of state. His efforts had saved the important school law of 1838, by which "a State school fund of $200,000 was established, a county tax of 2 mills on the dollar had been imposed, local taxes for building schoolhouses were levied, and reports from teachers and school authorities required." The statistics accompanying his last report showed that a firm hand had been at the helm and the people were responding to the call of a true leader. In 1839, 13,049 common schools were taught by 12,860 teachers, with an attendance of 455,427 scholars, an average of four months' schooling in each district, 35 pupils in a school, and an entire expenditure of nearly $1,000,000. The retiring superintendent declares that the coming year will show "an excess of educational work of one-third above the amount now effected." To this must be added the cost of private schools, of which there were a great number in every part of the State.

In 1838 it was reported that the city of Cincinnati was the educational center of the Valley of the Mississippi, and that several of the smaller cities were doing good work in popular education. Of colleges, we hear of Kenyon (Episcopal) at Gambier; the Miami and Ohio State Universities, at Oxford and Athens, established from the remains of the State University fund; the Medical College of Cincinnati and the Woodward College, now the Woodward High School, of that city, with a number of denominational schools and academies; the Western Literary Institution and College of Professional Teachers, a sort of premonition of

the present Chatauqua Circle, which included the superior teachers of the Ohio and Mississippi valleys, and the Mechanics' Institutute of Cincinnati. There was also a school in Cincinnati established to teach the English language to immigrants from the non-English-speaking countries of Europe, of which Hon. Bellamy Storer was president. Between 1836 and 1840 the public schools of Cincinnati, established in 1828, had been brought into what was then regarded the graded system of instruction, under the first special school act passed in the State, and by 1847 a proper high-school clause was added to the statute. Cleveland followed in 1837–1840. Within fifteen years Dayton, Columbus, and several other cities had begun the organization of a graded system, Columbus being the first to appoint a city superintendent of schools, in the person of Dr. Asa D. Lord, in 1847. In 1847 what was called the "Akron school law" was passed—a special act for a more complete method of grading the public schools of that new and enterprising city. In 1848 this special act was made general for the schools in cities and towns. In 1849 the same law was extended to incorporated townships. Some 70 cities and towns organized their schools on the graded plan during the few years following the enactment of the general law of 1849. The new habit of appointing superintendents of graded schools became common. In this way the common schools of the cities and larger villages had improved. In 1840 the remark of Hon. James H. Perkins in regard to the style and quality of many of these schools seems to have "hit the nail on the head"—"teach the pupils to use their eyes as well as their ears."

The five years succeeding the retirement of Superintendent Lewis, 1840–1845, are by common consent regarded a period of reaction in the common-school affairs of the State. This was certainly not due to the able men who occupied the governor's chair, all of whom—Wilson Shannon, Thomas Corwin, and Mordecai Bartley—in their successive messages repeatedly urged the claims of popular education upon a careless or hostile legislature. Without exception they advised a reestablishment of the office of State superintendent and a normal school for teachers. Secretary of State William Trevitt in 1841 presented a forcible report indorsing the ideas of Lewis, and especially urging the better training of teachers, quoting liberally from Horace Mann, Henry Barnard, Dr. William E. Channing, and other Eastern authorities. But under the three years' administration of Secretary of State J. Sloane, 1842–1844, the legislature received only a muddle of imperfect statistics, with a few pages of educational platitudes. Meanwhile the common schools steadily declined in public estimation, and the enthusiasm regarding them seems to have been confined chiefly to the teachers' associations.

Perhaps the most notable element in the administration of education during this period was the passage of the law authorizing common schools to be taught in foreign languages for the instruction of the children of the large body of European people then coming to the State. The State of Ohio seems to have persisted in yielding to this demand, especially for the teaching of the German language in common schools, beyond the habit of other Western States and cities containing a larger population of these people. This policy, possibly for a time at its inception a convenience, has not proved a success, either from an educational or civic point of view, and in several of the larger cities of Ohio has become at different times a cause of discord and of the formation of parties on lines of nationality, the most dangerous form of "offensive partisanship" that can threaten an American republican State. Meanwhile, one legislature abridged the State appropriation for schools and another withdrew a large portion of the United States surplus revenue fund from the children's use. The State evidently felt the need of a strong hand at the educational helm.

That strong hand appeared in the election of Hon. Samuel Galloway to the post of secretary of state and superintendent of public instruction in the year 1844. His first report, January, 1845, was a fierce searchlight flashed down into the

confused realm that the common school was fast becoming under the studied neglect of its advocates. Although the public officials connected with the school laws exceeded the number charged with the administration of any other interest of the Commonwealth, no important business, public or private, in the State seems to have been handled in a manner so shiftless and disheartening as its chief concern, the education of the children.

The new superintendent printed "a partial exhibit drawn from the imperfect returns of the past five years," by which the number of schools in a large district of the State was seen to have decreased 1,000, the teachers 500; the scholars from 150,402 to 48,870, and the cost of building schoolhouses from $62,000 to $17,000. Superintendent Galloway writes:

Not one-half of the statistics ascertainable by appropriate diligence in the discharge of duty have been reported. There are in the State 7,000 districts, 13,000 teachers, and 460,000 scholars connected with more than 13,000 common schools, and yet these and many other important facts can only be reached by calculations upon the very imperfect data furnished. Only 45 counties, less than two-thirds the whole number, have been reported during the year. Not more than this proportion was reported for the last four years; and all the returns, with three or four exceptions, for the period have been incomplete and unsatisfactory.

He compares this gross negligence unfavorably with the spirit of other States now in the full tide of reform under the impetus of the great educational revival of the period:

No other interest of the State has been so shamefully neglected; and any other treated with the same chilling indifference would have perished. * * * The system as conducted to many would appear as a mere experiment to ascertain whether it be possible to educate the youth of Ohio without the agency of superior intellectual power breathing its inspiration over every important process for the accomplishment without the application of moral force and without the creation of adequate and even acting motives. The principal obstacles are the inefficiency of township and district superintendents, the incompetency of teachers, and the absence of active sympathy and interest on the part of parents and patrons.

The chief of these is the incompetency of teachers. "The schoolmaster has borne the disgrace of unrequited toil, and the life one of reproach rather than distinction." The superintendent doubts the efficacy or expediency of normal schools, but urges the establishment of county superintendency in place of the perfunctory and heartless service of the average county auditor, who was then the only public official that occupied that important place. He declares the act by which the State superintendency of schools was abolished in 1840 "a disastrous movement to the cause of common schools." He enlarges on the importance of district school libraries. He says, "We have now reached a crisis in popular education fraught with untold consequences."

The census of 1840 showed that there were in the State of Ohio more than 35,000 adults and more than 100,000 children between the ages of 4 and 20 unable to read and write. In 1846 Superintendent Galloway returns to the charge, more indignant in spirit and scornful in rhetoric, illustrating the saying of Emerson, "Exaggeration is the soul of eloquence;" yet pointing by its very intensity of eloquent exaggeration to a deeply seated disease of the body politic. "This vital interest (in popular education) is conspicuous by the loneliness of its destitution. It has been exiled from an honorable companionship in the family of State interests, and has been thrown out like a poor, despised foundling, half child and half fool, to beg for protection." He finds a hopeful sign in the willingness of the educational public to follow a new and inspiring leadership, and in the growth of city systems of graded schools, as in Cincinnati, Cleveland, and other important educational centers; in the springing up of teachers' associations and institutions, and more enthusiasm manifested by the county officials. He censures the legislative enactment that, in 1839, authorized the county authorities to reduce the tax for schools at their discretion.

He finds a reason for the loss of interest in public education by reference to the fact that "the State funds are lavished, with a ruinous prodigality, upon measures of doubtful expediency, and many of our counties are vying with each other in a competition of skill and success in fleecing the people for all kinds of improvement except intellectual and moral." It has been often observed in our country that a period of great financial inflation and popular absorption in material "public improvements" is not especially favorable to educational progress, while the years that are financially the most disastrous crowd the schools and colleges with children and youth who are no longer at work for money-making or family support. He again urges the appointment of county superintendents, and supplements all his recommendations by reference to a series of similar agencies in the more eastern States of the Republic. There were now 50,000 adult citizens and 150,000 children of school age in Ohio entirely illiterate.

The brave superintendent waxes even more indignant as the years go on. He opens his report of 1847 by the contemptuous sentences:

If Ohio occupied the commanding position in educational interests which her resources and rank justify and demand, it would be more pleasant to prepare and contemplate the true report of her condition. The education of our youth has, however, been so shamefully neglected that no one can consider it a pleasant task to abase his own pride or the honor of his own State by painting a truthful picture—one so disreputable to the highest glory of an enlightened people.

Despite the renewed attempts to galvanize the slumbering officials of the schools, "their sluggishness has increased."

The trouble is apathy unmixed with enmity, and from that fact the superintendent draws the inference that "the tone of public sentiment in regard to the necessity and utility of a system of general education is healthful and patriotic." The growth of teachers' associations and institutes and of the graded schools in the larger places are items of encouragement. He welcomes the advent of Hon. Henry Barnard, of Connecticut, who has promised to come to the State to labor in the good cause.

The superintendent estimates that by a wise administration the school-land fund of the State would amount to $8,000,000 or $10,000,000. Much of the land was leased between 1810 and 1820, at a very low figure, for ninety-nine years, with privilege of a renewal, though subject to revaluation every twenty or thirty years, with an increment of interest. But by the law of 1827, which the superintendent denounces as "plunder," tenants, under a loose arrangement, were permitted to surrender their leases and, on the payment of the amount of the original appraisement, obtain deeds in fee simple. In many cases lands worth $40 and $50 per acre were sold for $4 and $6, and many townships in this way suffered a great loss. The chronic maladies of unsuitable schoolhouses, irregular attendance, the manipulations of school districts, and frequent change of teachers are emphasized by the characteristic eloquence and satire of the superintendent. His picture of the inefficiency of teachers in entire counties of the State reads like a caricature of school-keeping. Like so many of the eminent educators of Ohio, he distrusts and disparages the experiment of Eastern normal schools and relies on county supervision, teachers' institutes, and general enthusiasm for lifting the profession up to a commendable rank. But as institutes had been established in but 10 counties of the State and less than 1,000 of the 13,000 teachers had been instructed therein, it would hardly seem a brilliant prospect to look to this agency for the immediate general uplift so imperiously demanded.

It is unnecessary to follow this earnest and eloquent advocate of better things in the common schools of Ohio, Superintendent Galloway, through his three remaining reports for 1848, 1849, and 1850. In all these he introduces more largely the testimony of the leading educators of the State in behalf of his own recommendations. In the report for 1849 he appears to have been converted to the idea of a

State normal school, and presents it as a measure on which all the friends of education can unite.

In 1848 the persistent neglect of teachers and school officials in the making of returns at last brought the legislature to the point of passing a stringent act on this subject, which, if enforced, would have at once brought to the statehouse a full report of what was being done in the schoolhouses of the Commonwealth.

In 1851 Supt. Henry R. King informs the legislature that "reports have been received from all the counties except eight, more or less complete." Yet the situation in the whole State was very far from being satisfactory.

Meanwhile the progressive element among the teachers and friends of education had not been inactive. The teachers formed a State association at Akron in 1847, with Superintendent Galloway as president. A group of able and devoted schoolmen appeared, especially from northern Ohio, whose success in institutes, public lectures, and that lobbying "for righteousness sake," which is responsible for the majority of good legislation, was steadily telling in an improved public spirit. Messrs. A. D. Lord, Lorin Andrews, M. F. Cowdry, H. H. Barney, and others were rapidly gaining the ear of thoughtful people. The agitation for normal schools was more intense and widespread. A private seminary of this sort was established in Richland, Lake County, by Messrs. Nelson Slater and A. D. Lord and sent forth a group of young men who afterwards did good educational service in the State.

In 1846 Prof. A. D. Lord published, at Richland, the first number of the Ohio School Journal, which, removed to Columbus, for many years remained one of the best journals of education in the country. Several additional periodical publications appeared. A permissive act was passed in 1847 by which counties might create the office of superintendent of education by vote of the electors of the various school districts. This act, at first applying to a number of counties, was extended to the entire State. But so obstinate was the public sentiment against even this mild form of "concentration" that only one county availed itself of the opportunity.

The most important addition to the school law was the act of 1847, "for the support and regulation of common schools in the town of Akron." It authorized the special organization of a thorough graded-school system, with a school board of 6 directors, 2 elected annually, to serve for three years. This body was required to establish within the school district of Akron six or more primary schools and a central grammar school. The town council was required to respond to the estimate of this body of school managers for buildings and the support of the schools by a levy of 4 mills on a dollar of the entire public valuation. By subsequent legislation, in 1848, 1849, and 1850, this provision was extended to the entire State, authorizing any township by a vote of the electors to impose a tax not to exceed 4 mills on a dollar, and a rate bill permitted to fill out a deficit, the schools to continue thirty-six to forty-four weeks in a year. Under this act the larger towns and cities, and even township districts generally, rallied for the establishment of graded schools and appointed superintendents. One clause of this act authorized the appointment of a board of school examiners, who were also inspectors and visitors of the schools.

It may be that this early facility of securing the advantages of superior education in the cities, villages, and the more progressive townships of Ohio distracted the attention of the educators from the open country and somewhat accounts for the fact that the rural portion of the State has always educationally lagged behind; even the State of Indiana, that came later into the work of popular education, being further advanced in the vigorous administration in country schools than its older and more wealthy, populous, and powerful neighbor, Ohio. A measure passed for the separate education of colored youth at the expense of the colored taxpayer alone in 1848-49 was afterwards amended to admit the colored contingent,

still in separate schools, to all the opportunities of education. In 1855 there were 88 schools of colored youth in the State. A law was also passed for the encouragement of teachers' institutes, with a moderate fund for their support. In 1854 the State commissioners codified the numerous laws respecting fees to be appropriated to the school fund, which, with personal property escheating to the State and the income of 25,750 acres of swamp lands, made a not inconsiderable addition to the growing common-school fund of the Commonwealth.

In 1850 a constitutional convention was held at Columbus and Cincinnati, in which the whole subject of education was considered. An attempt to investigate the history of the school fund derived from the portion of the national surplus revenue distributed to Ohio was dropped. The standing committee on education reported an educational clause of the new constitution, providing for the election by the people of a State superintendent and necessary assistants; also "the prosecution of moral, intellectual, scientific, and agricultural improvements;" the preservation of the State school fund; a permission by taxation and other means, in addition to the income of the State fund, for a thorough and efficient system of public schools for all children in the State, and providing that "no religious sect or party shall have exclusive right to or control of any part of the common-school fund of the State." This broad and thorough provision failed to commend itself to the convention, which contented itself with enacting as Article VI the following:

SECTION 1. The principal of all funds arising from the sale or other disposition of lands or other property granted or intrusted to this State for educational or religious purposes shall forever be preserved inviolate and undiminished; and the income arising therefrom shall be faithfully applied to the specific objects of the original grants and appropriations.

SEC. 2. The general assembly shall make such provisions by taxation or otherwise as, with the income arising from the school trust fund, will secure a thorough and effective system of common schools throughout the State, but no religious or other sect or sects shall ever have any exclusive right to or control of any part of the school funds of the State.

This is sufficiently indefinite to admit of abuses without number; but happily the good sense and growing educational spirit of the people of Ohio have hitherto saved the Commonwealth from the rule of the concentrated body that from the first has had control of the legislature of this powerful Commonwealth.

To what we can attribute this peculiar tendency at the statehouse is a question that has staggered more than one of the able and zealous Ohio educators who, elected as State superintendent of schools, has found the contact with the lawmaking body a constant temptation to educational paralysis. Perhaps it is to be attributed largely to the slow and still imperfect fusion of the population hitherto referred to.

Another constant hindrance to the complete development of the common school in all its departments, especially in the normal school and the State university, is the violence of political party spirit among the foremost leaders of public life. The separation between the North and South, which increased with unabated energy from 1830 to 1860, was repeated by a corresponding difference between the northern and southern sections of Ohio, peopled from the old New England and Middle and the Southern States. This radical difference in political principle and policy ramified into a separation on all local questions of county, city, and township administration. No American State has probably suffered and does yet suffer more from this disturbing element of political partisanship in education than Ohio, now, after the memorable experiences of the civil-war period, lifted to rival New York in the periodical contest for political supremacy in the Union.

But despite these and similar hindrances to the progress of educational reform, the successor of Superintendent Galloway, Mr. Henry A. King, in his first report in 1851 was able to put on a more cheerful demeanor in dealing with these troubles

than his own successors. The long contest for obtaining more complete returns had only been partially successful. The opportunity for the establishment of district-school libraries had not been largely accepted. The permissive law for the election of city superintendents had only taken effect in the city of Ashtabula. An important addition to the acquirements of teachers in district schools appears in the addition to the course of study of grammar and geography, and it is a significant indication of the narrow qualifications of the teachers in many schools that the repeal of this requirement was often desired from the difficulty of obtaining teachers competent to deal with these difficult sciences.

A great step forward was, however, taken in 1850 by a law establishing a State board of education, to be composed of five members, holding office for one, two, three, four, and five years, one, to be styled superintendent of common schools, to reside at the capital and for a year perform the duties of the office; the district schools to report to the superintendent and the latter to the legislature; the signature of the district superintendent to be attached to all certificates of teachers in his district; a fee of a dollar for licensing teachers from a competent authority to teach in any county of the State, which fee would also entitle them to receive the State school journal, and attend teachers' institutes and normal classes free of charge; while the moneys thus collected would pay the expenses of the new board, which in no event was to become a charge upon the State treasury. This ill-digested scheme, which would rob the State superintendent of all practical power through the brevity of his term of office and throw the entire expense of State supervision on the teachers of the State, never received even the compliment of being put in execution by the appointment of a superintendent, and is only known as another article of dilapidated legislative furniture, lumbering the crowded attic of the common-school statutes of Ohio; a fair tribute to the skill of the legislature in the noble art of "how not to do it." The State appropriation in 1850 of $297,000 was its contribution to the schooling of the children. This sum was declared painfully insufficient; as, with the addition of local taxation, it gave to the more favored counties but $2.33, in many counties but 75 cents, and in several 45, 39, and 38 cents for each youth.

The second report of Superintendent King in 1851 is a long and able document, written with a full comprehension of the situation and in an admirable spirit, giving a new interest to the somewhat monotonous presentation of deficiencies so long established as to be numbered among the venerable relics of a departed generation. The superintendent deplores the fact that "in probably a majority of the counties the common schools are in a languishing condition. A most profound apathy and indifference on the subject of education generally prevails in many of the counties, and all the evils, so long tolerated, still prevail; and some of these counties are the most advanced in respect to population and of commercial as well as agricultural wealth." The defects of the returns are dwelt upon with illustrations that seem almost incredible. The attendance on the schools does not seem to have materially increased for several years, being 245,000, and the entire expenditure $587,000.

The legislature had pursued its usual policy of "sewing new cloth on an old garment" by several additions to the school laws in 1850-51. The general school fund for annual distribution had reached $300,000. Another step forward was an act for compelling city councils to lay a tax of not less than 1 mill on the dollar. This would raise a larger sum than the 2-mill tax of 1838, as the total valuation of the State in 1850 was $452,000,000, and would give $450,000 to the schools. If this rate of taxation could be maintained, the superintendent estimated that by 1853 the State would expend $1,000,000 annually on the common schools. Union schools were required to report to the State authorities. The most encouraging phase of the school life of the year was the appointment by the State Teachers' Association, in September, of Mr. Lorin Andrews, one of the foremost educators

of the State, as a traveling agent for awakening a new life to the common schools. This was continued during three years, Mr. Lord succeeding Mr. Andrews. Here was again demonstrated the fact, so forcibly stated by Secretary Barnas Sears, of Massachusetts, that the mass of the people in any State never read the appeals of their own public officials on education, and are to be moved only by the power of a living voice inspired with its great theme. It would be interesting to know how many voters in the State of Ohio during the administration of State Supt. Samuel Galloway read or even heard of the earnest and powerful appeals that stir our blood at the distance of half a century, when read out of the dusty volumes of State reports in the capitol at Columbus or in the library of the United States Bureau of Education at Washington.

The superintendent gave an elaborate account of the school system as it then existed. He especially enforces the amazing fact that the 64,000 public-school officials in Ohio were let loose amid a labyrinth of legislation which it would "puzzle a Philadelphia lawyer" to read into shape. He recommends a speedy codification and revision of the school laws as of the first importance to the welfare of the school system.

The report of Mr. Lorin Andrews, the agent of the State Teachers' Association, as chairman of its executive board, accompanied this document, and was the most important paper that had been given to the educational public of Ohio since the retirement of Supt. Samuel Lewis fifteen years before. In this, the story of the devoted service of the superior teachers of the State who, despite the slow movement of the legislature, had pushed on the great work of a revival of the common school, is forcibly told. During the past year 200 practical educational addresses had been delivered to 60,000 people in all parts of the State. Seventy towns and cities had established free graded schools, more than 50 having been organized during the past three years. Thirty new towns had been visited during the past year. These graded schools were a great power for good, supplying to a certain degree the pressing call for competent teachers, and being centers of educational reform wherever established. During the year 41 institutes for teachers had been held, attended by more than 3,000 teachers. In these institutes resolutions had been passed demanding a permanent system of State supervision with a superintendent of education. A great deal was hoped from the coming session of the legislature. the first assembled under the new constitution of the State, and it was declared that "should the legislature fail to satisfy these just expectations, a strong public sentiment will be grievously outraged."

In 1853-54 Hon. Mr. Trevitt was elected secretary of state and superintendent of schools. His first communication announced that the important changes being made in the school laws of the State by the legislature in session rendered it impossible to make a detailed report. His second report, for 1854, was anticipated by the passage of the law establishing the office of State commissioner of education. As this official had not been elected, the common-school system was "set adrift for a period of ten months, with no special direction from the statehouse."

The school law of 1853 was passed after running the gauntlet of two sessions of the legislature, a test of public opinion represented by the leading press of the State, and a debate more protracted and searching than had ever been held in the legislature of Ohio on the subject of common schools. The result was reached on March 14, 1853. The new law contained 69 sections, two-thirds of which were a compilation of existing legislation.

The new portions were:

1. In lieu of the complicated system of city and local legislation, the law provided for a tax of 2 mills on the dollar upon the valuation of the entire taxable property of the State, to be "annually distributed to the several counties of the State in proportion to the enumeration of the scholars, and applied exclusively to the support for common schools." This supplied an annual fund of $1,208,283.84.

An important feature of the act was the recognition of the principle that the property of the State should educate the children of the State, at least to the extent of a general tax. Of course, the more wealthy counties and cities opposed this as an injustice, and at different times the grossest frauds have been perpetrated in the taking of the school census. But a great American city is the depository of millions of dollars not owned by its inhabitants, placed there for safe-keeping and investment by the people of all sections, and it is no more than just that this property should be taxed for the benefit of all the children of the Commonwealth.

2. A provision that the township board of education should consist of the chairmen of all the boards elected by the school districts was a return to the discarded district system of the East, which has wrought so much mischief. But it suited well the taste of the heterogeneous people of a State like Ohio, so jealous of centralization that it has never given to its governor a power of veto on any act of the legislature. The neighboring State of Indiana has demonstrated its superior wisdom by its admirable system of country schools.

3. Adequate provision was made to establish schools for the German and colored people.

4. Every township board might appoint one of its numbers to a practical superintendency, with proper compensation.

5. A great advance was made in this law, which, for the first time, abolished the rate bill and made education free to all the children in the Commonwealth.

6. One-tenth of a mill on the entire valuation of the State was levied as an annual fund for providing school buildings and aparatus for all the common schools.

7. A separate department of education was established, to be presided over by a State commissioner of common schools. Elected for three years, he was to receive a salary of $1,500; to spend ten days in each of the nine judicial districts of the State, and to perform all the duties usually vested in such a public functionary.

8. Boards of school examiners were appointed by the judge of probate, three in number, to serve for two years.

The inevitable reaction against a law so far in advance of previous legislation seems to have spent itself in the reduction, in 1854, of the 2-mill State tax to 1½ mills. But as the valuation of the State was constantly increasing, this provision secured to the schools a larger amount, $1,208,283, than the $1,118,089 from the 2-mill tax in 1853. The State levy for schools was also reduced one-fourth. A formidable demonstration in the legislature against the office of school commissioner, with other reactionary propositions, failed to materially impair the force of the new statute. The educational public of the State came to the rescue in an earnest defense of the new legislation, and in 1854 the school department was reorganized by the election of Hon. H. H. Barry, of Cincinnati, to the office of State commissioner of common schools.

It was a fortunate election that placed Mr. H. H. Barry, of Cincinnati, in the chair of State superintendency of common schools in the autumn of 1853. His administration of three years, extending to 1857, was signalized by a vigor and tact not always visible in this official. His position was one of great difficulty. Although the revised school law of 1853 doubtless represented the deliberate convictions of the thoughtful educational public of the State, yet there is no Commonwealth where the violent and persistent agitation of an active opposition party to all reforms in education and advanced political ideals and methods has been more obstinate than in Ohio. It was inevitable that the reactionary local, selfish, and sectarian elements which had so long retarded the progress of popular education in the State should be exasperated to a furious opposition against such measures as the establishment of schools absolutely free; a complete State and improved local method of supervision: the encouragement of free union, graded, and high

schools; a general State tax for all children, and the subsidizing of free-school district libraries. Much of the time and a large portion of the very able reports of the new superintendent were devoted to an elaborate history of common schools in Ohio and other States and the defense of such commonplace propositions as were implied in the new features of the school law.

But he well understood that the true policy of an educational reformer in public station is not to defend his own personality or his office, or to repel or parry the assaults of the opponents of free education. He therefore boldly struck out on new lines, and in pages of eloquent and unanswerable writing demonstrated the necessity and uses of normal schools, the township system of organization, and improved methods of organization, discipline, and instruction in all varieties of schools. And that all this might not fall on the dull ears of legislators, whom he describes as "the gentlemen who vote aye and no, read nothing, and think less," he went forth as the apostle of an educational revival. He visited 40 counties in one year, making 70 addresses and holding valuable counsel with great numbers of influential people. His salary of $1,500 was depleted by the entire lack of provision for traveling expenses and clerk hire. But he took the position, "No man but a man of wealth and a bachelor can afford to hold this office." He was indebted to the learned and laborious officials of the State library for the only assistance he received.

In 1854, on assuming his office, he complained that the returns from the counties "only furnished the elements of calculation as to what the statistics probably (not what they actually) are." He accounts for the comparatively slow progress of popular education during the past fifty years by saying: "Our history, until recently, was that of a pioneer people, subduing dense forests and bending their utmost energies to establish communication between frontier settlements and the open markets of the world. The wilderness and the war of 1812 engrossed all regards and all resources, until a second generation appeared upon the stage of action." But in contemplating the steady progress from the salient periods of the forward movement—1821, 1825, 1836, 1837, 1838, 1845, 1853—he finds cause for congratulation and evidence of the growing and deep-seated determination of the people of the State to secure the best in education, as in all things else, for the new Commonwealth. The new departure in 1853 was indeed a great forward step, which needed a vigorous, tactful, and obstinate defense to hold. But it was held, and from that day no very important reaction has taken place, although it must be said that the school system of Ohio nearly half a century later, when the State has become celebrated for a superior military and political position in the reconstructed Union, is still deficient in essential features of supervision and a proper system of State normal schools.

The student of the educational history of Ohio from 1853 to 1896 can not fail to notice the inefficiency of the system of State superintendency for lack of a proper connecting link between the higher and lower class of school officials. The office of State commissioner of education has been held by a succession of men not inferior as educators and administrators of city and local systems of schools to any in the country. But at the summit of State educational authority the occupant of the office seems to become half paralyzed. He is then brought in contact with a legislature so largely under the influence of an elective local school system, and the sentiment is still so indifferent and often antagonistic, that no general scheme of educational reform seems of possible adoption. The maxim of Washington, "Influence is not government," has been fully illustrated in the educational history of Ohio.

This gain—and, as far as concerns the large number of village and city systems, there had been a marvelous gain—was greatly due to the influence of the able and devoted educators of both sexes and the common-school public of the special locali-

ties. But while again and again it has been declared that this or that community was a model of good school-keeping, the lack of an adequate power to direct and lead the cause of popular education has left the legislature at the mercy of powerful private combinations, the "shrieks of locality," the jealousies and schemes of sects, classes, and individuals, and all the heterogeneous elements of a State so great and powerful. In 1854–1857, during the administration of Superintendent Barry, all these tendencies were exaggerated well-nigh to fury by the steady rise of the war cloud over the land and the determined effort to make the Northwest, especially the States bordering on the Ohio River, a barrier to the success of the Union cause in the coming disruption.

One of the features of the new school law fiercely debated was the provision for the distribution of the avails of the State tax for education on the basis of the school population. By this, 28 counties raised more than came back to them on the final distribution—Cincinnati (Hamilton County), $72,000, and other counties ranging downward from this large sum to $12,000, $9,000, $7,000, $6,000, $4,000, $3,000, $1,000, $500. The commissioner availed himself of this complaint to set forth the fundamental idea of the common school, that the property of a State shall educate the children of a State. He quoted liberally from other States, especially from New York, which sent forth $200,000 in excess of its own portion of the State taxation for the upbuilding of education in the poorer counties. In Ohio 60 of the counties received the excess of the remaining 28, to the extent of more than $150,000. Although this method of distribution is a temptation to an overestimate of the school population of a city, of which there have been occasional instances, yet it is so manifestly just that it still prevails. The Massachusetts system, by which $10,000,000 are annually raised by local taxation in the towns and cities of the State, until recently without a State tax, is now in a fair way of being remodeled by a large increase of the State fund and a moderate, though steadily increasing, sum raised by general taxation.

The commissioner refers again to the establishment of township boards of education with power to control the affairs of an entire district. The township board, composed of delegates from the school district boards, was no competent arrangement for the central function of administration. It virtually placed the motive power of the system of common schools in the hands of 1,500 local boards of education, each "ganging its own gait" according to its more or less enlightened idea of what it was elected to do.

The arrangement for district school libraries had practically "gone to the bad" on the reef of extreme school district control. Instead of founding a town library accessible to all, under proper control, the books were doled out in small packages among the little separate school districts. In some places they were not used at all; in others they were divided among the families with no fixed plan of distribution. The result was set forth fully a few years later by Acting State Supt. Emerson W. Keyes, of New York, and its practical effect was to destroy this beneficent provision for the children of the people. The neighboring State of Indiana was already profiting by this and other mistakes of its older sisters in not only taking good care of its common-school funds, but establishing a city and township supervision, which has proved an efficient cause of the great success of the country district school in the State in later years.

The teachers of the State, acting through the State association, nobly supported the progressive policy of the commissioner. Their agency, maintained for four years as a substitute for State supervision, was suspended in 1855. There were 18 institutes for teachers, receiving merely a small fund from the State. One hundred towns and cities had established the graded school system.

In 1855 a proposition to establish a private normal school by Mr. Cyrus McNeely, of Harmer County, coupled with a donation of $11,000 worth of buildings, was accepted by the State Teachers' Association, assembled at Cleveland, with a pledge

of $10,000 toward its support. But the experiment failed in this shape, and, after a hopeless attempt to obtain a subsidy from the legislature, the institution returned to its original foundation and as a private seminary continued for many years to do good service of its kind, some 5,000 pupils having passed through its halls during the subsequent twenty-five years. In 1855 a similar experiment in southwestern Ohio, under the leadership of Mr. A. J. Rickoff, John Hancock, and other eminent educators, for opening an institution at Oxford resulted in placing what became, after an unsuccessful attempt at management by a corporation, the private "National Normal School," at Lebanon, Ohio. Under the enterprising and devoted superintendence of the Holbrook family, this seminary won a national reputation among the permanent institutions of the Northwest. Another experiment was the "Western Reserve Normal School," in Erie County, which in 1858 was reorganized from an academy established in 1831–32. A number of successors, more or less important, have followed these experiments at private normal school keeping in Ohio, especially after the close of the civil war. The city normal or training school, especially for elementary women teachers, according to the plan developed at the Oswego, N. Y., State Normal School, came to Ohio at a later date, and, with the establishment of a department of pedagogy in the Ohio University, at Athens, still represents all the public organization outside the Teachers' Institute which this great State has yet afforded to the training of teachers. It should be said that this policy of the legislature of relying chiefly on private enterprise for this great public duty has been in opposition to the almost unanimous opinion of the Ohio school men and educators of national reputation from the days of Samuel Lewis to the present hour.

In 1857 Mr. Anson Smyth was elected as successor to Mr. Barry to the office of State commissioner of common schools. Mr. Smyth had formerly served as superintendent of common schools at Toledo, Ohio, and as editor of the Ohio State Journal of Education for several years. His administration was distinguished by a devoted and intelligent application to the educational needs of the Commonwealth rarely found in his position. Notwithstanding the meager salary of the office, $1,500 per annum, with no provision for clerk hire or traveling expenses, and with a large amount of work beyond the sphere of his official obligation, the commissioner could say at the close of his stewardship in 1860:

> I have spent four hundred days in visitations through the State; have traveled 20,000 miles in the discharge of these duties; have addressed not far from 400 educational meetings, large and small; have visited every one of our 88 counties, many of them more than once, and have formed the personal acquaintance of a large proportion of the active friends of education through the State. I think it highly probable that I have seen more of Ohio and addressed a greater number of its people than any other one of its citizens.

Certainly these great labors were supplemented by a corresponding fidelity of the commissioner in his office. No series of Ohio State reports up to that date will bear comparison with the elaborate documents put forth by Commissioner Smyth. It only needed that they should be read, or, as he constantly reminded the people, that an effective group of agents of the educational department should be kept in motion through the State to enforce the important truths so intelligently and eloquently presented, to insure a more rapid development, especially of the normal-school system. But thus far the results of the common-school revival originated by Lewis and his contemporaries a quarter of a century before had been chiefly realized in the building up of a system of graded and union schools in a large number of the considerable villages and cities, while the obstinate jealousies and local ambitions of the countryside still held back the rural districts from the enjoyment of the good time already come.

In his first report Commissioner Smyth calls attention to one of the most serious defects of the Ohio school system—the utter absence in the legislation of the

State of anything approaching either a compulsory educative or a juvenile vagrant law. In 1857 the whole number of persons of school age in Ohio was 838,000; the number enrolled, 603,000, and the average daily attendance (the real test of the merits of a school system) 351,000. After all suitable allowance, the commissioner asserts that 300,000 children and youth who ought to be educated are not in attendance at any school. The diplomatic way in which he refers to the school laws of Massachusetts in both these respects suggests the popular pride in that glorious independence which is not only the "hiding place of power," but also a flowing well of weakness and disorder, especially in so many of our new American communities.

The careless and improvident way in which the provisions for district school libraries had been administered had persuaded the legislature to suspend and had furnished the commissioner an excuse for the abolition of the system. It was not abolished, but in many parts of the State it remained virtually a dead letter. Still, a ruling of Commissioner Barry that a city might concentrate its district libraries laid the foundation, not only in Cincinnati, but in several of the larger towns and cities of the public libraries, which have been a great educational feature of the municipal life of Ohio.

In 1858 the commissioner bears a deserved public testimony to the services of the State Teachers' Association during the period of reformed school-keeping upon which the Commonwealth had entered in 1853. Organized in 1847, its meetings concentrated the best judgment of the superior teaching class and were really the soul of the executive force at work in behalf of the common schools. Through the support of the teachers' institutes, and especially the labors of Agents Andrews and Lord, sent through the State, it had become a mine of information and a perpetual goad of progress to the legislature. All this work had been done with no aid from the legislature and at the expense of a large amount of money to the teachers, who were then, as now, the most poorly paid professional class in the country.

The commissioner constantly kept before the people the need of a better school supervision for the counties and larger districts of the State. An attempt to give to each of the county boards of school examiners a function as school visitor, with some of the duties usually belonging to such an official, failed, and the commissioner at Columbus was still compelled to "make a long arm of it" in reaching down to the township, practically to the school district boards, in 1,600 little communities.

In 1859 the supreme court of the State made a decision affecting the 14,000 colored children and youth of Ohio: that children five-eighths white and three-eighths colored were not permitted to attend the public schools established for white youth. It is only within the last four years that the common schools of Ohio have been open and free to all its children and youth.

In 1860 the commissioner calls attention to the increase of free high schools in the State. When the school law of 1853 was enacted there were but 20 in Ohio. There were 161 in 1869, with 319 teachers and 13,183 pupils. There were 20,000 public school teachers in the State in 1860, almost equally divided between men and women, of whom one-half held certificates of not more than six months' duration, while but a few held certificates of the highest grade, good for two years. Three thousand of the teachers had come from the Eastern States, chiefly from New England and New York, while a majority in the rural schools were of Ohio birth and education. The colleges of the State produced but few professional, though many temporary, teachers, and 2,000 of the 20,000 had been students in some department of a so-called college. Oberlin; Antioch, founded by Horace Mann; Hiram, where James A. Garfield was president; and Delaware are mentioned as especially noticeable in this respect. The local private normal schools furnished but 500 teachers per annum and the free high schools but 1,500. Hence the remaining 12,000 common school teachers of the State were prepared chiefly

in the district schools. In contrast to Massachusetts, New Jersey, Connecticut, New York, Pennsylvania, Rhode Island, Michigan, Illinois, Minnesota, and Wisconsin, "Ohio stands almost alone among our Northern States in doing nothing for the training of teachers." Some twenty teachers' and normal institutes had been held in the State during the past four years, which, to a very limited extent, had been subsidized by public funds.

Commissioner Smyth held the office two years longer, until 1860. At this period, the limit of our present record, it is interesting to note the condition of popular education in Ohio. The State was now receiving, from all sources, the annual income of $3,694,527.83 for educational purposes. Of this there had been expended in 1860 $753,852.94, there being a balance on hand from the preceding year. For all educational purposes there was expended in 1860 $2,834,064.40. There were in the State 912,960 children and youth between 5 and 21, of whom 717,726 were enrolled in common schools, with an average daily attendance of 425,033. These were gathered in 1,672 school districts and 13,899 schools. The average length of the term was six months and six days, and of the high schools eight months and sixteen days. Twenty-one thousand three hundred and sixty teachers were employed, the men exceeding the women by nearly 1,000. The average wages of teachers were, in high schools, men $61.12 and women $34.08 per month; in common schools, $27.81 and $16.05. There were 10,570 schoolhouses in the State, valued at $4,794,395. Two thousand of the male teachers enlisted in the Union Army in 1861, among whom a large number afterwards were distinguished in military and civic life.

With the drawback of that complete organization without which no American Commonwealth can be expected to do its best in popular education, the State of Ohio during the thirty years from 1830 to 1860, the period of the great revival of the American common school, had illustrated the power and persistence of an American people to survey and open the highway to the summit of republican society for every child through the open door of the common school. And of no body of educators in the Union can it be said with greater emphasis than of the leading school men and women of Ohio that on their heads should repose the wreath of honor for this great achievement. Few of the eminent public men of Ohio have at any time been conspicuous in their advocacy of the people's common school, although none, perhaps, found in open dissent. The Ohio legislature has always been among the most difficult in the Northern States to be moved in the interest of radical school reform. For what has been done the State and people have been chiefly indebted to this class of able, progressive, and persistent men and women teachers and lay friends, who, "through evil report and good report," have held up the banner of universal education. And to them will the future historian of this great Commonwealth refer as, beyond any other class, the authors of the important position now occupied by Ohio among the States of the Republic.

INDIANA.

In a volume prepared and published under the sanction of the State by Hon. James H. Smart, A. M., now president of the State Agricultural and Mechanical University, at Lafayette, Ind., to accompany the exhibit of that State at the international exposition in Philadelphia, 1876, we find the following statement:

> It was not until after the adoption of the new constitution, in 1851, that any positive legislation was obtained for the establishment of common schools entirely free and under the exclusive management of the State. * * * The new constitutional provision for the establishment of "a general and uniform system of common schools, wherein tuition shall be without charge and equally open to all," was accepted by a majority vote of more than 80,000. The statutory form and expression given to the new constitutional provision, entitled "An act to provide for a general and uniform system of common schools and school libraries," approved

June 14, 1852, was the first law which made it possible to build up a system of State schools worthy the name and the first step toward putting into execution the constitutional provision provided thirty-six years before.

The constitution of 1851, before mentioned, contains the following provisions relating to education:

The general assembly shall not pass local or special laws providing for supporting common schools and for the preservation of school funds. [Article IV, section 22.]

ARTICLE VII.—EDUCATION.

SECTION 1. Knowledge and learning generally diffused throughout a community being essential to the preservation of a free government, it shall be the duty of the general assembly to encourage by all suitable means moral, intellectual, scientific, and agricultural improvement, and to provide by law for a general and uniform system of schools wherein tuition shall be without charge and equally to all.

SEC. 2. The common-school fund shall consist of the Congressional township fund and the lands belonging thereto; the surplus revenue fund; the saline fund and the lands belonging thereto; the bank-tax fund, and the fund arising from the one hundred and fourteenth section of the State Bank of Indiana; the fund to be derived from the sale of county seminaries, and the money and property heretofore held for such seminaries; from the fines assessed for breaches of the penal laws of the State, and for all forfeitures which may accrue; all lands and other estates which shall escheat to the State for the want of heirs or kindred entitled to the inheritance; all lands that have been, or may hereafter be, granted to the State, where no special purpose is expressed in the grant, and the proceeds of the sales thereof, including the proceeds of the sales of the swamp lands granted to the State of Indiana by the act of Congress of 28th of September, 1850, after deducting the expense of selecting and draining the same; taxes on the property of corporations that may be assessed by the general assembly for common-school purposes.

SEC. 3. The principal of the common-school fund shall remain a perpetual fund, which may be increased, but shall never be diminished; and the income thereof shall be inviolably appropriated to the support of common schools, and to no other purpose whatever.

SEC. 4. The general assembly shall invest in some safe and profitable manner all such portions of the common-school fund as have not heretofore been intrusted to the several counties, and shall make provision by law for the distribution among the several counties of the interest thereof.

SEC. 5. If any county shall fail to demand its proportion of such interest for common-school purposes, the same shall be reinvested for the benefit of such county.

SEC. 6. The several counties shall be held liable for the preservation of so much of the said fund as may be intrusted to them and for the payment of the annual interest thereon.

SEC. 7. All trust funds held by the State shall remain inviolate and be faithfully and exclusively applied to the purposes for which the trust was created.

SEC. 8. The general assembly shall provide for the election by the voters of the State of a State superintendent of public instruction, who shall hold his office for two years and whose duties and compensation shall be prescribed by law.

ARTICLE X.—FINANCE.

SECTION 1. The general assembly shall provide by law for a uniform and equal rate of assessment and taxation, and shall prescribe such regulations as shall secure a just valuation for taxation of all property, both real and personal, excepting such only for municipal, educational, literary, scientific, religious, or charitable purposes as may be especially exempted by law.

At this time, 1852, the State of Indiana was 36 years old as a Commonwealth, having been settled in 1830. In area it is an empire of 33,809 square miles, with a population increasing from 5,641 in 1800 to 343,031 in 1830, 685,866 in 1840, and 988,416 in 1850. At the breaking out of the civil war, in 1861, the population was 1,350,428. Growing States, like young children, are sometimes affected with alarming signs of structural weakness. The rapid growth of this great Commonwealth of the West was shadowed by the illiteracy in which for a brief period it surpassed all States of the North, with only three in the South lower in the scale. In 1851,

at the adoption of the new constitution, there were more than 70,000 adult persons in Indiana unable to read. Four years later 76,600 above 10 years of age were illiterate to that degree and twice that number reported by the census as unable to write. The large contingent of population from the uneducated class of the South and the considerable number of ignorant foreign immigrants account for this condition of affairs and the slow educational movement of the State previous to 1850.

But when the wave of the great revival struck Indiana in 1851 it was with no uncertain shock. The new constitution and the school law of 1852 stand out in the early Western legislation on education as beyond question the most advanced and comprehensive of all the new States. The fundamental principles that the property of the State shall educate the children and that all common schools shall be free; the school levy of ten cents in every $100; the consolidation and careful management by the State of all school funds; the declaration that each township shall be an educational unit and its trustees (the New England "selectmen") shall also have complete control of educational affairs, with power to build schoolhouses and grade the schools; the holding of the counties responsible for the preservation of the school fund and the use of the interest thereof; the establishment of a State board of education, consisting of a superintendent of public instruction elected by the people, the governor, secretary, treasurer, and auditor of the State; the establishment of a uniform series of schoolbooks; a workable system of township school libraries, under the direction of the State board of education and supported by a tax of one-fourth of 1 mill on each $1 and a poll tax of twenty-five cents; the making of cities and important towns school corporations independent of the township of which they are a part, with full power to establish graded schools and levy taxes additional to the public funds; the right of any township to vote a local tax for all school purposes of fifty cents on each $100 and fifty cents on each poll;—here was a new departure by a new State hitherto known as a laggard in the rear of the national educational procession that inspired the friends of the common school within and without its bounds with enthusiastic expectations.

It is possible that in this the constitution makers and the legislature struck a mark too high for the immediate success attempted. The movement that ultimated in this action was to a larger extent than in some other States in charge of a body of very intelligent and progressive educators. Several of them were connected with the colleges established by Eastern missionary zeal and money. Especially do the historians mention Caleb Mills, a native of New Hampshire, a professor of Wabash College, afterwards superintendent of public instruction, as an influential advocate of the common school. For several years he had literally belabored the legislature and the people of the State with educational facts, appeals, and memorials. From the earliest period the State had been fortunate in the number of strong and liberal schoolmen connected with its colleges, seminaries, and denominational schools. As early as 1826 Francis Joseph Nicholas Neef, an associate of Pestalozzi, at Berne, Switzerland, came to New Harmony, Ind., and established a school founded on the philosophy and methods of his great master. One of his instructors was Robert Dale Owen, and the school had the powerful influence of William Maclane and Thomas Say, the distinguished naturalist. Among the pupils of Neef was the future Admiral Farragut. Neef published several treatises on "The New Education," then first known in this phase of its application in the country. The first three State superintendents of public instruction, Larrabee, Mills, and Riggs, were natives of Maine, New Hampshire, and New York. With such influences behind the movement it is not remarkable that the Indiana constitutional convention of 1851 and the legislature of 1852 gave to the whole country assurance of a brilliant educational career for the Hoosier State.

The reaction came. Not from the people, but through several decisions of the

courts impeaching the constitutionality of the provisions for township unity and the establishing of graded schools. For the ensuing ten years the educational public in Indiana was greatly involved in the contentions provoked by these adverse decisions. Several of the reports of the superintendents of public instruction during this period are almost entirely occupied with the arguments and explanations connected with these important fundamental principles of the revival movement. It was not until the close of the civil war, which, in more ways than one, had lifted Indiana to its present rank as one of the foremost of American Commonwealths, that all these obstacles were swept away by the rising educational spirit of the State. Then came the establishment of the teachers' institute, the State normal school, and the development of the two State universities, which built the highway by which the Commonwealth has mounted to its present exalted position.

One of the most important agencies here, as in Ohio, for the informing of the public mind, the lobby for righteousness in the legislature, and the constant improvement of the profession was the State Teachers' Association, organized at this juncture in 1854. It was preceded and flanked by associations in the different counties. Indeed, these associations were the pioneers of the teachers' institutes, which, after 1865, largely took their place. At the organization of the State Teachers' Association at Indianapolis, in 1854, 178 members appeared, representing 38 counties. Horace Mann, then president of Antioch College, Ohio; E. D. Mansfield, the veteran journalist of the West, and Dr. Robert Breckinridge, whose heroic fight for the children had saved the State school fund of Kentucky from its despoilers, attended and made inspiring addresses. The list of the presidents of this association for many subsequent years contains the names of the most celebrated educators of the State.

The school institute was first heard of in Indiana in 1846, and continued in 1849, 1850, 1851, and 1852, with an increasing attendance. It held on as an annual visitor under able management till 1865, and the movement for the establishment of the State normal school at Terre Haute was largely due to its influence. Until 1865 all the work was done at the expense of the teachers. Township institutes were also in vogue, and were regarded so important that in 1873 the State provided that one Saturday in each school month "should be devoted to township institutes and model schools for the improvement of teachers." State institutes, first under the direction of the State Teachers' Association, were established in 1865, and finally passed under the management of the State board of education.

The administration of the township library in Indiana was far more successful than in Ohio, because it was a township and not a district institution. In 1854 $147,000 was expended in the distribution of 143,000 volumes. In 1858 100,000 additional volumes were purchased at an expense of $110,000. It is doubtful if this movement in any State has ever realized the high expectations of its projectors. But one important result has been the impetus it undeniably gave to the establishment of the present town and city libraries that are now becoming a vital element in our educational life, both in furnishing good reading to the people and a guide for the new generation in its perilous journey through the literary wilderness of the coming years.

One of the earliest acts of the State association of teachers was to arrange for the publication of a journal of education. In 1854 it was undertaken, in charge of a group of educators. After the usual varied experience of such ventures in other States, the Indiana Journal of Education became the property of Prof. W. E. Bell, a pupil of Horace Mann, in Antioch College, and one of the successful teachers and institute workers of the State. Under his administration it has become one of the few educational journals of permanent value in the country and largely monopolizes the field of educational journalism in the State.

The Indiana University, established provisionally in 1804 at Vincennes and in

1820 in Monroe County, was opened in 1825. Rev. B. R. Hall, of Connecticut, was its first president, serving the Territory at a salary of $150, afterwards raised to $400 a year, with a professorship of mathematics and physical sciences at $300. In 1828 it was declared a full college by the legislature, and Dr. Andrew Wylie presided over it till 1851. A crisis in its life was the destruction of the buildings by fire in 1854, and the crippling of its funds by a lawsuit against the Vincennes University. But these hindrances only confirmed the spirit of its advocates and made new friends in the State and nation. An additional grant of lands by Congress, and State aid, with the erection of new buildings at Bloomington in 1856, gave it the upward pace it has ever since held among the more successful State universities of the country. A dozen schools under the title of college or university were in operation in Indiana during the period now under consideration previous to 1860. The State agricultural and mechanical college, endowed by the Congressional land grant of 1862 and the munificence of John Purdue, was not established until ten years later. Several of these colleges and academies achieved a national reputation, and from their early establishment doubtless came much of the influence that finally lifted Indiana above her low estate of common-school instruction previous to the constitutional provision and the law of 1851–52.

The State was fortunate in the election, by popular vote, of two notable educators to the new office of the superintendent of public instruction, from 1852 to 1860. The first superintendent was William C. Larrabee, who held the office from 1852 to 1854 and by reelection from 1856 till 1859, near the period of his death. Mr. Larrabee was born and educated in the State of Maine, from 1802 to 1828, and after a successful career as a teacher in his native State, Connecticut, and New York, where, as principal of a Methodist seminary at Cazenovia, Oneida County, he educated 7 college presidents, 27 principals of seminaries, and 12 editors of religious periodicals, he came to Indiana in 1841, as professor of Asbury University, an author of books and contributor to various periodicals. In 1852, at the age of 50, he was elected first State superintendent of public instruction of Indiana.

His first two reports, 1853–54, were largely devoted to the explanation and defense of the new system of schools he was elected to supervise. As the local officials who were required to make returns to the statehouse did not then exist, he was debarred from any elaborate dealing with the unreliable piles of figures called school statistics in those days. He asserts, we know not by what authority, that Indiana already pays for the support of her asylums for the deaf, dumb, and blind "more than any State in this Union has done." He exults over the abolition of the rate bill, and declares this feature especially characteristic of the people of Indiana. It was certainly a forward step, as was the substitution of the township for the district system of rural school organization, that still held on with a death grip in all the Eastern States. He tells the story of a citizen of the State who sent his daughters to a female academy, away from home, and, after a year, feeling that they had been schooled out of sympathy with their old companions, established a free school with the money he was paying at the seminary, engaged a superior teacher, and had the satisfaction of educating the youth of the entire neighborhood into the art of living together. He closes an eloquent plea for union in the people's schoolhouse, with the fervent ejaculation, "Blessed be he who invented female teachers." He disposes at once of the popular expectation that he should be a traveling pedagogue, by showing that it would require sixteen years to spend one day in each school district, and three years to visit every township. But, according to his physical ability, he faced the ordeal and invoked the sympathy, aid, and comfort of all good Christian people in his great work.

One of his most valuable pages is devoted to an exhortation to all young aspirants for political distinction to enter the field as advocates of universal education, "as the cause is now certain to be popular as well as right in the years to come." He announces the fact that two of the colleges in the State have now a normal

department, and all are looking that way. The State school fund already consisted of, first, the Congressional township land endowment, $1,608,000; second, the Congressional surplus revenue fund, $553,000; third, the saline lands, salt springs given to the State by the General Government, $61,270; fourth, the bank-tax fund, whereby 12½ cents on every share of stock held by individuals should be deducted from the dividends of the State Bank of Indiana, $57,000. Accordingly, the State, in 1852, had a total educational fund of $2,278,588, with an income, at 7 per cent, of $159,501. This has been largely increased, until the State now has one of the largest school funds in the Union, exceeding that of any of the original thirteen States.

The number of children and youth in the State between 5 and 21 was estimated at 414,000, and this would give 35 cents per annum of the school moneys to each person of school age; $21 a year to support a school of 60, and $35 for 100 pupils. The new school law, providing for a tax of 10 cents on $100, furnished about $200,000, a total of $344,000—83 cents to each child. Under the law $400 would be allotted to each township, enough to support four good schools, taught by men at the ruling price, for ten months in the year. The superintendent estimates the possibilities of the State school fund at $5,000,000. He explained the large illiteracy of the State on the plea of the immigration of large numbers of ignorant foreigners, and of the illiterate class of Southern people who had come especially to the southern portion of the State.

His description of the average country schoolhouse reminds us of a good deal in all the States, old and new, as revealed by the search light of the great revival from 1830 to 1850. The superintendent devotes a generous portion of his report to a description of the improved methods of instruction, the advance of school discipline of the more humane sort, and the need of an educational revival. Several of the larger towns of the State had already begun the work of establishing graded schools.

In 1854 it was announced that a pamphlet containing the new school law had been prepared for general circulation, with proper explanation. The superintendent administers a vigorous and illuminating exhortation to the township trustees (corresponding to the New England "selectmen"), who by the statute had the care of the public schools added to their other duties, a plan that was soon demonstrated to work badly, and asserts that Indiana has been "the first State to abolish the old district system." His exultation was a little premature, for by subsequent reactionary legislation there came a falling away from this provision. The general survey for the year was almost as encouraging as the year previous.

The State school report for 1855 was made by Caleb Mills, second superintendent of public instruction. Mr. Mills was a native of New Hampshire, a graduate of Dartmouth College, in 1828, and of Andover Theological Seminary. In 1833 he became president of the Preparatory School at Crawfordsville, Ind., that ripened into Wabash College, where he served as professor of Greek and Latin literature. For years, in this position, he had written largely and ably in support of public schools under the title of "An Address to the Legislature," and his labors were credited with being influential in the final result of a practical system of common-school education in 1852. In 1854 he was chosen superintendent of public instruction, and during his official term of two years and three months was thus employed, returning to his college professorship at the close of his public service.

During the first year of his administration a decision of the courts came "like a sirocco of selfishness," withering the hopes of the graded schools that had risen in several of the larger towns. But the superintendent finds hope in the organization of the State Teachers' Association. The statistics of the school life of the State were slowly coming to the front. There were 91 counties, 938 townships, and 95 corporate towns and localities in the State. The valuation of property in Indiana was $290,418,148. There were 3,098 teachers and 455,000 persons of school

age. Notwithstanding the enthusiastic estimates of Superintendent Larrabee, the actual average school term was but two and one-half months. Superintendent Mills estimates that $1,000,000 would be required to support a six-months free school in Indiana. He storms at the legislature in high rhetorical fashion for its neglect to furnish the means to work the admirable State school system of education, still only on paper. "Nothing has contributed to bring the system into disrepute so much as its inefficiency." He believes the people only need to be appealed to and given a chance to manifest their spirit by amending this unsatisfactory condition.

In the second report, 1857, Superintendent Mills renews the good fight with a zeal not easily dampened by the discouragements of the situation. He takes fresh hope from the experience of the past year. He insists on the necessity of a six-months school, even if not entirely free, and warns the people of the folly of placing the sacred interest of the children in the hands of indifferent and incompetent officials. He elaborates a system of township schools, practical and easy of management, provided the necessary amount of money could be had to move the present inert mass.

In a subsequent report the superintendent broaches the idea of a group of associate superintendents, corresponding to the agents of the board of education in several of the States, to traverse the Commonwealth and wake up and inform the people. He urges the establishment of several normal schools and teachers' institutes. He advocates a system of State supervision of all colleges and a board of regents, and in each a State professor of literature and civic studies. Before the revival of the common school there had been expended in private institutions $183,000 in buildings and $285,000 had been paid for the instruction of 7,920 students. There was an investment of $325,000 in their present endowments; 25,000 pupils were now in these seminaries. From this body of students the State was receiving service as superior teachers in all varieties of schools. He also urges a speedy establishment of a school of reform.

In the two years of the service of Superintendent Mills the common-school interest had been substantially extended. The number of scholars had increased 35,000, the fund distributed to the counties $54,000; 1,000 additional districts and schools had reported, and the average length of the school term had risen to nearly four months. Six hundred and fifty schoolhouses had been built in 1856, 1,241 in two years, at a cost of $796,000. More money and better teachers were the crying needs of the schools. An important address to youth was bound up with this earnest and energetic report; also a catalogue of the books furnished to township libraries.

In 1858–59 Superintendent Larrabee was reelected, and served with his usual vigor. A large portion of his two reports is given to elaborate discussions of the adverse decisions of the courts which had well-nigh paralyzed some of the most important features of the system inaugurated in 1852. His conclusion is that "a radical and thorough revision of the law, or such a change in its construction as will enable us either to render the system more effective or to substitute therefor a new system on different principles" is necessary. The legislature had continued at its old work of "tinkering" the law, and had deprived the present statute of some of its most valuable features.

In his report of 1858 Superintendent Larrabee states the radical defects of the school law of 1852. It committed the unpardonable offense in a new American State of removing the system of public education too far from the immediate control of the people. "The people," he says, "had no direct influence on the management of their schools, and could make improvements and correct abuses only by the slow process of changing their trustees, or the indirect method of appeal to the county auditor and the State superintendent." The school funds were collected and distributed to the townships in proportion to their school population.

Just how a community could manage its schools without the agency of trustees and some local method of administration does not appear. The trouble seems to have been in the abolishing of the district system, at once the most popular and most mischievous of all the features of the common-school system fought over during the past one hundred years. In 1855 the legislature had made "a thorough revision of the law, by which the theory and practice of the system were greatly modified." Another revision was planned. The superintendent points out that several features of the revised law of 1855 are "utterly impracticable." The habit of giving the State treasurer such power for ordinary current expenses is fatal to the school system. A chapter of the revised statutes retains the old district without abolishing the township system. A new official, called a director, is provided for. A competent organization of each school district is allowed, to which is assigned certain regulations limiting the power of the township trustees.

In short, it appears that a movement of reaction had captured the public-school system and entangled it again in a maze of contradictory legislation, which "furnished endless sources of conflict to trustees, people, and director." The upshot of the matter seems to be that, while the State had twice the amount of money at hand to school the children of any previous year—$750,000—the restless agitation for personal rights had so demoralized the entire machinery of the system that the superintendent found himself called to do a score of impossible things while involved in the perpetual complaints of quarrelsome townships and districts.

In 1859 Mr. Samuel L. Rugg was elected State superintendent of public instruction and held the office till 1861, and subsequently from 1863 to 1865. Mr. Rugg was a native of the State of New York, born in 1805, and in 1836 removed to Indiana, where he became a prominent man in the development of two counties and their representative in the State senate. His administration during both terms covers the years of the civil war. Indiana, probably more than any other Northern State of the Union, during this period was distracted by the agitation of hostile political elements, at times almost reaching the crisis of a home conflict of arms. The superintendent advises that an additional executive board be composed of the school examiners of the counties, to fill up the gap between the State superintendent and the township trustees and director. The experiment of the school "director," who seemed to be used chiefly to worry the township trustees in the administration of educational affairs, and whose actual success in relieving the State superintendent was inappreciable, appears to have been a failure. The superintendent speaks out with confidence on the necessity of a system of normal schools.

In 1861 the State was under the vigorous administration of Governor Oliver P. Morton, with Mr. Rugg still serving as superintendent of public instruction. Here, at the limit of our present record, it is encouraging to contemplate the advance that had been made during the past decade, despite the acknowledged weakness of the system and the embarrassing changes of the school laws and popular discontent therewith. There were now 512,000 children and youth of school age in Indiana; 7,300 school districts; 6,933 primary and 78 high schools; an average school attendance of 215,000, with an enrollment of 278,000 pupils; 7,000 teachers; 1 State university; $544,980 appropriated for public instruction, and the total school revenue $1,376,425, with a school fund of $600,000 provided for by law; $324,000 had been expended on schoolhouses during the past year; 11,800 pupils in the State were attending select schools.

No State of the Union was more agitated by the civil war than Indiana. But out of this fierce contention was evolved the splendid demonstration of patriotism that so distinguished the Commonwealth in the hour of the nation's peril. The return of peace was signalized here, as everywhere through the Northwest, by the great awakening of the educational spirit, which has borne this important section of the country as on the waves of a swelling flood to its present exalted position in the administration of its system of public instruction.

ILLINOIS.

In 1818, on its admission to the Union, the State of Illinois, with an area of 55,000 square miles and a population of 55,000, placed in the ordinance accompanying its constitution the following recognition of education:

Whereas the Congress of the United States, in an act entitled "An act to enable the people of the Illinois Territory to form a constitution and State government and for the admission of such State into the Union on an equal footing with the original States," passed the 18th of April, 1818, has offered to this convention for their free acceptance or rejection the following propositions, which, if accepted by the convention, are to be obligatory upon the United States, viz:

First. That section numbered 16 in every township, and, when such section has been sold or otherwise disposed of, other lands equivalent thereto and as contiguous as may be, shall be granted to the State for the use of the inhabitants of such township for the use of schools. * * *

Third. That 5 per cent of the net proceeds of the land lying within such State and which shall be sold by Congress from and after the 1st day of January, 1819, after deducting all expense incident to the same, shall be reserved for the purpose following, viz: Two-fifths to be disbursed under the direction of Congress in making roads leading to the State, the residue to be appropriated by the legislature of the State for the encouragement of learning, of which one-sixth part shall be exclusively bestowed on a college or university.

Fourth. That thirty-six sections, or one entire township, which shall be designated by the President of the United States, together with the one heretofore reserved for that purpose, shall be reserved for the use of a seminary of learning and vested in the legislature of the said State, to be appropriated solely to the use of such seminary by the said legislature.

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Therefore, this convention, on behalf of and by the authority of the people of the State, do accept the foregoing propositions; * * * and this convention do further ordain and declare that the forgoing ordinance shall not be revoked without the consent of the United States.

In 1848 this action was confirmed by the following provision in Article IX, sections 3 and 5, of the revised constitution:

ART. IX, SEC. 3. The property of the State and counties, both real and personal, and such other property as the general assembly may deem necessary for school, religious, and charitable purposes, may be exempted from taxation.

SEC. 5. The corporate authorities of counties, townships, school districts, cities, towns, and villages may be vested with power to assess and collect taxes for corporate purposes, such taxes to be uniform with respect to persons and property within the jurisdiction of the body imposing the same. And the general assembly shall require that all the property within the limits of municipal corporations belonging to individuals shall be taxed for the payment of debts contracted under authority of law.

In a former essay it has been shown through what difficulties and clouds of opposition the State of Illinois made its way up to the school law of 1854, which was the corner stone of the structure which renders the State so conspicuous in its educational affairs. A most instructive volume will yet be written by some of the ambitious graduates of one of her universities to commemorate the long and devoted efforts of her foremost teachers through educational associations, State legislatures, ladies' education societies, teachers' institutes, and gatherings of the friends of popular education at all the centers of public influence through an entire generation to bring the widely dispersed and conflicting elements of her population to face the most vital problem of our American society, the education of the children. In the report of one of those meetings we read the names of Stephen A. Douglas, acting secretary, and Abraham Lincoln, attending delegate. One of the most potent and influential of all these special agencies was the new college of Illinois, founded as an elementary school at Jacksonville as early as 1826, when the State had a population of only 130,000, by a missionary from Andover Theological Seminary, Massachusetts, and taken up later by a devoted

band of young men from Yale College, Connecticut. This, the only college in the State founded on an undenominational basis, under the presidency of Rev. Edward Beecher, threw its entire influence on the side of the common school. One by one these separate demonstrations persuaded the legislature to patch up again its medley of school legislation, itself "a thing of shreds and patches." But no law prior to 1854 was strong enough to bring the State into any harmony of action.

As early as 1847, the secretary of state and ex-officio superintendent of schools, exposed what was still, after the great revival of the common school had been ten years on its triumphant progress in the East, the feeble condition of public instruction in this rapidly growing Commonwealth. He reports that after a rousing circular addressed to the school commissioners of each of the 99 counties of the State, he received a reply from only 57. The meager returns from these officials were explained by them on the ground of the indifference and often incapacity of the township officials. He declares that this condition of affairs "shows a most lamentable apathy and want of interest in the cause of education throughout the State." "Notwithstanding our statute books have been encumbered with school laws, no one of them has ever been carried into vigorous and effective operation." The legislature that enacted the last of these ineffective statutes "forgot that a great desideratum of every such law should be to combine efficiency with economy." Its lack of wisdom appeared in burdening the already overtaxed office of secretary of state with the confused and enormous affairs of the education of a Commonwealth as large as a European kingdom. The superintendent insists on the necessity of personal contact with the people as the sole condition of their awakening to the obligations and perils of the situation. He says:

> While the people are wrought up into a kind of political frenzy, the great question of the preparation of youth for the proper exercise of political privileges seems to have been forgotten, and the very pillar upon which our institutions rest and on whose strength alone we can hope for their security and perpetuity is passed by almost in silence.

He recognizes the value of local associations, county conventions, and frequent meetings of the influential friends of education in what has already been achieved and urges a greater interest in public affairs. After this fashion he goes on, ranging through the usual topics of incompetent teachers, poor schoolhouses, the need of district libraries, normal schools, institutes, etc., all of which was probably not read by half the "fathers of the State" in legislature assembled. He also deals with numbers of wealthy people who so generally oppose taxation for schools to which they do not propose to send their own children. The school statistics of the year were only furnished in an imperfect form for half the counties of the State.

A year later, 1849, Hon. H. S. Cooley, secretary of state, reports that "no system of schools in Illinois has as yet received the benefit of a complete and satisfactory experiment to test its capacity." The fundamental condition "that the mind of the whole people should be informed with a proper sense of the importance of education" had not yet been secured. Temporary and provisional laws have had their day. "Qualified, practical, and paid school officials were required by law to furnish necessary information and assistance, and whose duty it should be to promote the public prosperity by their devotion to the educational interests of the community." A secretary of state, with a salary of $800 a year, and the duties of half a dozen men flung upon his shoulders, is no man to lift this additional burden of the people's schooling for American citizenship. After doing his best, not one-half the schools of the State have responded or made any satisfactory report. "While the free schools of Chicago, Quincy, and many other towns are not surpassed for their perfection and efficiency by those of any other State in this part of the Union," the lack of individual enterprise, which has wrought so powerfully

in these localities, is responsible for the low estate of large portions of the Commonwealth. "The State is not supplied with one-half the number of qualified teachers to instruct the schools that should be in operation." The secretary pleads for the separation of the important office of school commissioner, State, county, and township, from that of some other already overburdened official. He outlines a series of amendments to the school law that would place the school system on a secure foundation.

It would be unprofitable to follow in the train of educational reports of this character which fill up the years from 1849 to 1854. Suffice to say that long and aggressive agitation by the progressive friends of popular education at last brought the tardy legislators to the point of providing for the position of State superintendent of public instruction in 1854. Mr. Ninian Edwards was the occupant of the office for the first two years. The most important action of the new superintendent seems to have been the drawing up of a new school statute, by direction of the legislature, which was offered as a portion of his report in 1854. This was preceded by the first successful attempt to exhibit the educational statistics of the State.

The total amount of the State school fund was $952,000, the interest on which was $57,000. By this time 79 of the 99 counties of the State, after their leisurely fashion, had made partial returns, from which it was ascertained that all the school funds of the Commonwealth, State, county, township, etc., with the remainder of the unsold school lands, amounted to $2,954,000, and the total interest available for the support of common schools was $196,281. Another $43,000 was appropriated for schoolhouse building and furnishings. In these 79 counties there were, in 1854, 4,215 schools, taught by some 4,000 teachers, at $25 for men and $15 for women per month. In 1850 there were 496,000 white children in the State under the age of 21. Of these 407,000 were in the 79 counties; 136,000 were enrolled, with no estimate of age or daily attendance. The schools were in session six months in the year. In these counties $308,000 was expended for public education.

The new superintendent, in eloquent and practical style, explains the full meaning of a system of free education for the State as a preparation for the bill he offers for the consideration of the legislature. This bill, with the usual modifications, became the first law that really gave a workable system of common schools to the State of Illinois, thirty-six years after its admission as a State of the Union. It provided for the biennial election of a State superintendent of public instruction, with the official duties and responsibilities belonging to that official in a new American State, and a commissioner of education for each county, elected by the directors of the local boards of education. This county commissioner should be a practical school man to meet the severe demands of the law. Each township in the State was required to elect a school board of five directors, who should attend to all the duties usually assigned to officials of this description, establish common schools for six months in the year, buy lots and build schoolhouses, supervise the schools, and visit and advise as occasion might demand, elect and contract with teachers, grade the schools as might seem most suitable, if necessary provide for the schooling in private seminaries of the secondary education at the public expense, and make due report to the county officials and the State.

The county commissioners might encourage the formation of teachers' associations and institutes. Two additional examiners of teachers should be elected for two years each by the school directors of each county to aid the county commissioner in the examination of teachers, etc. The township board of education should have the general power of fixing the appropriation for schooling the children and imposing a tax on all property for purposes additional to the ordinary payment of teachers' wages. The scheme permitted the towns and cities to come in under a special law, establish schools for colored children and youth, with

other provisions. In short, here was a school law presented to the legislature in advance of that in almost any State of the Union for the use of a State not yet fifty years old, peculiar in its elements of population, inexperienced in public education, and hitherto unwilling to support anything that could be called a satisfactory system of public instruction.

Four years later, Supt. W. H. Powell complains in strong language against the confused and impracticable character of the school laws then in operation. He declared that "no State has ever succeeded by the use of such a mongrel plan." But whatever may have been the defects of this law, it certainly left the State free to express its determination to educate the people. In 1858 there were 10,238 public schools in session five and six months of the year, taught by 5,000 men and 3,000 women, with 440,000 pupils "in attendance;" about half the number of persons of legal school age under 21—800,000. There were 850 school-district libraries, 8,154 school districts in 98 counties, in several hundred of which no school had been kept. Fifty-two teachers' institutes had been held at an expense for each of $100. There were in the State 530 private schools, with 19,000 pupils, and 302 graded public schools. One hundred and twenty-seven students were in attendance on the State university; 58 academies and seminaries and 21 colleges filled out the catalogue of schools. The entire cost of public schools was $2,128,793. In short, under the operations of the school law of 1855, the State had expended in two years the sum of $3,708,635 in its public schools. The great revival of popular education had at last struck the new Northwest, hereafter not to recede.

The superintendent bears cheerful testimony to the influence of the teachers of the academical and collegiate institutions of the State in behalf of the common schools. The most successful of these institutions were established by the representatives of States that had already invested largely in the common-school experiment and understood what so many college presidents have not yet found out, that the broadest education of the masses by the State is the best guaranty for the development of the secondary and higher schools all the way up. The superintendent exposes the weakness in the position of the county school commissioners working without compensation and, of course, with neglect of their duties, and proposes a general system of county supervision by well-paid and competent officials. One-third of the school districts of the State have voluntarily supplied themselves with school libraries.

The State normal school had been established, on paper, in 1858, after a thorough discussion of the results of the movement by numerous teachers' associations and the emphatic support of the first two superintendents of public instruction.

A generous endowment of $300,000 was made by the legislature, and the town of Bloomington, county of McLane, supplemented this by an offer of $140,000. A building was projected, said to be the finest erected in the Union for such a purpose, at an expense of $80,000, and the classes removed to it in 1860. The furnishing of the building was in superior style, and the library of the State Historical Society was set up there. Prof. C. E. Hovey, called from the presidency of the Union School of Peoria, was the first principal. After two years he retired into the service of the Army of the Union, and his place was filled by Rev. Richard Edwards, so long and honorably known for his valuable services in the new education of the Northwest. A model school with instruction in several grades was at once made a department of the Normal University.

Superintendent Powell sums up the results of the common-school movement during the first two years of the new régime as follows: 1. The establishment of the State Normal University. 2. The organization of the district-school library in 1,000 districts. 3. The building of 3,000 new schoolhouses. 4. The support of free schools for nearly seven months in the year in nearly all the school districts of the State. 5. The addition of 200 new school districts. 6. The organization of

50 teachers' institutes. 7. The changing of two-thirds of the private academies and seminaries into public graded schools. 8. A great improvement in school furniture and apparatus. 9. "The awakening and building up of an all-powerful and constantly growing public opinion in all portions of the State, especially in the southern, in favor of public education, which has had no parallel in the history of the country." He predicts that if the next two years follow this example, Illinois will be educationally second in public-school eminence to no State in the Union.

An interesting feature of this great advancement in the cause of public education is the development of the school system in the city of Chicago. As late as 1834, near the time when Massachusetts woke up after a common-school experiment of two hundred years to the educational movement of the new time, the village of Chicago by the lake side began its illustrious educational career through the establishment of its first common schools. The school lands, donated to the township by the General Government, had been sold and the avails turned over to a board which had established a district school in the basement of a church. Other townships united to raise this to a sort of semipublic training school for teachers and such children as attended. In this somewhat undefined way the number of schools increased to seven in 1835. In that year, under a special law that encouraged the formation of school districts, the charge of the fund was delivered into the hands of four of these. In 1837 Chicago became a city, and the common council was made commissioners of schools. They were required to appoint a body of inspectors, five to twelve, and did appoint ten in 1837. In 1839, by special act of the legislature, the foundation of the present system of common schools of Chicago was laid. Seven inspectors and three trustees of each of the new districts were appointed.

At this period Chicago was a place of 4,800 population, and its schools were taught by four masters, working at $33.33 per month, eleven months of the year, five and one-half days of the week. A tax of 2 mills on the dollar was levied and schoolhouses built to supply the demand for a constantly increasing population. In 1850 there were 4 male and 20 female teachers, and the city had a population of 30,000. A system of Saturday institutes was organized for the instruction of the teachers. In 1854 the office of city superintendent was created, and the first superintendent was Mr. John C. Dore. The development was steady. A high school was established, and efforts were made to bring superior teachers to the city. In 1855 there were 7 grammar schools, 35 teachers, and 3,000 pupils for a city of 70,000 people, with a property valuation of $24,000,000.

In 1856 Mr. W. H. Wells, principal of the Westfield State Normal School of Massachusetts, was invited to the superintendency of the Chicago system of schools. At this time it was estimated that at least 3,000 children in the city were destitute of the means of education. The new superintendent labored to overcome this and the extremely transient character of a school attendance which made school-teaching almost the endless shouting after a throng rushing through a turnpike gate. A high-school building, at a cost of $50,000, was erected to accommodate 350 pupils, and the school was made coeducational under the principalship of Mr. Charles A. Dupee, a graduate of Yale College. A normal department was attached, with an attendance of 40 girls.

Like other new cities of the West, the city of Chicago suffered great loss by the premature sale of its school lands. As early as 1835 all but four of the original blocks of this property, "against the protest of 95 per cent of the people of Chicago," was sold for $38,865, on credits of one, two, and three years. This property in 1860 was valued at $12,000,000, and, if now owned by the city at its present valuation, would enable Chicago to support the most extended municipal system of education in the Union. The remaining four blocks, in 1860, were rated at $700,000. In 1839 the school fund of the city was taken from the superior body of the city

commissioners and intrusted to the city council. Under the wise administration of an agent of this board, for thirteen years, it was saved from utter destruction, and in 1860 was estimated in the neighborhood of $1,000,000. In 1860 Chicago was the largest city in the West, except St. Louis, which had undergone a similar experience in the official plunder of its valuable school lands. In 1858 Chicago expended $62,000 on its system of public instruction.

It was a great, good Providence that left the new public-school system of Illinois, at the breaking out of the civil war, buttressed by the services, in commanding positions, of three men of such admirable quality as Newton Bateman, State superintendent of public instruction; William H. Wells, superintendent of the common schools of Chicago; and Richard Edwards, principal of the State Normal University at Bloomington.

The biennial report of Superintendent Bateman, in 1860, was one of the ablest up to that time presented to any Western legislature, ranking with those of Horace Mann and Henry Barnard in grasp of the subject, completeness of its statistics, and the discussion of the methods of pushing the great reform in the common schools, to whose appreciation the State had finally come; a late but no less a powerful and enthusiastic advocate. With a wise diagnosis of the public opinion of the State, the superintendent set himself at once to correct a mistaken idea of the school system and laws that so impeded the progress of the good cause, and succeeded to the extent that he soon reduced the complainants to the minority composed of the inevitable professional critics and chronic grumblers that "we always have with us." With a keen sense of the defects of the new school law, especially ts complicated and cumbrous method of administration, Superintendent Bateman advised against radical attempts to change it in the face of the rising agitation of the public mind on the salvation of the Union. His entire analysis of the methods of primary instruction was one of the first, and remains one of the best, presentations addressed to an American legislature in advocacy of the new education. He urged the important matters of improved school administration and the State Normal University with great zeal, earnestness, and discretion. Dr. Bateman held the office of State superintendent of instruction during the civil war, and afterwards served in a variety of important offices, including the presidency of Knox College and the State Normal University.

Superintendent Bateman was a native of the State of New Jersey and, like so many of the most celebrated public characters of the country, rose to his distinguished position as one of the leaders of the new education in the Western States through years of effort and sacrifices almost incredible. He was taken to Illinois as a child of 10 years, and, like Horace Mann, at 16 had only the rudiments of a very common education. But by persistent effort at self-help he pushed his way through Illinois College at Jacksonville and Lane Theological Seminary, Ohio, where he obtained great help and encouragement from its president, Dr. Lyman Beecher. For a time engaged in the very useful and educating pursuit of a traveling agent, he began his career as teacher at St. Louis in a public school in 1845. From this he rose in rapid succession to the positions of professor of mathematics in St. Charles College, Missouri; the head of the free public school of Jacksonville, Ill., including the office of principal of the high school, in which he fitted more than a hundred students for college. In 1858 he became principal of the Jacksonville Female Academy and served four years as city superintendent of schools. In 1854 he was one of the founders of the Illinois State Teachers' Association and became a very popular editor of the Illinois Teacher and State Educational Agent, in the service of the association. In 1859 he was chosen as State superintendent of public instruction and served with distinguished ability and success through the dark days of the civil war.

It is impossible to realize the value of such a man in these difficult posts of educational administration at a crisis in the common-school affairs so perilous as

when the great sacrifices of patriotic obligation were naturally made the excuse for the neglect of that education of the whole people on which is founded the entire development of good citizenship. Dr. Bateman appears again in the State of Illinois and the Northwest during the important educational movement of the past thirty years. Three years previous to his election to the office of State superintendent of public instruction the city of Chicago had also gained a prize in the call of Mr. William H. Wells, of Connecticut, to the office of city superintendent of common schools. For twenty years, 1834 to 1854, the common schools of Chicago had been making their way upward against all the obstacles which beset an institution outside the domain of the few materialistic interests which dominate the beginnings of a great American town. Once, in 1838, the almost fatal blow of the plunder of the school lands of the city, by which a property in 1860 worth $12,000,000 was disposed of for $38,000, threatened the destruction of the infant enterprise. Indeed, until the city superintendency was first established, in 1854, the schools were involved in all the diseases that threaten the life of any young institution without a head. In 1856 Mr. Wells was called from the principalship of the State Normal School at Westfield, Mass., to this most important and laborious position.

William Henry Wells was a native of Connecticut, born in 1812, the son of a plain farmer, and, like so many New England boys of that day, earned his education by the sweat of his brow as well as the sweat of the brain. After a disappointment in his projected occupation, his genius for instruction was developed in the country district school of the period, as a teacher in secondary schools in Hartford, Conn., and in the private normal school of Dr. S. R. Hall, at Andover, Mass., where he remained eleven years; at Phillips Academy, Andover, and in the Putnam free school, of Newburyport, Mass., where he laid the foundations of his future eminence. As an institute conductor and worker in teachers' associations and serving as president of the Massachusetts Teachers' Association, he became widely known. In 1854 he was called to the principalship of the State Normal School, at Westfield, Mass., and for two years served with great success in this seminary, afterwards celebrated by the long mastership of Dr. John W. Dickinson, for seventeen years secretary of the Massachusetts State board of education. He went to Chicago at a critical period in the educational affairs of that growing city. His first work was the building up of the free high school and rearranging the primary department of instruction. His constructive ability and activity, reenforced by his long experience in all varieties of instruction, made his administration all that could be desired for the permanent planting of the schools of a great Western American city. He was also known as the author of an English grammar, which had a circulation of 300,000 copies. The breaking out of the civil war found him at this most important point and the rudder of the school ship was in safe hands through these tempestuous years.

The State was no less indebted to the two remarkable men who founded the Normal University at Bloomington and presided over its beginnings from 1858 until the close of the war period—President C. E. Hovey and Richard Edwards.

Charles Edward Hovey was born in Vermont in 1827, of one of the class of New England farmers of half a century ago from whom went forth a host of men and women second to none in the country in ability, worth, and distinguished services during the period of which we now write. At the age of 25 he graduated from Dartmouth College, having taught district schools at vacation to "keep the pot boiling," and after his graduation he became principal of the free high school at Framingham, Mass. In 1854 he removed to Peoria, Ill., where he became, first, principal, and, afterwards, superintendent of the new free schools of that city. He wisely took along a "helpmeet for him" in the person of Miss Harriet F. Spofford, of Andover, Mass., a lady whose excellent family descent was reenforced by an enviable reputation made, on her own account, as assistant teacher in Peoria.

As the wife of Mr. Hovey, after a long and successful career as teacher, this lady finally became the chief among the group of excellent and accomplished women gathered around Hon. John Eaton, through the organization and development of the United States Bureau of Education at Washington, D. C. Mrs. Hovey still (1900) occupies a most responsible position under the United States Commissioner of Education.

In his new post, at Peoria, Superintendent Hovey at once came to the front among the group of hard workers and hard fighters for the children. His influence was felt, not only in placing the schools of the city on a firm foundation, but at the statehouse, in advocacy of the series of measures that culminated in the revised school system of 1856. He became widely known as a popular lecturer on education; the president of the Illinois State Teachers' Association; the successful manager of the Illinois Teachers' Journal, and an influential advocate of the establishment of the State Normal University. In 1857 he was appointed to visit the normal schools of the East. In October of the same year, with one assistant and a handful of pupils, he laid the foundation of one of the most successful of this type of institutions in the country. The city of Peoria failed in its effort to bring the State Normal University to itself, but contributed its able and devoted principal to the general welfare. Under the vigorous administration of President Hovey, the State Normal University, in 1858, found itself in possession of the most conspicuous normal-school building then in the Union, erected at a cost of $150,000, combining the arrangements for a State university and normal seminary of the first class. The first report of the new president was a document of unusual ability, both in its pedagogic and administrative suggestions. His career as educator was interrupted by the call of patriotism. He organized a regiment from the students and teachers of the university, and served with distinction in the Union Army, till disabled by wounds for further service in the war.

But his place at Bloomington was at once taken by an educator whose services have been conspicuous during the entire generation subsequent to the civil war. Mr. Richard Edwards was born in Massachusetts in 1822. At the age of 10 he was taken by his father, a mechanic in humble circumstances, to northern Ohio, where, until the age of 21, he worked as farmer and house carpenter, with only the education of the common school of the period. At 21 he became a country district school-teacher at $11 a month and "board round." Hearing of the Massachusetts normal schools, he made his way to that State, and by the aid of Rev. Samuel J. May and President Nicholas Tillinghast, then at the head of the Lexington and Bridgewater normal schools, he entered the latter, where he attended to his studies, with schoolmastering during vacations. A year at the Rensselaer Polytechnic Institute, at Troy, N. Y., and a term of service as civil engineer in Boston were followed by his appointment as assistant in the State Normal School at Bridgewater, Mass., where he spent five years of arduous labor through the declining health of President Tillinghast. In 1854 he was appointed to the presidency of the new State Normal School for Girls at Salem, Mass., and in 1857 was invited to St. Louis, Mo., to take in charge the new City Training School for Teachers. Leaving this position, in 1861 he accepted an invitation to the place made vacant by President Hovey, and remained in Bloomington at the head of the State University of Illinois during the civil war. He became president of the State Teachers' Association; was everywhere welcomed as a lecturer on education; edited the Illinois Teacher, and was the author of a series of school books. In 1863 he received an honorary degree from Harvard College. By the loss of the State University fund of Illinois, the normal seminary at first was dedicated as a State university. But the reception of the agricultural and mechanical land fund from Congress in 1862 enabled the Commonwealth to establish the important State University at Champaign. The subsequent history of Dr. Edwards and the

Normal University of Illinois was prolonged until the later period of the great revival of public education that followed the auspicious close of the civil war.

Only the limitation of space thrown around an essay of the present character prevents the further commemoration of others of the faithful leaders of education, men and women, who, during the period now under consideration, 1830–1865, bravely fought the battle against the indifference and open hostility of opponents and lifted it through every grade to the conspicuous place it occupied at the close of this period. The State of Illinois owes much to the labors of its teachers and educators in the creation of the powerful and intelligent educational public that achieved the remarkable results for universal education through the memorable decade from 1850 to 1860.

MICHIGAN.

The movement known as the great revival of the American common school originated in New England early in the decade 1830–1840, and was especially influential in this northeastern group of common-school States, under the remarkable leadership of Horace Mann, Henry Barnard, and others only less celebrated as educators and publicists. Outside of New England its more immediate results were felt at first in the western portion of New York, largely settled from New England and dominated by the common-school sentiment of the old Northeast. Moving westward on the lines of latitude which have indicated the dominating influence of the New England occupation and ideas, it became a powerful agency in the somewhat tardy development of the American system of universal education in the then original States of the Northwest—Ohio, Indiana, and Illinois. But in all these new Commonwealths the reform was greatly hindered by their mixture of population; especially the great number of people who occupied their southern counties, coming from States where the common school did not then exist, and the great educational revival was to be postponed for another generation. The history of these States, with that of the central Commonwealths—Pennsylvania, Maryland, New Jersey, and Delaware—has already shown the influence of these elements of reaction in the very gradual way by which their present systems of public instruction were wrought out.

But it was the great good fortune of one State of the Northwest—Michigan—that its birthday fell upon the year ever memorable for the establishment of the Massachusetts board of education and the appointment of Horace Mann as its secretary. The Territory of Michigan, unlike all the vast area of the Northwest east of the Mississippi, since the States of Ohio, Indiana, and Illinois, dates from 1805. Its development was retarded by the almost inaccessible character of the far-off country, and the original settlement by a peculiar people from the Canadian French element, and by an almost constant warfare with the Indian tribes, until the close of the war of 1812–1814. In 1817, when Lewis Cass was appointed governor, the Territory had but 6,000 people, and Detroit was only a village.

Indeed, it was not until the opening of the New York and Erie Canal, in 1826, and the subsequent establishment of steam navigation between Buffalo and Detroit, that the great wave of immigration from the old East, which had already made New York west of Utica a new New England and given a definite character to northern Ohio, surged in. It was only in 1825 that the State was divided into townships. By 1830 Michigan had a population of 32,000, and in 1837 of 212,000, scattered over a territory of 58,915 square miles, largely a wilderness of heavily timbered and swamp lands, its wonderful mineral region still in hiding along the shores of its great northern lakes. At the admission of the State to the Union, at this date, Detroit had 8,000 people and there were half a dozen growing towns, like Ann Arbor, Marshall, Monroe, and Ypsilanti, while it was still believed that

the large area in the southern center of the State was an everglade, practically uninhabitable and only to be developed at such a cost of health and life as made the settlement of this, one of the great Commonwealths of the West, relatively more destructive to human life than the subsequent toll of the civil war.

The cause of universal education in the American sense had nothing to expect from the original French settlers of the southeastern margin of the State. Good Father Richard and his faithful Catholic colaborers did their duty as they saw it. But they could not persuade the Territory to permanently endow or subsidize their little parochial schools. By 1817 the official class, as heretofore described, made a movement to establish what was practically a Territorial board of education, an arrangement which, under the name of "university," proposed to take cognizance of all public schools. This scheme, which, probably suggested by the previous similar attempts of the States of New York and Georgia, placed the entire administration of public education in the hands of a great university board, came to little save the establishment of a few schools, although it boldly demanded an assessment of 15 per cent of the public tax list for its support. Its unpronounceable name, "Catholepistemiad," and the classic nomenclature of the departments of its imaginary university suggest the previous emptying of an old-time classical dictionary over the interminable area of woods and swamps of the wild Northwest. Notwithstanding three sections of land were granted to "The College of Detroit," with subsequent sections of public-school lands, little was accomplished. A second attempt was made to establish a "university," with John Biddle, governor, and twenty assistant trustees. But this was little more than a corporation on paper, advertised to do all possible things in behalf of the education of the children. Its operations were largely directed to the management of the school lands of the Territory.

It was ten years from this original movement before the foremost people of the Territory realized that not a "university" but a system of common or primary schools had been all the time the radical need of the coming generation. In 1827 the first common-school act was passed. This was almost verbally a copy of the original colonial statute of Massachusetts enacted in 1647, and provided for the primary schooling of the children by local taxation, and for the secondary education under the title of grammar schools, which would teach the Latin, French, and English languages. The original New England penalty was held over all disobedient communities. This law was supplemented by the action of Congress in 1828, requiring the governor and council of the Territory to take the school lands in charge and secure them, if possible, from the waste that had so largely crippled the educational movement in Ohio, Indiana, and Illinois. But the subsequent repeal of the laws of 1827–28 and the passage of the new act for a general superintendency of schools seemed to have had but small result until the constitutional convention of 1835 took up the matter in earnest. The constitution contains the following ordinance:

Ordinance adopted by the convention which framed the constitution of Michigan in 1835.

Be it ordained by the convention assembled to form a constitution for the State of Michigan, in behalf and by authority of the people of said State, that the following propositions be submitted to the Congress of the United States, which, if assented to by that body, shall be obligatory on this State:

First. Section numbered sixteen in every surveyed township of the public lands, and where such section has been sold or otherwise disposed of, other lands equivalent thereto, and as contiguous as may be, shall be granted to the State for the use of schools.

Second. The seventy-two sections of land set apart and reserved for the use and support of a university, by an act of Congress approved on the 20th day of May, 1826, entitled "An act concerning a seminary of learning in the Territory of Michigan," shall, together with such further quantities as may be agreed upon by Con-

gress, be conveyed to the State, and shall be appropriated solely to the use and support of such university, in such manner as the legislature may prescribe.

The cause of education was secured by the following provision in the constitution of Michigan, January 26, 1837:

ARTICLE X.—EDUCATION.

SEC. 1. The governor shall nominate and, by and with the advice and consent of the legislature in joint vote, shall appoint a superintendent of public instruction, who shall hold his office for two years and whose duties shall be prescribed by law.

SEC. 2. The legislature shall encourage by all suitable means the promotion of intellectual, scientifical, and agricultural improvement. The proceeds of all lands that have been or hereafter may be granted by the United States to this State for the support of schools, which shall hereafter be sold or disposed of, shall be and remain a perpetual fund, the interest of which, together with the rents of all such unsold lands, shall be inviolably appropriated to the support of schools throughout the State.

SEC. 3. The legislature shall provide for a system of common schools, by which a school shall be kept up and supported in each school district at least three months in every year; and any school district neglecting to keep up and support such school may be deprived of its equal proportion of the interest of the public fund.

SEC. 4. As soon as the circumstances of the State will permit, the legislature shall provide for the establishment of libraries, one at least in each township; and the money which shall be paid by persons as an equivalent for exemption from military duty, and the clear proceeds of all fines assessed in the several counties for any breach of the penal laws, shall be exclusively applied to the support of said libraries.

SEC. 5. The legislature shall take measures for the protection, improvement, or other disposition of such lands as have been, or may hereafter be, reserved or granted by the United States to this State for the support of a university, and the funds accruing from the rents or sale of such lands, or from any other source, for the purpose aforesaid, shall be and remain a permanent fund for the support of said university, with such branches as the public convenience may hereafter demand, for the promotion of literature, the arts and sciences, and as may be authorized by the terms of such grant. And it shall be the duty of the legislature, as soon as may be, to provide effectual means for the improvement and permanent security of the funds of said university.

The interesting story has already been told of Isaac Crary, who, as chairman of the committee on education in the constitutional convention, was largely responsible for the framing of this provision. Also of the previous efforts of Rev. John D. Pierce, who, from the year 1831, when he appeared in the Territory of Michigan as an agent of the Home Missionary Society, had been an indefatigable advocate of the educational system by which he was schooled in New Hampshire, Massachusetts, Rhode Island, and New York. It was only a logical necessity that led the people of the new State to demand the appointment of this great friend of the children as the first State superintendent of common schools of Michigan, and his retention in this important position during the subsequent five years, till 1842.

It is perhaps a pardonable pride in these leaders of the educational movement at the beginning of the Commonwealth of Michigan which leads their local historians to disown their indebtedness to the older common-school system of the East and claim that here was set up an independent scheme of popular instruction, based on the Prussian system; or that Dr. Pierce was the first man in the country to hold the office of State superintendent of education. It is true that Crary and his friend Pierce, like all the prominent educators of that day, were greatly interested in the accounts of the Prussian system of education, then recently given to the country by the translation of M. Victor Cousin's report and the later accounts of several Americans, especially Dr. Calvin Stowe's to the legislature of the neighboring State of Ohio. But there was nothing in the system recommended by Superintendent Pierce and adopted in the main for the first legislature of the State that distinguished it from the American system as developed through the previous two hundred years.

Indeed, the government of Lewis Cass, a native of New Hampshire, seems to have inaugurated the first movement for popular, as distinguished from private and classical, education in the Territory. The university schemes of 1817 and 1821 were evidently suggested by the earlier provisions of New York for a "board of regents for the university," and of Georgia for a general system of public instruction, under the name of the "University of Georgia," both of which antedated the movement in Michigan by a full generation. Both Crary and Pierce were natives of New England and graduates of Eastern colleges. The more influential class of the people of Michigan in 1835 was from the New England States, originally, and later from the same people broadened and trained by their experience in settling western New York and northern Ohio. When required to prepare a complete plan for the education of the people of the new State of Michigan, Superintendent Pierce consulted Governors Marcy, of New York, Everett, of Massachusetts, and many others of the leading public and school men of the East. His ideas of the university could all be derived from Harvard and the "University of Virginia," which may be called the mother of all the State universities established after the year 1820.

As early as 1812 New York had established the office of State superintendent of education, and afterwards practically continued it in—for that State—a most efficient way, by combining its duties with those of secretary of state; an office at the time in New York of commanding importance and held in succession by a series of the foremost statesmen of the Empire State. The State of Ohio had called Samuel Lewis to the same position at an earlier period than the admission of Michigan to the Union. It was true that Dr. Pierce and some of his immediate successors seemed to have cherished an idea of their position as somehow equivalent to that of the Prussian minister of education. The experiment was tried in the appointment of Pierce to place the entire educational affairs of the Commonwealth, even the denominational and private schools, under his control. But the good sense of the people of Michigan soon rejected the notion of a European continental minister of education presiding over the entire school affairs of a new American State, on a salary of $500 a year.

It was natural and fit that on the first real venture at a general system of public instruction, the people of Michigan should turn to the two men whom all recognized as educational leaders. But the experience of the ensuing fifteen years revealed the impossibility of attempting to blend the educational methods of the Prussia of half a century ago, with the imperious necessities of a new western American Commonwealth. The appointment of a State superintendent of public instruction was taken from the governor and senate and the office filled by popular election for two years by the revised constitution of 1850. Before that year the State university was placed in charge of a board of regents, first appointed and afterwards elected. The normal school and the agricultural college were put in charge of the State board of education, of which the State superintendent was only a member. The superintendent of schools in Michigan at present is in no way a different functionary from his colaborer in other States, and no American Commonwealth is now farther removed from the concentrated educational method of the European centralized governments than Michigan.

Every State superintendent of education in Michigan until the year 1878 was a native-born and educated son of New England or of New York; till then the most prominent centers of common school life. The first president of the university was a distinguished educator born in New York, and both his successors, Presidents Haven and Angell, were prominent in the East before they were called to the head of the university.

The real educational advantage of Michigan was that at the inauguration of the great revival of the common school in New England and New York, in 1830–1840, her leading educators and the influential majority of her people were in such close

educational sympathy with the leaders of the great reform in the Northeast that here, even beyond the older States, was found a soil where the ideas of Mann and Barnard and their great contemporaries could be planted as in a fertile seed field and grow without conflict or serious hindrance. With the exception of the usual mistakes in the attempt at the popular administration of education, a loss of university funds from the coming on of a financial panic and the consequent fluctuation in property values, the long-drawn-out quarrel over the recognition of the homeopathic college of medicine as a subject of State support, and the unfortunate treatment of the first university president, Dr. Henry Tappan, no American State has gone on, from first to last, with so little friction to such a recognized educational superiority. And all this not because the educational system of Michigan ever was or is now the reproduction of the Prussian, but one of the most complete developments of the American system, as developed through the practical experience of more than two centuries, and modified and amended by the incorporation of every valuable idea and method from everywhere that could be conformed to the American ideal of society and government.

One important change concerning the administration of school lands was incorporated in the ordinance of 1835. The States of Ohio, Indiana, and Illinois had adopted the practice of leaving to each township the management of the sixteenth section of school lands received from the National Government. The result was a prodigious waste of the children's patrimony. The State of Ohio never received the advantages anticipated from this munificent bequest. By using all this accumulation of gifts for common and university schools as one great fund, administered by the whole people for the common good, the State of Michigan originated a most valuable new departure at an early period, which has been of inestimable value to the States adopting it. Although there was a great decline in the value of these lands soon after the admission of the State to the Union, involving sacrifices which reduced the estimated endowment of the university a full half, yet within fifteen years of this period the State possessed a school fund of $1,000,000, which has been largely increased as the years have gone on.

As far as the question of the elementary common schooling was concerned, the plan submitted by Superintendent Pierce was adopted. It provided for a system of public instruction in districts, with proper officials for the management of the schools; for the sale of school lands by the State superintendent and their proper investment in a permanent fund, the income to be distributed among the districts on the basis of the school population, with other moneys from the appropriation of the amounts of fees, fines for breaches of the peace, and military exemptions; the power of voting a small annual sum for a school library; the establishment of a board of school inspectors; the State funds to be distributed for the schooling of all children between the ages of 5 and 17. A tax was levied in every district for instruction, building, fuel, etc., the local contribution to be equal to the amount received by the State. The school law was drawn with great elaboration, and could it have been thoroughly enforced would have founded a system of district elementary schools, free during three months in the year and afterwards supported by a rate bill, adequate to the early necessities of the new Commonwealth. At the close of the administration of Superintendent Pierce the State had a population of 210,000, a school population from 5 to 18 of 65,000, although the State authorities assert that "not half the school-attending children are in the habit of attending regularly, summer or winter." The schools were in operation, on an average, four and one-half months in the year.

The plan suggested by the superintendent for the organization of the secondary education was a system of academical branches of the university. Any county of adequate size could have a "branch" on condition of its furnishing suitable school buildings and the appointment by the county supervisors of an official board of six members, who, with one appointed by the State superintendent, should con-

stitute the academical board. Of this board four were to be selected from the officials of the county. This board could appoint teachers and generally manage the school. A committee of three visitors, two appointed by the State superintendent and one by the supervisors, was empowered to inspect the school and report its condition to the State authorities. The county was required to raise a sum equal to the appropriation from the university fund. This "branch," in the imagination of its founders a reproduction of the German gymnasium of half a century ago, was to be organized in three departments—a teachers' course of three years and an English and a classical department. Only the teachers' course was free, and that on condition of every graduate teaching four years. In the English department tuition was to be $10, and in the classical $12. A State appropriation of $500 for schoolbooks and apparatus was provided.

The university, which was to be the crown of the entire system, was to be governed by a large board of regents, consisting of the governor, lieutenant-governor, chief and associate justices, chancellor of the State and university, and twelve additional members appointed for four years by the legislature. There were to be three departments—(1) literature, (2) law, and (3) medicine. The faculty should consist of 15 professors of the first, 5 of the second, and 6 of the third department—26 in all. While the instruction and government of the departments was to be committed to the faculties thereof, the regents were to be the final authority in regulating the course of instruction and providing books and materials. A board of five visitors was to be appointed by the State superintendent. In his enthusiasm at the attempt to set up a German university in a new State of 200,000 people the good superintendent beholds the day in vision when "the institution would be an anomaly in the history of learning, a university of the first order, open to all, the instruction free." He estimated that the university fund would supply $50,000 a year—$25,000 for the support of the "branches" and $25,000 for the central college. The importance of a department of medicine and law was urged.

In the treatment of the most delicate topic connected with the university—the religious question—the superintendent takes the broad American ground of absolute independence from all entangling alliance by the state with ecclesiastical affairs; there should be no religious test for students or teachers; but he was compelled somewhat to placate the different religious sects, which at the opening of the great West were so powerful an element of opposition to the support of an unsectarian university by the State. He proposed to meet this condition by the appointment of a professorship of worship, which should represent the Christian religion in its general unsectarian aspect, the occupant of the chair to deliver lectures and conduct a course of instruction on the broad ground of religion and morality on which all denominations might consent to work in unison. He cited the example of the new university of the city of New York, which supported a professorship of this sort. The scheme was the opinion of a wise and good, in his way a great, man; and through the storm and stress of half a century the University of Michigan has probably justified the prophecy as far as is possible under the present conditions of human nature in a State ruled by a citizenship so varied and sensitive. The State of Michigan may boast that no community on earth has more completely shown that the people can be safely intrusted with the administration of the higher education in a scheme so broad that it includes the training of every competent person of either sex in a great institution, secure from all the restraints on personal liberty that have been hitherto supposed to be essential in every age and land. In this connection the superintendent gives a warning concerning the endowment of private institutions by the State with the university powers. He clearly anticipated the rush upon the legislature for college charters, which has since filled the land beyond the Hudson River with a multitude of institutions bearing the loftiest educational names, conferring the most distinguished

degrees with a free hand, and at intervals claiming a subsidy from the State, although relieved from all dependence on public authority for their administration.

In his interpretation of the powers of the State superintendent of instruction, the new official positively asserted himself as a minister of education of the European type—the executive head of all departments of school life and the court of final appeal on all questions arising out of the school system. The latter power, as far as concerned the decision of cases arising under the school laws, was reserved by the legislature in the general arrangement of the scheme.

But in the first law passed by the legislature under the general system the State University was organized under a board of regents and visitors and provision made at the earliest opportunity to place the institution in fit buildings. By placing the administration of the university in the hands of a board of regents, the first inroad was made upon the undefined powers of the State superintendent of instruction. The branches were at once to be established, each with a department of pedagogy and of agriculture in addition to English and classical learning, but with no power to confer degrees. A superior school for girls was to become a sort of annex to each of the branches as soon as the funds for its establishment could be secured. The site of the central university was to be an estate of 40 acres in the then village of Ann Arbor, which was expected to furnish the ground free of cost. At a subsequent meeting of the legislature the regents were empowered to elect a chancellor of the university, also the president of the board, and arrange for the appointment of professors and the system of instruction.

With this splendid publication of good intention, the new Commonwealth of Michigan embarked on the broad sea of Western American educational life, under a leader, perhaps, in all practical ways, not inferior to any in the group of eminent educators which has served any State in this capacity. But the voyage was not all to be smooth sailing. At once came up the difficult question of the chartering of private and denominational colleges and seminaries with university powers. The new "College of Michigan" was the first applicant. Here the superintendent wisely consulted the most distinguished authorities in American college life, and from Dr. Francis Wayland, Governor Edward Everett, and numerous others received various replies to his questions. His own conclusion was announced to the applicants after the following style: That he was invested by the legislature and the constitution with a sort of indefinite power to require that the institution should report to the State superintendent; make no sectarian religious distinctions in its administration; report, if required, its financial condition to the legislature; and that the private property of the trustees should be liable for all debts beyond the ability of the corporation to liquidate.

The university fund was then supposed to be $1,000,000, with an annual income of $70,000. But it was evident that even this was quite insufficient to support a scheme so extended as the central institution and its branches. To meet the emergency a State loan of $150,000 was voted. The school lands altogether amounted to 1,148,000 acres. Already some 34,000 acres had been disposed of at the rate of $12 per acre, amounting to a fund of $411,000, with an income of $28,825. The superintendent found himself with $57,651 on hand as the entire sum for launching the new system of public education.

In 1838, 245 townships reported 1,020 school districts with 34,000 children and youth of school age. The regents of the university decided to commence operations by the establishment of eight branches in as many local centers, and appropriated $8,000 for the support of the teachers in the five actually set up. Only 161 students were enrolled in all; 10 in the normal department. It was estimated that by 1842 40 students would be prepared to enter the university. The girls were still kept waiting outside, and, beyond the elementary schooling, had yet neither part nor lot in the new system of education. Mr. Asa Gray, afterwards

the celebrated American botanist, was the first to receive the title of professor in the new university, and was sent to Europe to purchase a library. During the year 1837 $7,800 had been expended in the branches, with an estimate of $10,000 for instruction and $35,000 for buildings in the central university. The interest of the university fund was $9,171. The legislature persisted in its demands that every private and denominational seminary should make a full report to the State authorities of its financial and other affairs, a notion that did not commend itself to the good people of Michigan, as these schools did not generally comply.

In 1839 the districts were authorized to continue the sessions of the schools by the passage of a rate bill paid by the parents of the children attending. Four buildings had been erected on the university grounds and a new professor appointed; but the lack of funds was severely felt. A committee appointed by the legislature reported on the danger of leaving the university exposed to the fluctuating minds of that body, and asked that its affairs be administered independently by its own board. It declared the present scheme of a central university and a group of branches as fitting schools too extended; but nothing came of the report, which divided the body to which it was made. In 1840 the Catholic parochial schools of the city of Detroit applied for legislative aid, and a majority of the committee on education recommended it; but no action was taken on the appropriation. Every new legislature took a turn at the school law, changing it in many matters of detail.

In a later report, 1841, the State superintendent refers to the reverses in all financial and industrial matters during the past three years: "We commenced our career when the whole country was in the midst of the wildest scene of speculation, and we have seen it sink in three short years to the lowest state of depression; but the people are coming up bravely to the rescue, and the land is dotted with log schoolhouses." As the result of the last five years' experiment he declares that "No system in the Union, with the exception of that of Massachusetts, is now more complete in its organization or perfect in its parts." From 1836, with a record of 39 townships, 55 school districts, and 2,337 schools, the year 1840 showed the remarkable gain of 324 townships, 1,596 districts, and 49,859 persons of school age. The regents of the university had met the complaint of the churches, that the university was not to be founded on a religious basis, by appointing clergymen to the principalships of five of the seven branches. In two of these, schools for teaching girls, in English only, had been established. The central building of the university was going up, and important collections of many sorts were being put in, among which were 3,700 volumes purchased abroad by Professor Gray.

The financial affairs of the university were assuming a serious aspect, the depression of the hard times nearly preventing the sale of the school lands. It was deemed of the utmost importance that the university should be organized and put in operation within a year. But the prospects were not flattering—$41,852 had already been expended on the central department and $10,000 on its branches. The regents asserted that the responsibility for the management of the university should be concentrated on themselves, and the legislature and State superintendent of instruction should be excluded from interference. A legislative report strongly recommended that the State superintendent should be relieved from his financial cares and his duties be confined to the oversight of the public schools, but no action resulted. It was evident that the European idea of a State minister of education, with large and almost despotic powers, was not acceptable to the people of Michigan.

The retirement of Superintendent Pierce from the responsible and confusing duties of first State superintendent of education in Michigan was by no means a loss to the State of the services of this consecrated apostle of universal education.

The most common defect of our American educators in exalted and difficult positions of school administration has not been the lack of good learning, a serious interest in good education, high character, and a fair amount of administrative ability. It has rather been that peculiar aloofness from the common American life which often makes the man or woman of excellent culture, worth, and capacity as one apart from the majority of intelligent and efficient people who are the actual force of every good American community. Especially is this defect a great hindrance to success in a new State, and far more than now in States in the condition of the original five Northern communities half a century ago. We can recall many a man or woman who has "gone West" at the enthusiastic call of responsible educational authorities from a position in the East, when the teacher was not only fortified in the confidence of the community, but had been known to the progressive educators of the Union with perhaps favorable notice from abroad. But in the rapid way in which all things move in a prosperous new country the fatal lack of this element of genial sympathy with our common human nature and a reliable understanding of the conditions and environments of the average school boy and girl soon become apparent.

If the new official had the openness of mind and heart to appreciate his own defect, and, while adhering to his own best views and upholding the broadest and highest idea of education, showed himself the sympathetic friend of the children, teachers, and parents who were his constituency, he probably became one of the most valuable leaders of a growing civilization. But if afflicted with undue personal pride of opinion, or the still more obstinate malady of a chronic consciousness of superiority founded on a fellowship with the cultivated class at home, his influence was soon at an end. Hundreds of excellent men and women during the early development of the educational life of the new Northwest went forth from the older East with joy, and returned exhausted, humiliated, and disgusted at the "lack of appreciation" by the communities they served, whereas the real cause of failure was often the educator himself, who did not and could not really know the people he came to instruct.

In this respect Dr. Pierce was, indeed, a providential man for a critical period in the life of a great Commonwealth. He was born in humble station, in New Hampshire, and worked on a farm till the age of 20, in Worcester, Mass, with eight weeks' schooling a year. At 20 he was fitted for college, like Horace Mann, by a good private teacher. With $100 saved from the scanty wages of a farm hand and a district schoolmaster, he entered Brown University, Rhode Island, and graduated at 25 in the first grade of his class. A year's study of theology at Princeton, another year as the principal of an academy in Massachusetts, and a few years' pastorate in the most interesting center of the new New England, Oneida County, N. Y., constituted the university in which he was trained for the great service awaiting him beyond the lakes. In 1831 he was sent West, with a roving commission, as a missionary through Illinois and Michigan, to preach the gospel to all people. He went forth gladly, and labored with a zeal and devotion that, through the early death of his beloved and accomplished wife, was lifted to a life long consecration to what may well be called in all the significance of the title, "a ministry of education," which for half a century wrought like a beneficent providence in his adopted State.

It was not his study of the Prussian school system, but his broad and powerful training in the great university of the new American life, that revealed this young man as the providential leader of the new Commonwealth of Michigan to the high place in popular education it now occupies. His service in connection with his friend, Isaac Crary, in placing in the fundamental law of the State the first provision for the general education of the people was the prelude to his appointment to the position of first superintendent of schools of the State. No man

better than himself could realize the difficulties and almost hopeless hindrances to success in that territory of undeveloped resources, vigorous capacities, and untried populations of various class and nationality. The lack of abundant funds to carry out his broad idea of university education appeared in the financial arrangement that reduced the school fund one-half and everywhere stood in the way of public interest in the schools. His own idea of a "minister of education" of the Prussian type was rudely shaken by the very sensible conclusion of the legislature that a State superintendent of education should be relieved of all responsibility for handling the school funds. The board of regents of the university, established by his own suggestion, resented his own connection with the administration of that institution. And the legislature complained that the people had no reliable statistical information of the actual condition of the schools.

But, whatever ground there may have been for these criticisms, Superintendent Pierce was not the man to "sulk in his tent," or withhold himself from active participation in the great work of organizing the educational system of the State. From the time of his retirement from the superintendency, in 1842, at the age of 45, for nearly half a century he was educationally the foremost citizen of the State. He always clung to the work of the Christian ministry—as practiced at that time, by such a man, one of the most valuable schools of practical educational and religious activity. But he continually reappears in the educational field. In 1847 he was sent to the legislature, and in 1850 was a member of the constitutional convention, and in both these positions was influential in the improvement of school affairs. At this crisis the people finally rejected the last vestige of European policy in taking to themselves the election of State superintendent of education and limiting his duties to the direct supervision of the common schools, with indirect relation to the normal and public charitable systems. The supervision of the university was taken from the control of the legislature by placing the selection of the board of regents in the hands of the people through popular election. In this connection, largely by his efforts, the system, after a preliminary experience of rate bills, was declared free at the end of five years. In 1852 he had the satisfaction of delivering the address at the opening of the State Normal School at Ypsilanti, a foundation that had from the first been dear to his heart. He also served as county superintendent, and was a constant visitor at educational assemblies to the later years of his life. One of our own pleasant recollections among the schools of the West is of the meeting with this venerable educational father of a generation at the commencement exercises of the normal school at Ypsilanti, probably one of his last official appearances. It is the remark of so many of our successful American educators that nowhere in the world is found so complete an appreciation of the higher type of ability and devotion to duty as in the great new western America, beyond the Alleghenies, into which Dr. Pierce and such as he went forth in the day of small things, toiled and suffered, and "looked not back from the plow," until "the wilderness and the solitary place were glad and the desert blossomed as the rose."

The years between the organization of the State government, 1835–1837, and the formation of the revised constitution of Michigan, in 1850, were emphatically a period of educational experiment, in which success was all the time shadowed by the partial failure of the magnificent ideals and broad theories entertained by the leaders of the new State system. Many of these were destined to be shattered by collision with the hard and homely facts of life in a new Western commonwealth, or at least postponed until the coming of better times. The people were all the time passing through the successive revolutions in financial affairs almost inevitable to the settlement of a new American State, so attractive as to allure a multitude of settlers, too many of whom were neither in a financial nor social condition to face the peculiar difficulties of the situation. The tide of emigration to Michi-

gan, from the opening of the first direct and easy communication from the East and Europe through the completion of the New York and Lake Erie Canal, in 1826, and the establishment of steamboat navigation on the Great Lakes, lifted the sparsely populated border Territory of 6,000 in 1817, in twenty years, to the comparatively populous Western State of 250,000 in 1837. For a brief season the State magnified itself on the summit of a mountain of material prosperity, only to be plunged into a valley of industrial humiliation, from which it slowly and painfully emerged through many years. The statement of Governor Woodbridge's message to the legislature, in 1841, is a graphic picture of this condition:

The resources upon which so much educational expectation was founded seem liable for present purposes in a great measure to fail us. The overthrow of the general currency of the nation, which has produced so much distress, and the continued process by which the little resource available seems rapidly passing out of the State, have already prostrated all uniform standards of value; and the ruinous diminution in the prices of agricultural products have rendered all real estate of little present worth. School lands, therefore, are no longer sought after by purchasers, and hitherto, in times of great pressure and general distress, the legislature has found it difficult to resist applications for relief and delay of payment on the part of those who have heretofore purchased lands. From this source, therefore, little comparatively has been realized, and the sanguine hopes of the friends of education have been thus far disappointed. The same general cause very naturally affects also the present condition and for a time the future of the university.

It is needless to say that in this financial emergency "history repeated itself," and the party which in every civilized state before and since has proposed to throw overboard the public institutions that make for the higher interest of society to lighten the ship of state, tossing amid the high waves of financial panic, came to the front in Michigan. That this most mischievous combination of all the enemies of republican society did not succeed in their effort to abolish the university and fling wide open the worn-out experiment of subsidizing sectarian and irresponsible private seminaries for the secondary and higher education was largely due to the fact that so large a number of able and progressive men in public office were natives of the States that had already demonstrated the supreme advantages of universal education.

The city of Detroit, which had long remained under the influence of the original occupants of the Territory, did suffer. As late as 1842 the city, then as now the chief town of the State, had under the first district school law been entitled to only $9,000 annually, and that had been further reduced by the manner in which the money had been distributed. During the years previous to 1842 there had been practically no common schools in the city, for the securities "of the school funds were almost worthless." At this juncture a revolt of the progressive element obtained a reorganization by which the whole city was consolidated as a single school district, and the city council authorized to levy a tax of $1 for each child between the ages of 5 and 17 for the support of free schools. The school board found "they had everything to create, and that a degree of neglect beyond what they imagined possible had existed from the earliest period in the history of the city in regard to the all-important subject of education." It was found that in the city of 10,000 people, half a century old and with great wealth, where the public authorities had long possessed the absolute right to appropriate funds for public purposes, not a dollar had been appropriated for the purposes of education; that there was but one public schoolhouse in the city, only $400 invested in a school lot, and no furniture except a pile of old desks and benches. A lot of depreciated paper and this schoolhouse and lot "completed all the provisions which the city of Detroit in this enlightened age had furnished for the support of public schools." There were 3,500 children from 5 to 17 years old in the city, and the school tax amounted to $3,500, which, with the State subsidy

of $1,000, gave $4,500 for schools. Within a year 12 public schools were established at an expense of $3,400, containing 1,286 pupils, 107 placed in charge of one teacher. An application was made to the legislature for a law authorizing the city government to vote a tax raising $1,500 a year for the purchase of school lots and the erection of schoolhouses and to borrow $5,000 additional for this purpose. By the subsequent action of the legislature and its refusal to subsidize the Catholic parochial school system of the city, a foundation was laid for the rapid development of what has become one of the most notable metropolitan systems of common-school instruction in the Union.

It was little short of a public providence that the three State superintendents of public instruction which followed Mr. John D. Pierce from 1842 to 1850 were men of unusual capacity and entire devotion to face the difficulties of this critical epoch. They were all from Eastern and common-school States. Mr. Frederick Sawyer, jr., the immediate successor of Dr. Pierce in 1841, was a native of Cambridge, Mass., and a graduate of Harvard College; a lawyer in partnership with Hon. Jacob M. Howard; afterwards a distinguished public character in the history of the State. Mr. Sawyer was a scholar, gifted with a genius for general popularity; the editor and proprietor of a newspaper; a man of public spirit, and the founder of the young men's society, which, like Dr. Benjamin Franklin's famous club in Philadelphia, kept itself in touch with city reforms. His administration of the office of State superintendent of public instruction seems to have marked the first serious attempt to find out what was really on the ground, the quality of the schools and the actual situation of the educational affairs of the State. His admirable reports called attention to all the defects of the public instruction and aroused and directed an excellent, hopeful spirit to keep alive the belief in the value of public education in the State.

The schools were steadily increasing in number; were in session four and four-sevenths months in the year, and included 50,000 pupils. He urged the importance of attention to the foreign-born element of population and the accommodation of its children in the public schools. He pushed the inquiry to every district concerning the details of school-keeping and thereby laid the foundation of a system of accurate statistics and a vital connection of every locality with the central school authorities. The result of his investigations revealed the same deficiencies as have met us everywhere in a system of schools under inefficient supervision, with inadequate teaching force and a half-hearted community, not yet awakened to demand action to make the system efficient. Mr. Sawyer followed the example of Horace Mann, who, at the other end of the Union, was now "stumping" the State of Massachusetts in the interest of the children, and reports the same discouragements that alternately aroused the indignation and excited the grim humor of the great leader of the revival of the common school.

The State university was meanwhile toiling in mid sea, with small hope of safely completing the voyage on which it had been launched, with such exultant anticipations in 1837. The drop in school securities, and the acts of the legislature for the relief of the purchasers of school lands at high prices, had cut down the annual income one-half. The pledge of the State to provide out of this the payment for services already done, left the corporation with the pittance of $1,000 to support a new college of 50 students, and 10 professors, burdened with past expenditure and beset on every side with critics and enemies. Several buildings and some respectable collections had been placed on the ground by the aid of the $100,000 appropriated by the State; but the resources of the university were barely sufficient to pay the interest on that loan. The branches, containing, perhaps, 150 students, though still regarded as essential and, by some, as the main value of the institution, were absorbing a large amount of the available funds. Naturally, the central college had not yet realized the expectation of the

educational public, and for ten years not 300 students had found their way to the half dozen or more schools that figured on paper as "the University of Michigan." But just here it was the great good fortune of the institution that there were on its board of regents men like Henry M. Schoolcraft and others, who insisted, in season and out of season, that the university should be relieved from its dangerous dependence on the whims of a constantly changing legislature, and place it in the hands of its own responsible board. By this change the power held by the State superintendent of schools and the governor, which in an emergency might be exercised for the extinction of the institution, was restricted. But, until the costly experiment of a group of branches was fully abandoned, and the entire authority of administration vested in a board of regents elected by vote of the people, and a president placed at the head of the faculty, there was little but disappointment in the general condition of the institution.

The direction of the common schools of the State during the following seven years, under the administration of Supts. Oliver Cromwell Comstock and Ira Mayhew, are so fully set forth through the interesting record of Supt. F. W. Shearman in 1852, in his volume, Public Institutions and School Laws, and in a subsequent publication, Education in Michigan, by Deputy Supt. W. L. Smith, in 1880, that it will be unnecessary in this record to do more than follow the steady stream of events in its course to the breaking out of the civil war. After twenty-five years, the common-school system of Michigan was then found equipped with all its present agencies save county supervision, in a condition to hold the confidence of the people and challenge the envy of older States, under the administration of Supt. J. M. Gregory, one of the most capable and successful of the remarkable body of public men who during the past fifty years have been called to the educational direction of our Western American civilization. This may be said, that, outside of occasional lapses into indifference and numerous mistakes, the legislature of the State of Michigan during a period of twenty-five years had responded to the growing demand of the most enlightened and determined educational public of any new Commonwealth at that period with commendable promptness.

At the close of his term of service in Michigan, Mr. Sawyer removed to New Orleans, La., where, for several years, he was connected with the new public-school system in that city. He died at his old home in Cambridge, Mass. His brief administration of two years is remembered in Michigan as one of great practical benefit in bringing order and business methods into a department created on a plan too large and independent to fit the conditions then existing. He did what Dr. Barnas Sears accomplished for the schools of Massachusetts after the splendid career of Horace Mann. Superintendent Sawyer seems to have suggested and put on the way to accomplishment in this new Commonwealth, the Massachusetts of the West, the same policy of reform and reconstruction.

His successor, Mr. Oliver Cromwell Comstock, belonged to that noted class of workers in the upper region of American life designated by Washington when he lauded the New England people for their energy and enterprise in "stirring up things," going everywhere and leaving a good report of themselves wherever they went. He was born in Rhode Island in 1781, of an honored family; but his school life was passed in the Empire State, where he graduated in medicine from the University of New York. He began the practice of medicine at Cayuga Bridge, a sort of landmark between the old and the new New York. He soon drifted into law and politics, became a member of the New York legislature, a judge in the courts, and a member of Congress for two years. He entered the Baptist ministry in 1820, at the age of 39, and continued the practice of his three professions, medicine, divinity, and statesmanship, in New York till 1834. He was Chaplain of the National House of Representatives in Washington and spent

two years in the ministry in Virginia on his way "out West," where he officiated as a pastor of a church in Detroit and afterwards in several of the larger towns of the State. He was appointed to the office of State superintendent of public instruction by Governor Barry, in 1843, and served through one term till 1845. In 1849 he again appeared in the State legislature and closed his life of tremendous and versatile activity in 1860, at the age of 79.

One of the most important acts of the Michigan legislature in 1843 was the establishment of the land office, to which was transferred the charge of the entire public estate, including the school lands. This finally limited the duties of the State superintendent of public instruction to the management of the educational forces, leaving the more appropriate work of the direction of the schools with such men as the people, through legislative action, might place at his disposal. A forward step was taken in the new law compelling every township to assess an annual tax of 1 mill on the dollar of its valuation to be appropriated to the district schools to furnish them with improved facilities for obtaining the means to build schoolhouses and meet other necessary incidental expenses; with the additional help of a rate bill to be paid by the parents of children attending school.

An important feature of Superintendent Comstock's work was the publication of the school laws in pamphlet form. The perpetual "tinkering" with this class of statutes was one of the most serious evils threatening the success of the public-school system in the new States.

In 1844 there were 66,700 children and youth between 4 and 18 in the State, of whom 55,590 were reported as in school. The schools were in session four months of the year. But the 55,000 school children were still a "dissolving view," of whose habits of attendance there seems to have been little reliable information. The university was still under a cloud, although men like Lewis Cass appear on the roll of its board of regents. There were 4 professors and 53 students, with 174 young men in the branches. The legislature passed several acts for the relief of the university in its struggle with the constantly decreasing income from the school lands, which were now held at the price of $12 per acre. The regents of the university rejoiced in the relief thus afforded, whereby the institution was saved from being closed and allowed the use of the remaining $30,000 of its bonded debt to the Commonwealth. But apart from this relief the university seems not to have advanced either in the number of its students or the attractions of its opportunities.

In April, 1845, State Superintendent Comstock retired, and his place was taken by Mr. Ira Mayhew. This active and able man was born in New York in 1814, educated in the common schools and academies of his native State, and, at the age of 18, entered upon a long educational career as master of common schools, principal of an academy, and county superintendent of instruction. He came to Michigan in 1843, at the age of 29, and after serving as principal of one of the branches of the university, was appointed State superintendent of public instruction by Governor Barry in 1845, and remained in office through two terms, till 1849. His administration may be fitly designated as "a campaign of education." The State was still engaged in the weary struggle of supporting a group of educational foundations in the university and its branches. The chief duty of the State authorities was apparently to keep the hands of the numerous and zealous denominational and private academies out of the treasury of the Commonwealth. The free high or union graded school was still almost a stranger to the system. The new State superintendent took the field in the primitive fashion, on horseback; visited the people, preaching from town to town the gospel of universal education. He performed an excellent service by a course of lectures before the legislature at the State capitol, which were published at the request of his

hearers, under the title, "Means and Ends of Universal Education." Perhaps in the disordered financial condition of the people a second essay was no less effective for good. This essay became a text-book in the schools; was afterwards revised and republished, and its author established a commercial college in Detroit. He dedicated the first union school in the State, and aided in the organization of the first public school in the upper peninsula.

In 1846 the number of school children had increased to 75,770, with 20,000 between the ages of four and eighteen in no school. After all reasonable deductions there were several thousand children and youths in the State growing up in ignorance. And with the quality of teaching that could be obtained for $12 for men and $5.25 for women per month, exclusive of board, it is easy to see that the ideal school system had not yet appeared. The annual expenditure was $90,000. The entire number of school visitations by district and local boards of officials had been less than half the number of the schools. The number of pupils in the township schools was not one-third the number of children of school age. The statute had provided for the establishment of union schools, the first step toward an effective system of secondary public education. The superintendent urged the establishment of teachers' institutes and associations, a teachers' college, and a State normal school. The attendance on the common schools had increased in 1847 to 77,800. They were in session five months in the year and instructed by 6,500 teachers, at a slight advance in salaries. The organization of the Northwestern Educational Society, including all the States of the Northwest, suggested the formation of a State association of teachers. The legislature prepared a document setting forth the condition of the State university, to counteract the hostile influences still at work against it, only 75 students being included in its calendar.

In 1848 the teachers of Michigan formed a State Teachers' Association. The indefatigable superintendent dwells with pride on the work already accomplished by the system of public instruction. Although but little more than 10 years on the ground, he compares the percentage of illiteracy in the whole country and in the different States with that of Michigan to the decided advantage of his own Commonwealth. In 1840 one white adult person of every 31 of the entire population of the United States was unable to read. In the different States the ratio was 1 in 589 in Connecticut, the lowest, and 1 in 3 in North Carolina, the highest. In Tennessee 1 in 4; in Kentucky 1 in 20; in Georgia, South Carolina, and Arkansas, 1 in 5; in Delaware and Alabama 1 in 6; in Indiana 1 in 7; in Illinois and Wisconsin 1 in 8; in New York 1 in 159; in Massachusetts 1 in 90. The drift of ignorant, foreign immigration had already seriously raised the ratio of illiteracy in some of the Eastern manufacturing States; in Maine 1 in 72; in Vermont 1 in 63. In Michigan the proportion was 1 in 29. In the Union, then of 26 States, 20 were below and only 5 above Michigan in the record of general intelligence. The illiteracy of the State was largely confined to a few counties. In several 1 in 5, 1 in 14, 1 in 22, 1 in 36 of the entire adult population was illiterate. In 8 entire counties not an illiterate citizen was reported. There were 7 counties of this sort in Ohio, while in all New England there were but 2; the 1 in Massachusetts, Franklin. There were 13 counties in which only 1 person over 20 in 4,605 of the entire white population could not read, a fact that could be asserted of no other State in the Union. In 3 counties but 1 in 425 was ignorant. In 1845 1 in 4 of the entire population of the State of Michigan had attended school, but 3 States reporting a larger attendance—Maine, New Hampshire, and Vermont. Massachusetts, Connecticut, and New York were in line with Michigan. In this State forty-six forty-sevenths of the entire school population were in the common schools, the highest proportion of any State of the Union, Ohio coming next below—thirty-six thirty-sevenths. In the 3,000 school districts in the State there were 100,000 children and youths to be

instructed. The question arose, shall the State continue to import common-school teachers from the East, or train its own young people for this important work?

The regents of the university reported that the crisis had come when it must be decided whether the branches could longer be sustained. But 4 now remained, and these could not be supported without harmful results to the university.

In 1849 Governor Ransom reported that twice as much for schools and township libraries on the mill tax had been raised as in any previous year. Thirty cents for each child between 14 and 18 had been appropriated by the State. Three times the sum had been raised at township meetings that ever had been before; in all $12,000 in advance of any previous year. The entire number attending school was 98,000. A medical department had been established in the university. There were 7 professors, but still less than 100 students. There were 17 private and denominational incorporated literary institutions, of which every one in 1848 complied with the statute requiring a report to the educational authorities of the Commonwealth.

In 1849 Mr. Francis W. Shearman was appointed as successor to Ira Mayhew. The retiring superintendent engaged in literary labors and in 1853 became the principal of Allen Academy. In 1854 he was elected by popular vote, according to the provision of the revised State constitution of 1850, to his old position of State superintendent, which he occupied by a reelection in 1856 till 1859. We shall meet him in the record of these important years in the development of the common schools of Michigan.

Mr. F. W. Shearman was born in 1817 and educated at Hamilton College, Oneida County, N. Y. He removed to Michigan soon after his graduation, at the invitation of Hon. H. R. Schoolcraft, as an assistant in his work connected with the Indians of the Northwest. In 1838 he was appointed editor of the Michigan Journal of Education, the official organ of the department of public instruction. He also held the office of county superintendent and other political positions. In 1849 he was appointed State superintendent of public instruction and afterwards twice elected to the same position by the people, having been for six years the executive head of the public school system of the State at his retirement in 1855. He retained his interest in educational and public affairs, often being called to important official duties, until his death in 1874.

The most important act of the legislature in 1850 was the establishment of a State Normal School, by the appropriation of 25 sections of the Salt Spring public lands. It was to be in charge of a board of education appointed by the governor. The lieutenant-governor and superintendent of public instruction were ex officio members, the latter the president of the board. The institution, as first established, contemplated also a department of instruction in agriculture and the mechanic arts, and in the fundamental laws of the United States and the rights and duties of citizens.

In 1850 Governor Barry reported 102,000 children in the common schools and 72 students in the university, the latter receiving $12,000. The entire expense of a student, with gratuitous instruction, was from $70 to $100 a year. The State Normal School was declared coeducational. The superintendent inclined to favor the subsidizing of academies to fill the gap between the primary schools and the university, and still had confidence in the importance of the university branches. He also brought forward the subject of free public schools. In 1850 there were 448 townships, 2,536 school districts, and 102,900 children in the common schools.

The board of the State normal school proceeded at once to locate this institution, at Ypsilanti. This village had pledged to the State an ample lot for school buildings, a subscription of $13,700, the use of temporary buildings for the normal

and model schools, and the payment of the model school teachers for five years. A memorial from the State Agricultural Society to the legislature prayed for the establishment of an agricultural college. The State superintendent appealed for an increase of salary and clerk hire; but for many years subsequent to this date the salary of the State superintendent of instruction in Michigan was one of the least generous paid by any State in the North.

The city of Detroit had been rescued from its undesirable educational condition and in 1850 reported 18 public schools in operation, 4 under the charge of male teachers at the rate of $400 and 12 under women at $200 per annum; 1 school exclusively for colored children. The schools were in operation eight months in the year.

The most important subject treated by the legislative committee on education was the making the public schools absolutely free to all the children and youth of the State. Three of the Northwestern States, with several in the East, had already taken this step and the pressure from the educational public of Michigan was increasing with every session of the legislature. But the report of the legislative committee set forth the difficulties attending the effort. Both the absolute provision for a general tax of 1 mill on the dollar and the permissive law for an additional tax of $1 per capita for each child of school age were so constantly evaded that the entire avails amounted only to the small sum of $22,000, leaving only $11,000 to be appropriated for the support of the schools. This, with the State appropriation of $39,000 and the contributions from rate bills of $29,000, gave only $80,000 for the schooling of 102,000 pupils five months in the year—some 80 cents per capita. The legislative committee proposed a general tax of 2 mills on the dollar as furnishing the least sum that could meet the urgent necessity. The subject went over, to appear in the deliberations of the convention for revising the constitution of the State, and was there disposed of by a provisional arrangement for declaring the public schools free in five years.

A most conclusive testimony to the interest of the public mind on the subject of education, after an experiment of fifteen years in the working of a complete system extending from the country district school to the state university, is furnished by a careful perusal of the debates in the constitutional convention of 1850. The subject of education occupied the convention during its entire session of fifty days and was discussed with an earnestness and intelligence that might challenge the admiration of any State in the Union. The original leaders of the common-school movement, ex-Supt. J. D. Pierce and Hon. Isaac Crary, were members deeply interested and largely influential in the direction of the debate. The result was the adoption of article 13 of the new constitution in twelve sections.

This constitutional provision, with an amendment adopted in 1861, and other sections bearing upon education, are here quoted:

ART. IV, SEC. 40. No money shall be appropriated or drawn from the treasury for the benefit of any religious sect or society, theological or religious seminary, nor shall property belonging to the State be appropriated for any such purposes.

ART. VIII, SEC. 1. There shall be elected at each general biennial election * * * a superintendent of public instruction * * * for the term of two years. They shall keep their offices at the seat of government, and shall perform such duties as may be prescribed by law.

SEC. 2. Their office shall commence on the 1st day of January, 1853, and of every second year thereafter.

SEC. 3. Whenever a vacancy shall occur in any of the State offices the governor shall fill the same by appointment, by and with the advice and consent of the senate, if in session.

ART. IX, SEC. 1. * * * The superintendent of public instruction shall receive an annual salary of $1,000.

Article XIII.—Education.

Sec. 1. The superintendent of public instruction shall have the general supervision of public instruction, and his duties shall be prescribed by law.

Sec. 2. The proceeds from the sales of all lands that have been or hereafter may be granted by the United States to the State for educational purposes, and the proceeds of all lands or other property given by individuals or appropriated by the State for like purposes, shall be and remain a perpetual fund, the interest and income of which, together with the rents of all such lands as may remain unsold, shall be inviolably appropriated and annually applied to the specific objects of the original gift, grant, or appropriation.

Sec. 3. All lands the title to which shall fail from a defect of heirs shall escheat to the State, and the interest on the clear proceeds from the sales thereof shall be appropriated exclusively to the support of primary schools.

Sec. 4. The legislature shall, within five years from the adoption of this constitution, provide for and establish a system of primary schools whereby a school shall be kept, without charge for tuition, at least three months in each year in every school district in the State, and all instruction in said schools shall be conducted in the English language.

Sec. 5. A school shall be maintained in each school district at least three months in each year. Any school district neglecting to maintain such school shall be deprived for the ensuing year of its proportion of the income of the primary-school fund and all funds arising from taxes for the support of schools.

Sec. 6. There shall be elected in each judicial circuit, at the time of the election of the judge of such circuit, a regent of the university, whose term of office shall be the same as that of such judge. The regents thus elected shall constitute the board of regents of the University of Michigan.

Sec. 7. The regents of the university and their successors in office shall continue to constitute the body corporate known by the name and title of "The Regents of the University of Michigan."

Sec. 8. The regents of the university shall at their first annual meeting, or as soon thereafter as may be, elect a president of the university, who shall be ex officio a member of their board, with the privilege of speaking but not of voting. He shall preside at the meetings of the regents and be the principal executive officer of the university. The board of regents shall have the general supervision of the university and the direction and control of all expenditures from the university interest fund.

Sec. 9. There shall be elected at the general election in the year 1852 three members of a State board of education—one for two years, one for four years, and one for six years; and at each succeeding biennial election there shall be elected one member of such board, who shall hold his office for six years. The superintendent of public instruction shall be ex officio a member and secretary of such board. The board shall have the general supervision of the State normal school, and their duties shall be prescribed by law.

Sec. 10. Institutions for the benefit of those inhabitants who are deaf, dumb, blind, or insane shall always be fostered and supported.

Sec. 11. The legislature shall encourage the promotion of intellectual, scientific, and agricultural improvement, and shall, as soon as practicable, provide for the establishment of an agricultural school. The legislature may appropriate the twenty-two sections of salt-spring lands now unappropriated, or the money arising from the sale of the same, where such lands have been already sold, and any land which may hereafter be granted or appropriated for such purpose, for the support and maintenance of such school, and may make the same a branch of the university for instruction in agriculture and the natural sciences connected therewith, and place the same under the supervision of regents of the university.

Sec. 12. The legislature shall also provide for the establishment of at least one librarian in each township; and all fines assessed and collected in the several counties and townships for any breach of the penal laws shall be exclusively applied to the support of such libraries.

The amendment adopted in 1861 in place of section 6, as above given, is as follows:

Sec. 6. There shall be elected in the year 1863, and at the time of the election of a justice of the supreme court, eight regents of the university, two of whom shall hold their office for two years, two for four years, two for six years, and two for eight years. They shall enter upon the duties of their office on the 1st of January next succeeding their election. At every regular election of a justice of

the supreme court thereafter there shall be elected two regents, whose term of office shall be eight years. When a vacancy shall occur in the office of regent, it shall be filled by appointment of the governor. The regents thus elected shall constitute the board of regents of the University of Michigan.

It is remembered "that this was the first State constitution to provide that all instruction in the district common school should be conducted in the English language;" also, that this is "believed to be the only one ever put in force that makes the election of the president of a State university obligatory upon a board of regents."

The people of Michigan had indeed shown themselves apt scholars in the school of educational experience. The sharp collisions of educational theories and foreign practices with the actual facts of the situation in fifteen years had swept out from the system every feature in which the American had resembled the Prussian scheme of universal education, which had been attempted and claimed to be adopted in 1837. The organization, support, and supervision of every portion of the school system had gradually been made dependent on the direct vote of the people, who, by the revised constitution, were empowered to elect the State superintendent of public instruction, the board of regents of the university, and the board of education, which, with the State superintendent, was intrusted with the management of the State normal school. All local school authorities were elected by the people, and all proper educational affairs under the constitution were committed to the discretion of the legislature. The attempt to exercise supervision over private and denominational schools had been abandoned, and the proposition to subsidize any school outside the State system repudiated. The organization of the State university, as it developed, was made entirely different from that of other State and private colleges. Its presidents were all eminent educators from the East; well acquainted with the improved methods of all similar existing institutions at home and abroad and their adaptation to the university of a new and rapidly growing Commonwealth. No better illustration of the complete organization and working of the American system of universal education is in existence than is now found in the State of Michigan. The provision in the new constitution for a free common school, at the end of five years, for three months in the year was doubtless the most practical and wise disposal of that question under the conditions in the State.

In 1851 the number of pupils attending the common schools of Michigan had increased to 110,000 of the 132,000 between the ages of 4 and 18. The university had been improved by the erection of extensive buildings for the accommodation of the medical department and the appointment of new professors. Its expenditure amounted to $16,000. The board of visitors discussed at length the present condition of the university. While its opportunity for free instruction opened its doors to every boy in the State willing to make suitable preparations, they ask the question why the attendance should remain so small, only 50, about the original number for the first ten years, but less than the average for the first five years. The largest class yet graduated had been 23 and the smallest 10, and the entire number of graduates 89. They discussed the recent declarations of President Francis Wayland, of Brown University, Rhode Island, concerning the readjustment of the college curriculum. Of the 2,545 recitations and lectures for the year 1850, 1,691 were confined to the ancient and modern languages and the mathematics and 854 to all other subjects; 1,200 to ancient and modern languages. The university was still wedded to the old-time American college curriculum. It was the unanimous opinion of the regents and visitors that the one imperative necessity of the institution was a competent president to administer its affairs and be the representative to the State and the country of the higher education in Michigan.

Hon. Isaac E. Crary had been placed on the board of education, to which was intrusted the management of the new State normal school. The whole number of school districts in the State was 3,097. One hundred and ten thousand children were in attendance on school, although we are not informed whether the attendance was regular or irregular. There were 1,497 male and 2,612 female teachers. The 1 mill State school tax was raised to 2 mills. The salaries of the professors of the university were $3,333.30 per term, three terms in the year. The State superintendent of public instruction was given an office in the State library, with a salary of $1,000 per annum, with some additional duties as custodian of the library.

The sketch of the public schools of the city of Detroit, appended to the report of Superintendent Shannon, is full of interest. Previous to 1841 no such thing as a free school was known in the city. There were 29 private and parochial schools, with an aggregate attendance of 700 in a city of 10,000 people. These pupils were being educated at the rate of $17 per capita, leaving the remainder of the children of school age, at least 1,300 in number, in no school whatever. In this emergency Dr. Zina Pitcher, well known for his services in connection with the State University, at that time mayor of Detroit, and Samuel Dost, esq., for many years president of the city board of education, stirred up the people to a general effort for reform. The result was the establishment in 1842 of the first system of public instruction in this important city. But great efforts were required to awaken the people from their apathy and to counteract the influence of the sectarian opponents of State education.

The critical point of religion in the schools, after a conflict that threatened to wreck the system, was decided by according to the teachers the privilege of using the Bible in religious exercises, with no attempt at explanation. In 1852 there were 2 union schools, 1 located at the old statehouse; 4 middle and primary schools, besides 1 for colored pupils. There were 4,250 scholars in attendance and $8,000 expended, the cost being reduced from $17 to less than $2 per capita. The system had fairly conquered the enlightened public opinion of the city, and hereafter there was no special obstacle to the development of a State system of public-school education in the beautiful and progressive metropolis of Michigan.

An elaborate history of the university up to date, prepared by Dr. Zina Pitcher, accompanied the report of the superintendent of public instruction for this year. Not the least valuable feature of this invaluable document, issued in 1852, under the auspices of Superintendent Shannon, was a pamphlet of 100 closely printed pages containing the school laws of the State, with elaborate notes.

Indeed, few documents so important to the progress of common-school education in any State have been issued as this volume of 640 pages prepared by the superintendent in 1852. It includes a history of public education in Michigan from the earliest Territorial period with abundant extracts from the messages of governors, the reports of State officials, and other documents illustrating the origin and progress of every department of education. It also includes a generous body of valuable information selected from the reports of the most distinguished educators of all portions of the country.

The administration of Superintendent Shannon was one of the most important, not only in executive ability, but in its relation to the most critical period of the development of the system—the clothing of the citizens of the State with a complete power for the development of universal education. Before this able official left his position, in 1854, every department of the system was provided for, with the exception of the county supervision of the common schools. It only remained that the educational ideas enacted as laws should be made a reality through the influence of the educational public upon the legislature and the

vigorous and enthusiastic administration of those intrusted with its executive functions.

The election of Ira Mayhew in 1855 to the office of State superintendent of public instruction, which he had filled by the appointment of the governor from 1845 to 1849, brought back to the service of the State one of the most truly distinguished of the early educators of Michigan. His administration of four years, by reelection in 1857, carries this record to 1859, the period near the outbreak of the great civil war, which so profoundly agitated the people of the Northwest. Superintendent Mayhew believed in magnifying his office, and his vigorous administration added to its dignity. The low estimation in which it had been held in comparison with other offices, shown by its salary of $500 per annum until 1849, was now overcome, an honorable place being given it for an office in the State library and the salary raised to $1,000. In 1855 there were 142,000 children in the schools in session five and six-tenths months, with an average attendance of three and four-tenths months. Five thousand and seventy-eight teachers, of whom 3,478 were women, were employed, and more than $300,000 annually expended. The superintendent urged the admission of young women to the State university and the establishment of union schools. The State normal school had been a success from the first. At its dedication, in 1852, the main address was made by ex-State Supt. J. D. Pierce; and Prof. A. S. Welch, afterwards president of Iowa Agricultural College, was appointed its first principal, remaining till 1865. In 1855 there were 346 students, of whom 214 were women. At the close of the dedication services a teachers' institute, under the auspices of the State board of education, was held in the buildings, attended for three weeks by 250 teachers, under the direction of Principal Welch. This was followed by a law adopting the teachers' institute as a vital part of the school system. The superintendent of public instruction was authorized to hold institutes of not less than 50, or in some cases 25, teachers, for ten continuous days, for which a subsidy of $2,000, or not less than $1,800, was made for every year.

Superintendent Mayhew was very efficient in developing this valuable aid to the department of the teaching class, and declared it "the most popular and inspiring feature of our excellent school system." In 1861 the law provided for a five days' attendance, with an appropriation of $100, and the number might be increased and the State more readily participate in the undertaking. At the Teachers' Institute in Ypsilanti, in 1852, arrangements were made for organizing a State Teachers' Association, and Principal Welch was elected president. This important association has grown with the growth of the common-school system of the State, and its annual meetings have been the occasion of visits of many of the most celebrated educators from all portions of the country and foreign lands.

But the most notable reform in the educational affairs of Michigan between 1852 and 1860 was the change in the administration of the State University. After an experience of ten years, the cumbrous branches had at last been discontinued and the attention of the regents was concentrated upon the development of the system of union and free high schools as a source of supply for the central college. Up to the period of the revision of the State constitution the board of regents had been appointed by the governor and senate. The consequence was that the first board, which held on till 1852, was, as usual, a body of political and public men, with not a member noted for educational experience. With the best intentions, the affairs of the university were handled in the careless way that always accompanies the intrusting of educational administration to nonexperts. The finances were crippled, the attendance was small, there was no proper head of the faculty, and, at the end of fifteen years and the expenditure of several hundred thousand dollars, the people of the State seemed to have little confidence in

the usefulness of the university. It was simply an obscure college of the old-time type, the instruction concentrated on the classic and foreign languages and mathematics, unprogressive and in no special way superior to other institutions of learning in the State which, under private and denominational management, were still its formidable rivals.

The new State constitution provided for a board of twelve regents, elected by the people and representing several districts, to whom was intrusted the entire financial and educational management of the university. Thus at one stroke the central educational institution of the Commonwealth was separated from the mischievous connection with political affairs and shielded absolutely from the legislative action which was the misfortune of so many similar institutions. The constitution also provided for the immediate election of a president. The new board of regents called to the post the Rev. Henry Tappan, D. D., of New York, who during the ten years of his presidency not only laid the permanent foundations of the university but also fully demonstrated the possibilities of the complete success of the State university system in the new northwest.

Up to this period in Ohio, Indiana, and Illinois the State university had been regarded rather as an interloper among the numerous seminaries and colleges of these States than as a permanent agent of the higher education of the Commonwealth. Up to 1852, under its ineffectual administration, the University of Michigan had seemed only to add another to this list of failures. It was doubtless owing largely to the peculiar characteristics of the people of Michigan, so many of whom came originally from the common-school States of the Union, that this condition of practical failure was not perpetuated. As it was, the educational public at the end of a fair experiment grasped the situation, rescued the administration from the uncertain control of the legislature and the politicians, and placed it in the hands of regents chosen for long terms by popular election, and demanded an effective president.

Dr. Tappan was the fit man for the place and occasion. To a broad culture, a large experience, and a high appreciation of the superior education he added an executive capacity bordering on the despotic, with a peculiar charm of tact and intuitive adaptation to the elements of the new Western civilization amid which he was placed. But at the time when he assumed the presidency the university needed all he was on every side of his energetic manhood. He at once broke up the regular system of a fixed curriculum and adopted what had been partially put in operation thirty years before by President Eliphalet Nott at Union College, New York, more recently remodeled by President Francis Wayland, at Brown University, Rhode Island, and for thirty years in operation in the University of Virginia. The proper idea of a university was virtually secured by a college divided into four departments, science, mathematics, philosophy, and language, all united in the preparatory studies, but separated in the higher grades. The attempt to incorporate the German system of the university and gymnasium in the college system of the United States has always ended in a practical arrangement, with an increasing number of elective courses, and in the West and South a preparatory department as the most convenient feeder to the institution. In 1852 the average status of Michigan University was simply what was regarded in the Eastern States an academical system preparatory to college. The chief addition to the college life of the country and the West, under the lead of the University of Michigan, has been what President Tappan called the uniting of the gymnasium with the university; practically the union of a higher grade academy with a college, which was thus able to admit electives and take on some of the features of the European university organization. It was, in short, a school of the practical educational type, by which the people of the United States, while always ready to adopt the best results of the higher European expe-

rience, have always reserved the right of adapting all methods and theories to their own present condition.

President Tappan also insisted on the appointment of professors for merit, and set his face resolutely against the weak compliance with the sectarian idea of making the faculty of a State university the representative of the different religious sects. He called to the different chairs men of proved ability, of whom one was his immediate successor in the presidency, and another the acting president in the interregnum preceding the appointment of President Angell. By personal effort he was able to give the new scientific department an outfit of necessary apparatus. The medical department was formed and the law school established under the direction of professors like Judges Campbell and Cooley. Meanwhile, by public addresses and frequent appearances before the educational public of the State and the nation, he, for the first time, attracted attention to the University of Michigan.

The people responded to this masterly administration. The first catalogue issued under Dr. Tappan's presidency contained the names of 222 students; four times the number in 1850. At the end of the eleven years of his residence there were in the university 30 teachers and 652 students.

It is not necessary to put on record the reasons for the final severing of the relations between the University of Michigan and its first president in 1863. More than one cause could be assigned for this act of political interference, some of them not complimentary to the board of regents and others located in the continued existence of the hostile influences through which the great leader had literally forced his way to the first grand success in the establishment of a State university in the West. The very qualities which at first were indispensable to this achievement might at last become a positive disqualification for the continuance of a man of his type in the place of chief executive. An American State university can not be administered persistently on any line of positive and relentless opposition to any powerful element of the Commonwealth. Its administration demands eternal vigilance, and, with all other endowments, its president requires among the foremost a tact and administrative wisdom that will disarm opposition and root the institution so firmly in the pride and affections of the educational public that it can not be overset by any gust of revolt. The time had doubtless come when a man of a different type was to be found who could represent this ideal of administration.

Such a man was found in Rev. Erastus O. Haven, D. D., LL. D., who became president of the university in 1863 and held the office six years, retiring with the reputation of a notable success. President Haven afterwards held important positions in other universities and rose to the final eminence of a bishop in the Methodist Episcopal Church.

For several years previous he had been a professor in the university, and came to the higher office with a complete knowledge of the existing conditions and, happily, with the ability to handle the conflicting elements that threatened to embarrass his administration.

The subsequent history of the University of Michigan must be left to future treatment in a record of the history of the American common school from 1860 to the present time.

The provision for an agricultural department in the State Normal School was found to be of no practical use, and a demand for a proper State agricultural college secured the placing in the revised constitution of the State a provision for its establishment. A situation and buildings were obtained on an estate 10 miles from Lansing, the State capital, and $100,000 was invested in the institution from the sale of the salt-spring lands and the legislative appropriation.

The institution was dedicated, and in 1857 the first State agricultural college in

the Union was set up on a farm of 676 acres, with several spacious buildings, under the direction of the State board of education.

Hon. Joseph R. Willis was appointed president, with a faculty of four professors.

Up to 1861 the new college had "a hard road to travel." Political jealousies and class prejudices fought it at every step, and the necessary legislative appropriations were obtained with great difficulty. But in 1861 the institution was taken from the supervision of the State board of education and placed in charge of the State board of agriculture.

In 1862 the passage of the bill by the Congress of the United States for national aid to agricultural and mechanical education gave to Michigan 240,000 acres of public lands, which furnished an ample income for the support of the college. The retirement of President Willis and appointment of Rev. T. C. Abbott in his place seems to have finally placed the agricultural college on a solid foundation, and it now holds an honorable place among similar institutions in the country.

Although defeated in their attempt to obtain subsidies from the State and baffled in their early rivalry with the university, several colleges and a larger number of seminaries established and supported by the zeal of the different religious denominations of the State were on the ground previous to 1860. Several attempts have been made to connect them in some educational way with the State system of the higher education, but hitherto without result. This fact must be taken into account in the estimate of the educational progress of Michigan previous to the civil war. The system of graded and union schools and their higher grade, the free high school, up to this period in its infancy, was afterwards developed into the most efficient feeder of the university by an arrangement for the acceptance of their graduates without examination from all approved high schools.

The State reform schools and asylums for the deaf, dumb, and blind had already been established in 1860. The good fortune of the educational system of Michigan during the twenty years from its establishment in 1837 till the retirement of Superintendent Mayhew in 1858 culminated in the election of Dr. John M. Gregory to the position of State superintendent of public instruction in 1859.

Dr. Gregory was born in the State of New York, in 1822, and was eminent among the large group of distinguished graduates of Union College under the presidency of Eliphalet Nott. In 1852, at the age of 30, after several years of experience in teaching and preaching, he established a classical school in the city of Detroit. In 1854 he projected the Michigan Journal of Education, of which he was the editor in chief for five years. In 1859 he was elected to the office of State superintendent, which he retained until 1864, when he retired to the presidency of Olivet College; afterwards to the presidency of the Illinois Industrial University. It was indeed fortunate that the State of Michigan, during this period of the civil war, which not only "tried men's souls" but brought a severe strain especially upon the educational organizations of all the new States, should have had at the helm of the school ship a pilot like John M. Gregory. No man among the great number of valuable educators in the new States beyond the Alleghenies has filled a crowded public life with a more enviable reputation. He brought to the work of common-school supervision in Michigan an acquaintance with the improved methods of organization, discipline, and instruction included in the popular phrase "the new education," more thorough and broad than any of his predecessors. The common school had now become a great public interest, and the time was at hand when the final question of the quality as well as the quantity of the education dispensed to the children and youth should be carefully considered. Although during these tremendous years, when the State was pouring forth her best blood for the defense of the Union, there could be no rapid advancement in the outward development of the system, it was much to keep the

great machine together, and amid the excitements of war and politics hold the people up to their obligation to the children, upon whom the results of this revolutionary epoch were sure to fall. Dr. Gregory's six reports, containing 400 pages, apart from their local interest have taken a high place in the present educational literature of the country. No mass of writing on public education in any age or land in practical value and inspiration can surpass the great body of the reports of the State and city superintendents of schools in the United States, the papers read and debates in the numerous associations of educators, legislative reports and addresses, and especially the great debates in the Senate of the United States on national aid to education from 1880 to 1890, during the sixty-five years from the beginning of the great revival of the common school in 1835 to the present day, and here the writings of Dr. Gregory have a unique and permanent value.

In 1860, after twenty-five years of the common school, the State of Michigan could report 4,000 common-school districts, 246,000 children and youth of school age, one-third of the entire people of the State from 4 to 18, with 184,000 in school attendance, 2,000 school-teachers, and 12,000 officials connected with the system; $467,000 were paid for teachers' wages and nearly $1,000,000 expended in all the departments of public instruction of the State. There were 430 students in all departments of the State University and 287 in the normal school, largely free and self-supporting.

No American Commonwealth had more and better reasons for rejoicing over the progress of popular education than Michigan, which in half a century had risen from a wilderness to one of the most favored and progressive States of the Republic.

WISCONSIN.

On May 28, 1848, the Territory of Wisconsin, a vast wilderness of 56,040 square miles, thinly inhabited by 30,500 people, was admitted to the Union. The constitutional provision for public instruction, dating from May 29, 1848, and here quoted, was one of the most complete and progressive measures yet adopted by any new State:

ARTICLE X.—EDUCATION.

SECTION 1. The supervision of public instruction shall be vested in a State superintendent and such other officers as the legislature shall direct. The State superintendent shall be chosen by the qualified electors of the State in such manner as the legislature shall provide. His powers, duties, and compensation shall be prescribed by law: *Provided*, That his compensation shall not exceed the sum of $1,200 annually.

SEC. 2. The proceeds of all lands that have been or hereafter may be granted by the United States to this State for educational purposes (except the lands heretofore granted for the purposes of a university), and all moneys and the clear proceeds of all property that may accrue to the State by forfeiture or escheat, and all moneys which may be paid as an equivalent for exemption from military duty and the clear proceeds of all fines collected in the several counties for any breach of the penal laws, and all moneys arising from any grant to the State where the purposes of such grant are not specified, and the 500,000 acres of land to which the State is entitled by the provisions of an act of Congress entitled "An act to appropriate the proceeds of the sales of the public lands and to grant preemption rights," approved the 4th day of September, 1841; and also 5 per cent of the net proceeds of the public lands to which the State shall become entitled on her admission to the Union (if Congress shall consent to such appropriation of the two grants last mentioned), shall be set apart as a separate fund to be called the school fund, the interest of which, and all other revenues derived from the school lands, shall be exclusively applied to the following objects, to wit: First. To the support and maintenance of common schools in each school district and the purchase of suitable libraries and apparatus therefor. Second. The residue shall be appropriated to the support and maintenance of academies and normal schools and suitable libraries and apparatus therefor.

SEC. 3. The legislature shall provide by law for the establishment of district schools which shall be as nearly uniform as practicable, and such schools shall be free and without charge for tuition to all children between the ages of 4 and 20 years, and no sectarian instruction shall be allowed therein.

SEC. 4. Each town and city shall be required to raise by tax, annually, for the support of common schools therein, a sum not less than one-half the amount received by such town or city, respectively, for school purposes from the income of the school fund.

SEC. 5. Provision shall be made by law for the distribution of the income of the school fund among the several towns and cities of the State, for the support of common schools therein, in some just proportion to the number of children and youths resident therein between the ages of 4 and 20 years, and no appropriation shall be made from the school fund to any city or town, for the year in which said city or town shall fail to raise such tax, nor to any school district for the year in which a school shall not be maintained at least three months.

SEC. 6. Provision shall be made by law for the establishment of a State university, at or near the seat of the State government, and for connecting with the same, from time to time, such colleges in different parts of the State as the interests of education may require. The proceeds of all lands that have been or may hereafter be granted by the United States to the State for the support of a university shall be and remain a perpetual fund, to be called the "university fund," the interest of which shall be appropriated to the support of the State university, and no sectarian instruction shall be allowed in such university.

SEC. 7. The secretary of state, treasurer, and attorney-general shall constitute a board of commissioners for the sale of the school and university lands and for the investment of the funds arising therefrom. Any two of said commissioners shall be a quorum for the transaction of all business pertaining to the duties of their office.

SEC. 8. Provision shall be made by law for the sale of all school and university lands after they shall have been appraised, and when any portion of such lands shall be sold and the purchase money shall not be paid at time of sale the commissioners shall take security by mortgage upon the land sold for the sum remaining unpaid, with 7 per cent interest thereon, payable annually at the office of the treasurer. The commissioners shall be authorized to execute a good and sufficient conveyance to all purchasers of such lands and to discharge any mortgages taken as security when the sum due thereon shall have been paid. The commissioners shall have power to withhold from sale any portion of such lands when they shall deem it expedient, and shall invest all moneys arising from the sale of such lands as well as all other university and school funds in such manner as the legislature shall provide, and shall give such security for the faithful performance of their duties as may be required by law.

In this elaborate statement did the people of the new commonwealth of Wisconsin record their deliberate purpose to adopt universal education as the chief corner stone of the State:

1. The common school through all its departments, from the elementary district school to the State university, with a normal annex for the training of teachers and a provision for public libraries. 2. That each town or city should raise by tax a sum not less than half the amount received from the State for school purposes, and the neglect to do this should forfeit the rights to share in the distribution of State funds. 3. The schools of all grades should be free to all persons between the ages of 4 and 20. 4. No sectarian religious instruction should be allowed in any public school or in the State university. 5. A State university should be established and a connection be formed between it and "such colleges in different parts of the State as the interests of education may require." But the provision against sectarian instruction in the State university would seem to bar out the public support or subsidizing of any denominational seminary or college. 6. The secretary of State, attorney-general, and treasurer should constitute a board of commissioners for the sale of school and university lands, and the investment of the funds derived therefrom. No constitution hitherto adopted by any State beyond the Alleghenies had so thoroughly embodied the fundamental ideas of the American system of universal education as this of Wisconsin.

Immediately on the admission of the State to the Union a school law was

enacted, in 1848, which rendered inoperative the three different systems of school statutes under which the territory had administered its educational affairs. This law authorized the division of the township into school districts, and the management of local affairs by the people. It provides for reporting of district school affairs, first to the town superintendent, then to the clerk of the county board of supervisors and by him to the State superintendent of public instruction; a provision that made the collection of reliable school statistics a practical impossibility.

The first report of the State superintendent of public instruction, Mr. M. E. Root, in 1849, opens with a notice of this defect, and gives a very unsatisfactory account of the educational condition of the State. Through the partial reports of the 25 counties, 266 towns containing 1,430 whole and 455 fractional districts, were heard from; 350 towns and 102 districts failed to report. It was roughly estimated that there were 46,000 pupils in attendance on the schools, and 80,450 between the ages of 4 and 20. The city of Milwaukee was still a village of 5,000 people. The average term of the schools was 3.93 months, ranging from 12 to 0.33 of a month. In Rock County 75 per cent of a school population was in school, and 54 per cent of the entire number in the State. Male teachers were paid $15.22 and female $6.92 a month; $181,637 was invested in schoolhouses, of which 704 were reported; 36 built of brick, 25 of stone, 296 frame, and 359 log; costing from $5,000 to 75 cents each. Brown's and Kirkham's grammars, Adams's arithmetic, Sanders's readers, Webster's speaker, and Morse's geography were the favorite text-books. There were 94 incorporated private schools in the State, with 2,357 pupils—2.72 per cent of the entire school population. The State school lands had not yet been sold, and the expenses of the first year's school keeping had been met by taxes on the property of the district and private subscriptions. The State had collected $17,000 and the local tax amounted to $27,000—$44,000 being the entire amount of expenditure for public education.

It was estimated that the 1,523 school sections of public lands if properly sold and invested would produce a school fund of $5,000,000 and that, by the year 1850, the State would be able to distribute $30,000 of the income of the fund thus secured. The superintendent announced that the education of the 91,000 children of school age in 1850 at $3 per capita, would require an income of $273,000, and by 1860 the income of the State fund would not meet half the expense of the common schools. The new law provides that the township should be divided into school districts, and three school directors should be chosen by popular election for each district; that a school tax providing not less than one-half the sum received from the State should be raised from each district as a condition of sharing in the distribution of the annual income of the general fund; that each town and city should choose by annual election a superintendent of education who should examine and issue certificates to teachers; that orthography, reading, writing, arithmetic and grammar should be taught in all schools. No distinct provision was made for union, graded, or high schools; but, as the law insured an education to every person till the age of 20, the power to organize for the superior grades of instruction was implied, and several of the larger towns of the State at once entered upon the work of grading their schools.

The usual defect of the lack of competent teachers appears in the earnest demand of the State superintendent for the establishment of teachers' seminaries. The State university was empowered by the constitution and laws to establish a department of pedagogy, and the superintendent looks to this source of supply with a misplaced confidence, for the university school lands had already entered on the mischievous career of waste and speculation that delayed for years any efficient development of the institution. Indeed, without the stimulus of the act of 1862, for the endowment of agricultural and mechanical education

by the congressional gift of national public lands, it is not easy to see how the State University of Wisconsin could ever have been established on a substantial foundation. The provisions of the constitution for a department for the "training of elementary instructors," opened at first to young men, but finally to women for five months in the year, including the enjoyment of instruction and lectures by the different faculties and a diploma on graduation, declared that it was the "fundamental idea to make the university subsidiary to the great cause of popular education by making its normal department the nursery of the popular mind, and the central point of union and harmony in the educational interests of the commonwealth." For some reason the university idea was not popular, encountering on the one hand the usual prejudice against the support of the higher education by the State, and on the other the rivalry of the seminaries and colleges already established by the different religious denominations.

One of the most valuable features of this excellent report by Superintendent Root was the published correspondence with a number of the leading educators of the country, including Horace Mann and Henry Barnard, especially concerning union schools. It was shown that by a proper organization of elementary schools, taught by women, with a central township school of higher grade under a master, eight months of instruction could be secured by the judicious use of the present means. If there has been one point on which the judgment of American educators of all sorts has been practically unanimous it is the wasteful and ineffectual system of the dissipation of the school funds of the township among several districts, practically isolated from each other, and without central control, which has been the popular ideal of educational "independence."

An admirable letter from Mr. George B. Emerson of Boston, which accompanies this report, is full of ideas that set forth the best practical methods of teaching. He says "There is no reason why all that is now done in the most costly and select schools should not be done in all the common schools of whole States. There is, on an average, as much capacity among the children of a country village as in those of the foremost city of the world. There is probably more ability to teach among the females to whom the children of the common people are intrusted, than among the men who have charge of the children of the favored classes." He urges the impolicy of the State to give itself up to a uniform style of schoolbooks, since "Schoolbooks may be made in Wisconsin better adapted to the needs of its children than any now in use." There is a fearful waste of time in the false methods of teaching spelling, grammar, and arithmetic. "All time spent in oral spelling is lost." Grammar should be taught orally till the age of 12. In the place of the eternal "ciphering," which is the evil genius of the schools, should be substituted mental arithmetic, and drawing, with the application of school studies to the business of life. He sketches a course of study for the graded and high schools which is a generation in advance of what is now in operation through half the Republic. This testimony of Dr. Emerson, himself a distinguished master of a famous school for the daughters of the most favored class of the then most cultivated city of the Union, is important to the last degree.

Superintendent Root quotes, in the same letter, a passage discussing the selection of text-books to the effect—"Booksellers are a difficult class to get along with, at any rate"—a prophecy of the unspeakable entanglement into which every State of the Union has been involved which has adopted the system of even recommending a uniform system of schoolbooks.

The superintendent strikes at the weak point in the State normal school system in the remark—"The temptation will be to turn out large grists, coarsely and rapidly ground." He recommends institutes of 100 teachers held for ten days in succession. Horace Mann, then in Congress, and a distinguished conductor of teachers' institutes in New York assert that the schools of those States have

been most improved by teachers' institutes and city superintendency. Hon. S. S. Randall, of Cortland, N.Y., the biographer of Thomas Jefferson and superintendent of schools of the State, dilates at length on the importance of county superintendence of education and ascribes the defeat of the first experiment of New York in that line to the neglect of the people to elect suitable men for the office. Mr. J. B. Fowle, of Massachusetts, and Professor Swett, of New York City, are quoted as of the highest professional reputation as conductors of teachers' institutes. This report of Superintendent Root is a most valuable document, including the experience of this official before his election to his position as a fit testimonial to his previous services in the cause of universal education in the Territory.

Superintendent Root remained in office three years longer, until 1853. During the second year of his administration the school term increased 27 per cent, the number of children attending school nearly doubled, and the outlay for public education was nearly quadrupled, reaching the sum of $149,000. By act of Congress, the State received the gift of the unsold swamp and overflowed lands within its borders—a most valuable benefaction, as out of it was afterward developed the ample normal school fund of the State. The indefatigable superintendent made a tour of the Commonwealth. He visited 15 of the 23 counties, everywhere inspecting schools, making addresses, and forming reliable organizations among the progressive friends of education. He comments almost with contempt upon the quality of the average school. "The great body of the youth of the country continue in school from the age of 5 to 16, and not 1 in 20 of them is qualified by the education he receives there for the transaction of even the ordinary business of life in a respectable manner." The defect is in the incompetency of teachers, the clumsy methods of instruction, and the lack of thorough organization. He returns to his urgent plea for the proper gradation of township schools, and insists on the necessity of some effective system for training teachers. The regents of the university announced that a department of instruction would be opened in 1850, the buildings already being under construction. The superintendent protests against the niggardly provision for his own office, his salary being limited by the constitution of the State to $1,200, with no allowance for traveling expenses, clerk hire, and the proper furnishings of his official rooms. On retiring from his superintendency, Dr. Root had the satisfaction to announce that, since 1848, the wages of male teachers had advanced 14 and of female 35 per cent; the attendance on the schools had risen from 32,000 to 80,000, and 20 per cent gained in the length of the school term. There were 2,300 schools, with an average of 50 pupils, with twice the number of teachers; the winter schools generally taught by men, and the summer by women. He urged the propriety of a county board of examiners of teachers, and complains of the unreliability and confusion of school statistics.

The office of State superintendent for the coming two years was filled by Mr. A. P. Ladd. The new superintendent opens fire in a vigorous exposure of the condition of the average schoolhouse. According to his description it seems to have been generally located on the same principle as the old-time New England graveyard, on land that could be used for no other purpose. The average length of the school term had reached five and one-half months in 1852. Superintendent Ladd recommends a series of school readers, of course, different from that approved by his predecessor. He also differs from the suggestions of Superintendent Root concerning the establishment of a graded school in each township, thinking it impossible, and suggests what has been so often advocated, but rarely, if ever, adopted, a general system of county high schools. The common school fund of the State had now reached $819,000, and the university fund had secured, out of the wreck of its noble land endowment, the meager sum of $45,000 as the entire capital for inaugurating the higher education of the State.

In 1853 the number of counties in Wisconsin had increased to 45 and there were 97,800 children and youth in regular and irregular school attendance; $175,000 was annually expended. Of the 2,200 schoolhouses 900 were still built of logs, and but 150 of brick and stone. An interesting controversy between the General and State Governments had sprung up concerning the disposition of the public school lands. The university fund consisted of 72 sections—two entire townships, with some addition of saline lands. The commissioners for the sale and investment of the school lands seemed to have been afflicted by gross incompetency or indifference to the cause of education; their chief interest being, probably, to increase the population of the State by attracting immigration at all hazards. Speculators were absorbing great tracts of this precious estate in quantities from 5,000 to 40,000 acres, and the despoiling of valuable timber lands went on almost unnoticed. But in a State as large as a European kingdom, virtually an all-out-door wilderness, we may not too severely comment on the eagerness of the people to "get out of the woods" into "broad daylight" and find themselves in company with a moderate number of their fellow-beings, as a relief from the perpetual conflict with all sorts and conditions of human nature. But the results were the same in Wisconsin as elsewhere. The children of the early generations of the State were compelled to grow up with a meager outfit, as far as the quantity and quality of schooling was concerned. Still, the great stream of immigration was setting in, like the torrent of the Father of Waters at flood tide, toward the States included in the mighty empire by the Great Lakes.

Superintendent Ladd urges a complete revision of the school laws of the State, and protests against the hopeless overwork and underpay in his own office. He quotes a formidable collection of testimonials concerning the subject of township superintendency from the leading educators of several States, and complains that his suggestions in this and other matters have been neglected by the previous legislature. His second report is almost barren of statistics, being mainly a treatise on schoolhouses, teachers, school government, and superior methods of instruction. The promised effort on the present conduct of the schools, for some reason, was not forthcoming. He had visited 23 counties and assisted in institute work. Although nearly every county was now engaged in this useful enterprise to some extent, the legislature still failed to recognize or encourage it by an appropriation. Owing to the same unwillingness to appropriate money, the State normal school still remained only a promise.

A State teachers' association was formed in 1852. The proposition to establish a county high school never came to a vote. Owing to the lack of funds, the State university was obliged to charge tuition for all studies. The superintendent declares that the public school is still, to a large extent, an object of social distrust and prejudice. "The children of the wealthy seldom enter it, or are early removed to private or denominational institutions of learning." In the city of Milwaukee, out of a school population of 12,600, but 4,640 were in the public schools, and quite as many in private and church seminaries. But the city of Kenosha educated four-fifths of its 4,000 children in the public schools, paying $700, and Racine $800, as salaries of superior teachers. Superintendent Ladd bade farewell to his important office with an urgent plea to parents to interest themselves in the fundamental duty of training their children for good citizenship in the common schools.

In 1854, Mr. H. A. Wight was elected to the State superintendency. He published still another list of schoolbooks, apparently an improvement on previous recommendations; all of them amounting simply to the expression of a hope that the great variety of text-books could be somewhat limited and uniformity somewhat promoted. The serious evil of irregularity of attendance is noticed and reform called for, but with no apparent effort to ascertain the proportion of the

average daily attendance to the enrollment, on which the efficiency of any school system so largely depends. Owing to the refusal of the legislature to afford the needed outfit, the project for a university normal school department still remained a castle in the air. Of 152,000 persons between the ages of 4 and 20, 101,000 were in attendance on the common, and 5,000 in private schools. The report contains an appendix on schoolhouse architecture, with plans. The death of Mr. Wight terminated his occupancy of the office of State superintendent at the end of his first year's service.

His successor was Mr. A. Constantine Barry, who reports, in 1855, that there are 45 organized and 10 unorganized counties in the State, with 468 towns and cities and 3,584 school districts. Of the 186,000 persons of school age, 122,000 were still in school.

The school fund, despite the operations of the "land sharks," had now reached the sum of $1,897,000. The new superintendent protests that fourteen to sixteen hours' work a day is a hardship from which he and his subordinates should be relieved by a more generous provision for the support of the office. The university at last had made a feeble effort at the establishment of the long-heralded department of instruction, in the assignment of its duties to Professor Reed, the occupant of the chair of English, with an additional stipend of $500. The head of the university from the first had been President Lathrop, called from the presidency of the University of Missouri.

Superintendent Barry also engaged in an interesting correspondence with President Andrews, of Marietta College, Ohio, and Henry S. Randall, of New York, chiefly on the advantages of county superintendency of schools, and says, with notable common sense, "There is no economy in saving a dollar to each head of a family by a system of common schools in which it will take ten years for its children to obtain the education they get elsewhere in five years." The early superintendents of public instruction in the new Western States were greatly aided by their habit of extensive correspondence with the more experienced educators of the original public-school commonwealths. In his first report Superintendent Barry publishes valuable documents from J. L. Pickard, principal of Plattville Academy—the first appearance of this eminent educator before the educational public of the State and country; from Prof. P. R. Hoey, of Racine, on schoolhouses; Professor Baird, of the Smithsonian Institution, of Washington, D. C., on the study of natural history in common schools; and from the superintendent of instruction in the City of New York, Hon. S. S. Randall.

In his second report (1856) Superintendent Barry publishes a series of circulars addressed to local officials, to obtain more reliable information concerning the condition of the schools. He writes, "from a personal inspection of the schoolhouses in many parts of the State, I know that they are mean and murderous things, the most of them." He urges the establishment of normal schools beyond the meager arrangements at the university, and presses the importance of county supervision and the grading of schools. He blurts out, "We learn from this exhibition of the wages paid to teachers that the man who saws our wood and takes care of our horses and cattle, or the female who presides in the kitchen or dairy, as a general thing receives more per month than the teachers of our children." He writes, in earnest, advising music in the schools; and quotes, at length, from the replies of school officials to a list of searching questions by the superintendent.

The report of 1857 is chiefly devoted to "The presentation of a few thoughts on the general subject of education, and the duties and responsibilities of parents and committees." His promise of a supplement to this document was not performed, and in 1858 Mr. Lyman C. Draper appears in his place.

The administration of Superintendent Draper was eventful as connected with

the appearance of Hon. Henry Barnard in Wisconsin as president of the State University and director of institute work. No Eastern educational character had ever "gone West" with a more magnificent heralding than this great compeer of Horace Mann. It is interesting to contrast the circumstances under which these two veterans in the great revival of the common school left New England during the same decade, memorable in the history of the cause of universal education in the Northwest.

After a dozen years of such work as few men have lived through as first secretary of the Massachusetts Board of Education, and a four years' political "outing" at Washington as a member of Congress, Horace Mann had been left by a conservative lurch in the politics of his State stranded in public life, broken in health, and almost bankrupt in fortune; his only apparent recourse in what appeared to everybody save himself the hopeless task of organizing a college, founded by a religious body absolutely without experience in the management of educational institutions; as a business enterprise doomed to failure from the beginning; an experiment with no public backing and abundant promise of strong opposition. Even to-day some of our notable educational leaders talk of his life at Antioch College as a mistake, and deplore the fact that he had not been willing to "sulk in his tent" until an opening could be found, perhaps, in the presidency of a New England College, or the principalship of one of his own normal schools. But it is doubtful if the removal of any educator during the past fifty years from New England to the West has borne such fruit in the most vital region of the organization of the higher education demanded by a new country, as this latter-day toil and sacrifice of Horace Mann, crowned by the pathetic scene around his death bed on a summer day of 1854.

The coming of Henry Barnard to Wisconsin, on the contrary, was perhaps the most promising in its outlook of any similar event in the history of American education. He came, not from disgust and defeat at home, but at the close of a dozen years of notable service in Connecticut and Rhode Island; widely known from his frequent personal visits and voluminous writings in every portion of the country, and not unknown abroad. He had never mingled in partisan politics, and was in no way obnoxious to the educated evangelical religious people of New England or the West. His mind was of that cosmopolitan structure which, married to a temperament extremely amiable and disposed to see the best everywhere in everybody, gave to its possessor a rare and perilous capacity of exciting great expectations founded on an excessive popularity. His appearance was heralded by an elaborate biographical sketch in the first voluminous report of Superintendent Draper, in which the young Commonwealth seemed to rise up to hail the already veteran educator, who came like the wise men of the East to bear gifts of wisdom and prophecy to its children.

But without any disparagement of the result of his brief career, especially in lifting the teachers' institute to a more vigorous life and gaining a wider publication for his great work, the American Journal of Education, it is not easy to discover that the educational affairs of the State or even the university were either greatly stirred by his appearance or especially retarded by his failure from bad health to continue at his post. In fact, Dr. Barnard, considered as an executive educator, even in New England, is now chiefly interesting as a background to his great fame as the foremost literary representative of the American system of universal education. Every term of his public service everywhere seems to have been used largely as a new occasion to put forth another section of that marvelous "story without an end," to which his life, as collector and distributor of the world's educational experience, has been devoted for the last more than sixty years. It was far better that Dr. Barnard should be spared from the failures and inevitable reactions of public opinion to which any man, however eminent,

must have been exposed under similar circumstances, that he might henceforth keep on in the widening highway of American educational journalism and historical investigation on which he had already entered.

Indeed it is not evident that a State like Wisconsin, so liberally endowed with able and practical leaders in all departments of public life, would have been especially benefited by the continued residence of such a guide. The State superintendent of public instruction, Dr. Draper, was certainly a Nestor in the very field where Dr. Barnard was chief. His first report is one of the most valuable educational documents ever put forth in any State; especially interesting as showing the omnivorous reading and eager interest with which the foremost men in this new field of educational effort were gathering in and adapting to home use the theories and experience of all countries. It is a stout volume of 400 pages, filled with information, not only valuable to the legislator (if he often reads such elaborate reports), but an encyclopedia for reference by every student and every public man who aspired to instruct the people on this ever-fresh topic. His correspondence seems only to have been limited by the number and rank of the educators, who replied always with courtesy and often with thoughtful suggestions to his inquiries. His reading was wide, and he spared no tax on the patience of his readers in putting before them the results of his own investigations and experience. His statistics were elaborate; especially from States where the science of educational statistics was already appreciated and cultivated. And if there remained in Wisconsin any considerable class of people who were known beyond their own little home circle as open opponents of the American system of universal education, it might be said of Superintendent Lyman Draper in educational, as of Theodore Parker in theological controversy, by Lowell, that, "He banged his opponents with the whole tree of knowledge torn up by the roots."

But the administration of Superintendent Draper was not alone a literary gift to the cause of education in Wisconsin. During these two years the legislature passed an important law for the establishment of district school libraries, whereby 10 per cent of the entire State appropriation for schools was given for the purchase and distribution in libraries of good books for the children, amounting to $35,000 for the whole State. His progressive spirit and prodigious energy were all needed to arrest a wave of discouragement that was sweeping over the State, from financial reasons and the falling off of immigration. He published a new edition of the school laws, with annotations and much needed explanations from his own experience. He caused 600 copies of Webster's Unabridged Dictionary to be distributed among the schools. He seems to have wrought in full sympathy with Dr. Barnard in his extended service among the teachers in the institutes. Of a population of 900,000, 175,000 children were gathered into the schools.

The first conclusion by the Western superintendents of public instruction concerning the neglect of the schools by the people appears to be somewhat exaggerated. The legal school age, 4, 5, or 6 to 21, was itself misleading. No State to-day holds any considerable portion of its children in public schools beyond the age of 14. The State of Maine has boasted of the largest per cent of children from 6 to 14 in "average daily attendance in the schools." Even Massachusetts is obliged to account for 20 per cent of absenteeism at that limited age. When Superintendent Draper declared that one-third the children of Wisconsin in 1859 "were growing up in ignorance," he probably meant that one-third of the persons between 4 and 21, at any given date, were not to be found in the schoolroom. But of the large number between 14 and 21 not in school, doubtless many had in some degree been there at an earlier age and were now beginning the life of hard work in a new commonwealth, which was the lot of the average Western boy and girl half a century ago. When he says that there were 1,000

children in one county which were not sent to school because of the poverty of their parents, he touched a permanent cause of the neglect of education by the poorer class of immigrants, who even in the great centers of metropolitan culture would have enslaved their offspring to child labor were it not for the benevolent legislation of several States for the protection of the children against the twin curses of overwork and vagrancy. The most dangerous features in the early years of the common school in the West, as now in the South, were and are the incompetency of teachers and the irregularity of attendance. In a sparsely-settled country, especially in the earlier years of the great Northwest, the difficulties of school attendance, especially in midwinter, were simply appalling. What with uncomfortable schoolhouses, insufficient clothing, long distances, and bad roads, the temptation for parent and child to keep snug at home was almost irresistible. With all these drawbacks the experienced educator of to-day reads with great admiration and often with amazement the inspiring record of the founding and growth of that greatest agency of Western civilization—the common school.

The promotion of Mr. J. L. Pickard from the principalship of an academy to the State superintendency of public instruction, in 1859, which dates the beginning of a career of great usefulness in the most responsible positions, extending through an entire generation, was a great good fortune to the State. His first report, December, 1860, showed that a practical educator was at the helm. The ordinary topics in every document of this description were here treated in such a vital and broad manner as turned attention to the causes of acknowledged defects, with the sober and practical suggestions of at least the beginnings of a reformation. These qualities at once challenged the confidence of the educational public and account for the esteem, amounting to strong personal friendliness, in which Dr. Pickard has always been held in the Northwest. He went to the heart of the matter in exposing the almost incredible ignorance and inexcusable carelessness displayed in the attempt at making up reports by numbers of the local school superintendents. "The reports not infrequently exhibit an average of from fifteen to fifty months of school during the year, or an equally incredible degree of attendance of pupils." "The county clerks simply copy the reports sent them by the town superintendents. The town superintendents copy the reports of the district committees." Even in such "plain sailing" as the enumeration of the children from 4 to 21, and the length of the school term, instances appear of more than twelve months school in a year, a condition that would have been ideal for Horace Mann, who was always longing for "an almanac with more than three hundred and sixty-five days and twelve months in the year." He puts his finger on the source of this chronic shiftlessness in the fact that there are 13,500 officials connected with the present school system of the State; the majority without or receiving only a petty salary. Of these, 5,000 town superintendents and district committees stood nearest the schools. The weakest point in this ceaseless chain that pretends to link the district schoolhouse with the statehouse is the town superintendent. He was a man elected annually, with undefined duties, the chief of which was the examination of teachers and the distribution of school funds to the districts. Superintendent Pickard exposes the sham that this department of school administration has become, and proposes to transfer the examination and certification of teachers to a county superintendent, and the clerical and financial functions to the town clerk. The testimony of the ablest educators of the State and most competent superintendents of the leading States was almost unanimous in the condemnation of this system.

One important topic named by Superintendent Pickard accounts for a great deal of inefficiency in local administration. "The town superintendency is an office that occupies but little time, not enough to interfere sensibly with other

duties, without furnishing compensation that will warrant a suspension of regular business." The era of development in new countries, where every man of ability is expected to answer the call to distribute himself all over the field of public service, soon passes away. All success in local administration, educational or otherwise, is in proportion to the ability of the occupant of the office, and his power to serve the public without the risk of financial ruin to himself. Many of the town superintendents were themselves teachers, and the manifest impropriety of placing one of the schoolmasters of a county town as a "court of last resort" for all his associates would seem to be evident. A careful estimate shows that an effective county superintendency could be established at a trifling excess of expense to that almost wasted on the township superintendency.

The good work of school grading was going on. One town in seventeen in the State reported a high school which, although, of course, not up to a city standard, was still an advance on the ordinary district ungraded arrangement, probably the worst possible. Nine years before there was but one graded school in the State, at Kenosha, and in 1859 the superintendent writes: "Nearly all our cities and many of our villages are now able to say that their schools will not suffer by comparison with those of our older neighbors." Superintendent Pickard seems to have been the first official of the State to fully realize the difference between school enrollment and average attendance, the neglect of which is the stumbling-block of all communities at the first establishment of the common-school system. He writes: "Out of 130,000 scholars registered or enrolled in the schools of the State, only 59½ per cent, 77,090, are actually in the schools. There are in all the schoolhouses seats for only 69½ per cent of the registered scholars, 90,350. The pupils registered from 4 to 6 years of age constitute 16.02 per cent of the whole, from 16 to 20—6$\frac{3}{20}$ per cent. The tender age of the great mass of school children accounts largely for irregularity of attendance. A better classification of pupils, improved schoolhouses (27 per cent of the whole being registered as 'poor)', and a wholesome revival of interest among multitudes of parents, will alone be an effective cure for these serious defects." The superintendent, during his first administration, inspected 300 schools, delivered 50 addresses, and visited 200 teachers and several hundred town superintendents and district officials, among all classes of schools and varieties of population. He expresses the hope that during the coming year he will be able to reach all the organized counties of the State.

The State school fund in 1860 distributed 64 cents per capita for education and, with the steady growth of population, 25 cents per capita would be the limit. But the increasing wealth of the people would enable them to supply the deficiency in the only reliable way of supporting a system of public education—local taxation. The public school fund in 1860 was $2,233,546.71, which, at 7 per cent, furnished an income of $156,348.17. The swamp-land fund had already reached the respectable amount of $424,591. The prospect was good for a permanent fund of $3,234,156.

In the well-worn realm of the qualification of teachers, the superintendent puts in one pithy sentence "the conclusion of the whole matter." "The true teacher is not only one agency, but the agency making all other agencies reliable." He urges the adoption of a system of graded certificates as a check on the imposition of the crowd of mercenary and worthless people "who reach the summit of their ambition when they have obtained a legal certificate of qualifications." Teachers' institutes had been held in more than half the counties under the direction of Dr. Henry Barnard, the agent of the normal board of regents. Two thousand teachers had been reached. But one of the chief advantages of the Institute, the superintendent declares, is that it awakens and enforces the desire for permanent normal schools. He gives a guarded approval to the plan advocated by

the State board of regents, of subsidizing the schools that will establish a normal department; an imitation of the exploded New York system that soon came to grief in Wisconsin. He does not believe the university will meet the wants of the people for the extended system of professional instruction that can alone furnish a generation of fit teachers to the common schools.

The State Association of Teachers and the Journal of Education were commended as important agencies for good. A long section of this important report is given to the subject of schoolhouse architecture and furnishing. The system of school libraries he pronounces a failure for the past ten years. Out of 300 schoolhouses visited, the superintendent found no libraries worthy the name, save when the district had added a voluntary tax to the amount received. The legislature of 1859 had passed a new law to establish a permanent township school library fund by a tax of one-tenth mill in the districts and 10 per cent of the school fund. But the succeeding legislature had disagreed on the method of appropriating this fund, and the superintendent makes several suggestions in this line. No part of the report is more valuable than the dozen pages of "general suggestions," in which the superintendent discusses the whole subject of popular education.

At the end of this epoch of the organization of the common-school system of Wisconsin the superintendent and the people had good cause for congratulation. Fifty-six cities and 737 townships were divided into 3,399 whole and 1,827 portions of districts. There were 288,984 children and youth between 4 and 20, an excess of 11,000 males, of whom 194,375 were registered in the common schools, 2,200 under 4 and 2,826 over 20 years of age, making in round numbers an attendance of 200,000.

The schools were in session six and two-elevenths hours in the day, with an average attendance of four and nine-hundredths months. Male teachers were paid $24.20 and females $15.30. The entire expenditure for public education was $573,756.12, of which $171,460 was paid by the distribution of school funds and $402,750 raised by public tax. Of the 4,000 schoolhouses, 1,405 were still log and 2,297 frame, their entire valuation, $1,314,716, averaging $325; the largest $3,300 and the least $12. Three thousand five hundred of these were destitute of maps, 942 of blackboards. There were 1,175 district libraries, containing 35,939 volumes. Six thousand four hundred and seventy-three pupils were found in 161 select and private schools. In no country and at no period in human history has the interest in the free schooling of the masses been awakened as in the settlements of the Western and Pacific States of this Republic during the past fifty years.

In only one particular had the glowing anticipations of the leading educators of Wisconsin been disappointed. The long talked of and expected State university in 1860, twenty-four years after the organization of the Territory, was still little but a "great expectation" struggling with a very limited performance. As early as 1838 a grant of 46,080 acres of land had been made by the General Government to the Territory for a university. Although originally the Territory of Wisconsin included Iowa and Minnesota, outside its present limits, it retained the entire two townships of land when reduced to its present ample estate, which, at first, included the northeast portion of the present Minnesota.

The two defects in the method of locating the university lands were, first, the authority given to locate seventy-two parcels of unoccupied lands in any portion of the State; and, second, the terms of the grant were "for the *support*," rather than the establishment of a university. To the advantage taken of the former and the persistent indifference of the State for a series of years to the latter may be ascribed the failure of the university idea to materialize itself at all

until 1850, and after that date, for several years, to accomplish anything worthy of note for the higher education of the children and youth.

A board of commissioners was appointed by the legislature in 1839 for the location and management of the university lands. Also, a "board of visitors of the University of Wisconsin," 21 in number, including the governor, secretary of the treasury, judges of the supreme court, and president of the university, was appointed. But, as there was no university to visit, this body was a purely ornamental group of high public dignitaries until 1850.

During the Territorial period the 46,080 acres granted by Congress for the support of a university were located, in 1840, by a committee appointed by the governor, consisting of one competent person in each of the land districts of the State. They began the work, and on the admission of the State to the Union it found itself possessed of what might have been regarded a munificent capital for all desirable purposes connected with the higher education. By a law of 1848 these persons served in each county and, afterwards, as State officials of school and university lands. This committee evidently had in view the peopling of the new State and not the higher education of the children of the people who might come. The appraisal of these lands at an average value of $2.78 per acre, $1.13 to $7.06 in different counties, was the first and well-nigh a fatal blow struck at the heart of the school—its financial basis. The board of valuation had not interested itself with the control of the fund. It was the old story of school lands sacrificed by a mismanagement that bordered on the edge of public plunder; the welfare of the parties and the highest interest of the Commonwealth sacrificed to the doubtful prosperity attendant on a rapid and indiscriminate population. A few half-hearted efforts of the legislature to resist this wholesale plunder were defeated by a popular opinion, which had not been trained to hold the idea of the higher education, but was filled with the greed for cheap land and the glory of a populous State.

The bulk of the university lands was sold at last for $3 per acre, and the sum of $150,000 was all that was realized from the 72 sections. The State of Michigan received $500,000 for a smaller grant, and a wise disposal of this great estate might have given to Wisconsin a much larger sum. A similar grant of 72 sections of saline lands, in 1848, was made, and as there were no such lands in Wisconsin, 72 additional sections were selected in 1854. But the noblest endowment is powerless before a legislature that has not risen to the comprehension of a university and is inflated with the ambition for an early and sensational progress.

The second location of 70 sections followed hard after the first, being sold for $3 per acre. As if this were not enough, the State invested the funds realized by the sale of the lands by loaning $500 to any one who would offer a mortgage on real estate. The secretary of state, treasurer, and attorney general were the board in this free and easy scheme, which was well described by the land commissioner of the State, in 1861, as "lending money to men they did not know, taking as security lands they never saw, with no better evidence of their value than the appraisal of two men of whom they knew nothing." Of course this fund "took wings and flew away," and when, in 1861, a more secure method of investment was attempted, an inroad had been made on the property, the extent of which no man was able to fathom. To complete the disorganization, the State loaned $40,000 to the regents of the university from the principal of the fund, to begin the work of the university buildings, in defiance of the fact that the grant was for the support of the university. By 1860 the income of the university had dwindled to $5,000 or $6,000 per year. Meanwhile, by the passage of the Agricultural College act by Congress in 1862, the State came in possession of 240,000 acres of public land.

It was not till 1866, according to the historians of the university, that a different spirit and policy in the people and the legislature laid the foundation of the present State University of Wisconsin.

The board of regents for a series of years had been engaged in working at the hopeless task of making educational "bricks without straw." Soon after the organization of the State government, an act of incorporation was passed and the control of the university vested in a board of regents, in addition to the president, chosen by the legislature, and authorized to elect a chancellor who should be the president of the board. In 1849 an attempt was made to act, although it seemed hopeless. Besides the primary lack of funds, there was no public opinion in the State on which to rely for favorable legislation or for a patronage of any public school of the higher sort. The different religious denominations had duly preempted the soil and were attracting all the student material. The people had taken one great step in the establishment of free elementary education, and were not interested in extending it to the upper story. Besides the exertions and privations attending the first years of the existence and rapid population of a new State, there was one black cloud rising on the Southern horizon and rapidly casting its baleful shadow over the entire North—the coming on of the great civil war. No State exceeded Wisconsin in its enthusiastic devotion to the national idea of "Liberty and Union." It was not remarkable, at a time so perilous, under circumstances so abnormal, that the people did not regard the great obligation of schooling the children as they certainly did in 1866, after the close of the war in favor of union on the basis of universal freedom.

In place of the university, the regents first established a preparatory school in the city of Madison, in a building given, free of rent, under the charge of Prof. John W. Sterling, the good genius of the institution through its period of trial and discouragement, no less than its final success, for thirty-four years. This faithful teacher began his work on a salary of $500, by teaching a group of boys according to the usual course of study in Eastern colleges, at a tuition fee of $20 per annum. A chancellor was soon elected, in the person of President John H. Lathrop, of the State University of Missouri, on a salary of $2,000 a year. A cabinet of natural history was projected and good progress made in its collections under the management of Mr. H. A. Tenney, of Madison.

The original plan of the university included four departments—1, science, literature, and art; 2, law; 3, medicine; 4, the teaching and practice of methods of elementary education. In January, 1850, Chancellor Lathrop was inaugurated, and his attention was especially directed to the fourth department—the training of teachers for the new common schools of the State. Arrangements for the appointment of six new professors were made, but the central work of the school went on under the control of the president, Professor Sterling, and a tutor. In 1850 the effort was made to establish the department of pedagogy, including women as well as men. But the State rebelled against this movement, and the prospects of the university were not flattering. An additional professor was appointed in 1851. The State refunded the corporation money appropriated for buildings, with an additional loan for the first erected. In 1855 a second building was provided for the normal department. Loan after loan for building and the general purposes of the institution only crippled the resources of the university, which now contained about fifty students. The burden was increased by the attempt to establish a department of agriculture and mechanics, and Prof. S. P. Lathrop was given the chairs of chemistry and natural history in 1854.

In 1856 a full corps of instructors was appointed, adding to the general chairs those of medicine, law, natural philosophy, etc. An attempt was made to place the normal department on its feet by the assignment of Prof. Daniel Reed, of the chairs of philosophy and English literature, to this additional work. Two courses

of lectures were the result of this movement, addressed to 18 and 28 students. Up to 1852 the institution had only 46 students, 66 in 1852–53, and in 1858–59, 243, with 8 graduates in each of the years 1859–60.

All this time the university was slowly making its way against the steady opposition of a large class of the people. The legislature had usurped the entire control, giving to the regents and board of visitors only a nominal authority, and was driving the institution through a perpetual deficiency to the verge of bankruptcy. The denominational clergy of all the sects insisted that the university funds should be used to sustain their own institutions. The usual undefined charges of mismanagement, from irresponsible sources, filled the air. The failure of the attempt to establish the great departments of law and medicine added to the discontent. An attempt at a complete reorganization of the university failed in the legislature by a margin so narrow that the regents were forced by popular opinion to adopt a policy of administration similar to the defeated bill. Among these changes were a curriculum more in accord with the elective and practical order of studies, the establishment of the normal department, and the admission of women to the entire university. The result of the reorganization was the resignation of Chancellor Lathrop and his subsequent displacement as professor, the regulation policy of casting a Jonah overboard to save the ship demanding him as the victim.

It was doubtless with the laudable intent of calling to the presidency of the university an eminent educator, wholly unconnected with its past history, that the Hon. Henry Barnard was elected chancellor and agent of the Normal School board to conduct teachers' institutes and deliver educational addresses.

The history of his brief administration of the university has already been told. He wisely avoided any active participation in the university affairs and gave himself, with his usual ardor and success, to the more grateful work of building up the common schools through the improvement of the teachers. His connection with the university and the State was terminated February 18, 1861.

Here we leave the University of Wisconsin during the period of the civil war. The firm and faithful hand at the helm meanwhile was Professor Sterling, dean of the faculty, who acted as the executive officer. Financial embarrassments crippled the resources of the institution and compelled the limitations of expenses to the lowest possible figure. A company of soldiers was quartered in the buildings in 1861. The entire class of 1864 was in the field and no commencement exercises were held. The attendance was reduced to 50 or 60.

Meanwhile the normal department was reorganized in 1863, under the charge of Prof. Charles H. Allen, of Massachusetts. Seventy-six young women put in an appearance, and the interest of the institution seems to have been largely centered in this new departure. The public opposition was stirred up anew by the admission of women not only to the classes in pedagogy, but to nearly all the opportunities of the university. The resignation of Professor Allen, in 1865, was followed by the appointment of ex-Superintendent J. L. Pickard, in 1866. The prospects of the institution were not sufficiently hopeful to warrant his acceptance of the office of chancellor, offered in 1865, and Professor Sterling held on as vice-chancellor until a new act of reorganization, in 1866, placed the institution for the first time on a solid basis. In 1867, under conditions that recalled the great expectations of the past, Dr. Paul A. Chadborne, then president of the Agricultural College of Massachusetts, at Amherst, was called to the chancellorship, which he filled until 1870. The record of this final reorganization and the accompanying success of the University of Wisconsin will best appear in connection with a continued history of the common-school system of the State after the close of the civil war.

IOWA.

The United States Commissioner of Education, Dr. William T. Harris, in the letter transmitting Circular of Information No. 6, 1893, of the United States Bureau of Education, to the Secretary of the Interior, entitled "Higher education in Iowa," by Leonard F. Parker, professor of history in Iowa College, writes:

Besides the local interest to which such a work appeals there is much in the educational history of Iowa which is instructive to all students and observers of educational progress, since within her limits there has appeared, from the time of the earliest settlements, a noteworthy zeal in founding institutions of learning and in providing instruction for all classes of people.

Indeed, were any well-informed American called to present one of the most convincing arguments in illustration of the American republican order of government and society he would not mistake if he selected the State of Iowa as the object lesson. The governor of the State, in 1860, indorsed the declaration of a former chief magistrate to this effect: "There are not probably 50,914 square miles in one body on the globe that can offer so many broad acres of unrivalled fertility and of such high adaptation for the support of life as the State of Iowa." Until the organization of the Territory in 1838 this vast and splendid estate was variously named. In 1804–1805, it was a portion of the district of Louisiana; of the Territory of Louisiana from 1805 until 1812; from 1812 to 1821 a part of the Territory of Missouri, and, after an interregnum as an unnamed wilderness, in 1833 open, by an arrangement with the Indian possessors, to white settlement; from 1834 to 1836 Iowa was a portion of Michigan and from 1836 to 1838 an annex to Wisconsin; from 1838 to 1846 it was first known as the Territory of Iowa. On December 28, 1846, Iowa was admitted as the twenty-ninth State into the Union, with a population of 102,388.

Under the guidance of the land companies immigration poured into the country like a flood from southern Ohio, Indiana, Illinois, and the northern border of the South; later from Pennsylvania, New England, New York, and northern Ohio, with a large contingent from the more substantial immigrating classes of Europe. From 1840 to 1850 the per cent of increase was 345 and from 1840 to 1860 1,465 per cent, when the new State contained 673,779 inhabitants of almost unmixed white American and European stock. In 1890 Iowa had risen to be one of the more prominent States of the Union, with a population of 2,000,000, and is still moving upon a tide of almost uninterrupted prosperity. With the exception of the Providential interruptions and backsets that are inevitable in a new country, where the most active young people of the world are running over each other in the pursuit of comfort and wealth, this Commonwealth has enjoyed a remarkable reputation for social respectability, peaceful development, and the high administrative ability of its public men. This great personal and political capacity has been shown more than once by its influence upon the ten new States of the Northwest beyond the Mississippi, besides the high character and influence of its representation at Washington.

That a people so thoroughly representative of the better elements of the whole country and the new life of the Republic should, from the first, have been deeply interested in education and, in their own best way, gone about helping themselves to it even before there could be a Territorial organization promised well for the future. It is only necessary to repeat that as soon as there were white people enough to be gathered under a roof there was a school. In 1824 Mr. Berryman Jennings seems to have been the pioneer pedagogue, with "a very large school district, extending to Canada on the north and to the Pacific Ocean on the west, where there are now some thirteen or more States and Territories;" Master Jennings presided over this vast wilderness in his little log schoolhouse near the pres-

ent site of Keokuk, and for a year directed the first "shooting of the young idea" in Iowa.

Before 1838, when the Territory first obtained its own place and name, there are said to have been no less than 40 teachers who taught school in Iowa, in a region now divided into nine of the present counties of the State. The log schoolhouse was the representative of civilization, set up where the settlers halted, and stood for not only the school, but the church and government, the building being used for all public purposes. The first frame schoolhouse in Iowa was built in 1840 and the first brick schoolhouse at the same place ten years later, 1850. In 1862 there were 893 log temples of science in Iowa, with a population of 674,000, whereas in 1854 half the schoolhouses had been of this sort. In 1890 only 30 were reported in the State. These schools were, at first, private ventures and the school buildings generally private property.

In 1835 the Territory of Michigan, of which Iowa was then a part, created the office of superintendent of common schools. But the distant back yard, the new Territory, was none the better for this visitation. Wisconsin, which succeeded Michigan as the nursing mother of Iowa, tried to do more, with more legislation, but with no settled result. In 1838 the legislature established, on paper, an ambitious scheme of "seven seminaries for both sexes, to teach science and literature," all of which turned out educational "castles in the air."

Four days after this effort the legislature voted to establish a college, with the learned and grotesque name of "The Philandrian," besides a manual-labor college at Davenport. This institution, "The Philandrian," was to be established in the town of Denmark, in Des Moines County. It was the private enterprise of a Scotch Presbyterian family from Illinois, which finally went to financial wreck by its zeal in establishing colleges and manual-labor schools. The charter provided for absolute religious freedom in teachers and students. The Leeper family sent to the East to secure 12 young men to establish as many academies as feeders to the Philandrian and the Davenport manual-labor colleges. But the whole scheme, like so many others conceived in the brain of unpractical philanthropy, came to nothing. The seminaries voted into existence by the Territorial legislature fared no better. Neither money nor men, students nor buildings responded to the call. "At that period there were not youth of both sexes of sufficient number and advancement to constitute a collegiate preparatory department or even a high school in all the Territory."

During the independent Territorial existence of Iowa, from 1838 to 1846, there was a decided effort to plant on the soil a system of education. The Territory was increasing in population, from 22,000 in 1838 to 102,000 in 1846, and its Territorial governors, for the day, manifested a commendable zeal in education. The first, Robert Lucas, was a friend of Samuel Lewis, first superintendent of public schools in Ohio, and from 1838 till 1840 had as private clerk Mr. Theodore S. Parvin, formerly an assistant of Superintendent Lewis. In his first message to the Territorial legislature, January, 1838, Governor Lucas urged the immediate establishment of "a well-digested system of common schools." He also recommended the township system, not for the first time, as is suggested, since both Connecticut and Massachusetts began and held on in that way for 100 years before they "fell from grace into the slough of despond" of the isolated district system. The legislature responded with a law which authorized the voters of every district (township) to tax not to exceed $10 for each person for a system of common-school instruction.

The second legislature enlarged the scope of the statute even to the creation of the office of superintendent of education, which was held for a year by Dr. William Reynolds. An inevitable reaction abolished this office and for several years the Territory waited for a more favorable state of affairs. Still, the larger towns

were moving. Burlington reported seven schools, one of a high grade, and all towns with a sufficient population seem to have acted for themselves without waiting for legislative aid and comfort. On the admission of the State into the Union, in 1846, there were 20,000 children of school age, 5 to 21, 400 school districts, and 100 schoolhouses. Seminaries and rising colleges, as usual in the new States, were rapidly extemporized on paper. During this period the new Commonwealth, following the example of New England 200 years before, established and supported common schools largely by private subscription.

The story of the founding and development of the common-school system in Iowa, with its accompanying institutions, the State university, normal school, and Agricultural College, is told in the circular of information referred to above, by Professor Parker, after a fashion that renders any elaborate treatment of this period almost an impertinence. Although by the title. an essay on "The higher education in Iowa," the author wisely builds up from the foundations in the earliest essays at school keeping in the wilderness, and with admirable conciseness and management of statistics condenses the voluminous educational literature of the period into 50 pages of a most entertaining and deeply interesting educational and historical treatise. It will be all the more unnecessary that the author of the present record should attempt to repeat the events of the period of sixteen years included in this chapter, for until 1858, practically until the opening of the civil war, the State was really experimenting with school systems and methods, and little was accomplished save the demonstration that several ambitious projects and excellent ideas were advanced beyond the popular educational spirit and public ability. It was not until the close of the war period that had summoned the patriotic sons of Iowa to battle for the salvation of the Union that the present system of popular education was fairly organized and committed to the charge of the whole people, a charge kept with a wisdom and persistence in themselves the best argument that "government of the people, by the people, for the people, shall not perish from the earth." In the constitution of 1846 the framers struck a high note of educational ambition. This remarkable document as far as it relates to education is here quoted in full:

FROM THE CONSTITUTION OF IOWA, DECEMBER 28, 1846.

EDUCATION AND THE SCHOOLS.

SEC. 1. The educational interest of the State, to include common schools and other educational institutions, shall be under the management of a board of education, which shall consist of the lieutenant-governor, who shall be the presiding officer of the board, and have the casting vote in case of a tie, and one member to be elected from each judicial district of the State.

SEC. 2. No person shall be eligible as a member of said board who shall not have attained the age of twenty-five years and been one year a citizen of the State.

SEC. 3. One member of said board shall be chosen by the qualified electors of each district, and shall hold the office for the term of four years, and until his successor is elected and qualified. After the first election under this constitution the board shall be divided, as nearly as practicable, into two equal classes, and the seats of the first class shall be vacated after the expiration of two years; and one-half of the board shall be chosen every two years thereafter.

SEC. 4. The first session of the board of education shall be held at the seat of government on the first Monday of December after their election, after which the general assembly may fix the time and place of meeting.

SEC. 5. The session of the board shall be limited to twenty days, and but one session shall be held in any one year, except on extraordinary occasions, when, upon the recommendation of two-thirds of the board, the governor may order a special session.

SEC. 6. The board of education shall appoint a secretary, who shall be the executive officer of the board, and perform such duties as may be imposed upon him by the board and laws of the State. They shall keep a journal of their pro-

ceedings, which shall be published and distributed in the same manner as the journals of the general assembly.

SEC. 7. All rules and regulations made by the board shall be published and distributed to the several counties, townships, and school districts, as may be provided for by the board, and when so passed, published, and distributed they shall have the force and effect of law.

SEC. 8. The board of education shall have full power and authority to legislate and make all needful rules and regulations in relation to common schools and other educational institutions that are instituted to receive aid from the school or university fund of this State; but all acts, rules, and regulations of said board may be altered, amended, or repealed by the general assembly, and when so altered, amended, or repealed they shall not be reenacted by the board of education.

SEC. 9. The governor of the State shall be ex officio a member of said board.

SEC. 10. The board shall have power to levy taxes or make appropriations of money. Their contingent expenses shall be provided for by the general assembly.

SEC. 11. The State university shall be established at one place, without branches at any other place, and the university fund shall be applied to that institution, and no other.

SEC. 12. The board of education shall provide for the education of all the youths of the State through a system of common schools: and such schools shall be organized and kept in each school district at least three months in each year. Any district failing for two consecutive years to organize and keep up a school may be deprived of its portion of the school fund.

SEC. 13. The members of the board of education shall receive the same per diem during the time of their session, and mileage going to and returning therefrom, as members of the general assembly.

SEC. 14. A majority of the board shall constitute a quorum for transaction of business; but no rule, regulation, or law for the regulation and government of common schools or other educational institutions shall pass without the concurrence of a majority of all members of the board, which shall be expressed by the yeas and nays on the final passage. The style of all acts of the board shall be: "Be it enacted by the board of education of the State of Iowa."

SEC. 15. At any time after the year 1863, the general assembly shall have power to abolish or reorganize said board of education, and provide for the educational interests of the State in any other manner that to them shall seem best and proper.

SECOND. SCHOOL FUNDS AND SCHOOL LANDS.

SEC. 1. The educational and school funds and lands shall be under the control and management of the general assembly of this State.

SEC. 2. The university lands, and the proceeds thereof, and all moneys belonging to said fund shall be a permanent fund for the sole use of the State university. The interest arising from the same shall be annually appropriated for the support and benefit of said university.

SEC. 3. The general assembly shall encourage, by all suitable means, the promotion of intellectual, scientific, moral, and agricultural improvements. The proceeds of all lands that have been or hereafter may be, granted by the United States to this State for the support of schools, which shall hereafter be sold or disposed of, and the five hundred thousand acres of land granted to the new State under an act of Congress, distributing the proceeds of the public lands, among the several States of the Union, approved in the year of our Lord one thousand eight hundred and forty-one, and all estates of deceased persons who may have died without leaving a will or heir, and also such per cent as may have been granted by Congress, on the sale of lands in this State, shall be and remain a perpetual fund, the interest of which, together with all rents of the unsold lands, and such other means as the general assembly may provide, shall be inviolably appropriated to the support of common schools throughout the State.

SEC. 4. The money which may have been or shall be paid by persons as an equivalent for exemption from military duty, and the clear proceeds of all fines collected in the several counties in which such sum is paid, or fine collected among the several school districts of said counties, in proportion to the number of youths subject to enumeration in such districts, to the support of common schools, or the establishment of libraries, as the board of education shall from time to time provide.

SEC. 5. The general assembly shall take measures for the protection, improvement, or other disposition of such lands as have been, or may hereafter be,

reserved or granted by the United States, or any person or persons, to this State, for the use of the university, and the funds accruing from the rents or sale of such lands, or from any other source for the purpose aforesaid, shall be and remain a permanent fund, the interest of which shall be applied to the support of the university, for the promotion of literature, the arts and sciences, as may be authorized by the terms of such grant. And it shall be the duty of the general assembly, as soon as may be, to provide effectual means for the improvement and permanent security of the funds of said university.

SEC. 6. The financial agents of school funds shall be the same that by law receive and control the State and county revenue for other civil purposes, under such regulations as may be provided by law.

SEC. 7. The money subject to the support and maintenance of common schools shall be distributed to the districts, in proportion to the number of youths between the ages of 5 and 21 years, in such manner as may be provided by the general assembly.

The educational provisions of the constitution of Iowa, adopted and ratified in 1857, are the same as the foregoing, except that the verbiage is in a few instances slightly changed without materially changing the sense.

It will be seen that the State board of education of Iowa was made practically a legislature for school purposes, subject to the constitution and the law.

It will be seen that here it was attempted, probably, for the only time in the history of education in this Republic, to establish a proper educational legislature within the political legislature of the State—a board of education, elected by the people, which was authorized to enact laws for the establishment, support, and management of all classes of public schools, from the prairie district to the State University—to impose taxes and to administer, with no interference, save the veto power reserved to the State government, until the year 1864. The board of education of the State of Massachusetts, established in 1837, made illustrious by its first great secretary, Horace Mann, and the names of its distinguished members, had no similar power intrusted to it. It was only an executive body, appointed by the governor, "with the consent of the council," to administer in a very limited way the small amount of State aid and control that the people of Massachusetts had ever intrusted to their State educational officials. That this arrangement may have been, on the whole, the best for a new State like Iowa, where 100,000 people were scattered over the area of a European kingdom, a people that represented all sections of the country and every civilized land, too much absorbed in getting a personal living and placing their new Commonwealth firmly on its legs to think or act in any very large way for the schooling of the children, is quite possible. The scheme did succeed in securing the election to this board of a body of remarkable men, who, in sympathy with a generous ideal of popular education, brought the State up to the year 1858, when a new constitution and school law gave substance to an all-out-doors condition of affairs. In 1864 this peculiar arrangement was repealed, and the State, for the last thirty years, has gone on after the fashion of an ordinary American commonwealth.

The new constitution was followed by the enactment of the first general school law of the State. This statute, passed in 1847, swept aside all previous enactments, which only represented the notions of the successive legislatures of the different Territories to which Iowa had been attached. It provided for the election of a State superintendent of public instruction, and the general organization and support of district schools in accordance with the provisions of the constitution. The school board does not seem to have been recognized or provided for. The first State superintendent was one of the most distinguished of the early settlers of Iowa and the Northwest.

Mr. James Harlan, at the age of 25, was the people's first choice. He held the office only three months—his election having been declared "invalid" by the courts. But he improved the time with all diligence in awakening the people and inaugurating the movement for the establishment of a State school fund from the

magnificent gift of the national public lands, of which no disposition had yet been made.

His successor from 1848 to 1854 was Mr. Thomas Hart Benton, jr., a nephew of the famous Missouri statesman of that name. As superintendent of public instruction, he held the office for six years, four years as secretary of the board of education. By the ruling of the courts the office of superintendent of public instruction had been merged in that of the secretary of the board of education until 1864. Superintendent Benton was a powerful and discreet leader of the educational public, and he has left his name deeply impressed on the educational history of the State. In 1849 a revised school law was passed which in a more detailed and decisive way defined the obligations of the educational department and provided for an organized system of popular education. Superintendent Benton caused a pamphlet edition of the school laws to be published of 140 pages with notes and comments. He traveled extensively among the people at a time when traveling was the most difficult part of the duties of a public man. He defended the right of the people to the reading of the Bible in the schools on the American ground that the Bible is the handbook of common morality in all civilized lands but with no theological or ecclesiastical intent. He urged permanency of structure in the new schoolhouses that were rising in the State. He was one of the first of the Western superintendents to favor drawing as a common-school study, and collected a valuable library in the office of the superintendent. He was undeniably the father of the progressive educational policy of the new State. Under his administration in her 35 counties Iowa had 1,860 school districts, 50,182 children from 5 to 21, 504 schools attended by 17,350 pupils, supported at an expense of $25,000. There were 580 teachers, the men being paid $14.83 and the women $7.64 per month. Neither a man nor woman of them was reported as hailing from Iowa, many coming from the distant Central and Eastern States. The schools were still partly supported by a rate bill, and negroes were entirely excluded from any enjoyment of the system of public instruction.

Happily for the cause of education the office of governor of the State was held by another of the men of national fame which Iowa has given to the Union—James W. Grimes. In his first message he strikes the keynote of the American system of public instruction in the declaration: "Property is the only legitimate subject of taxation. It has its duties as well as its rights. It needs the conservative influence of education, and should be made to pay for its own protection." He urged the abolition of the rate bill on the ground that it discriminated against the children of the poorer parents. This vigorous beginning was followed by the eminently statesmanlike recommendation to the legislature, in 1856, that "three competent persons be selected to revise all the laws relating to schools and school lands." The governor appointed Horace Mann, then president of Antioch College, Ohio; Amos Deane, of Albany, N. Y., for a brief period president of the Iowa State University, and F. W. Bissell, of Dubuque, as commissioners. But before they had reported the legislature, by statute, authorized the establishment of graded schools, with a high-school department, to be supported by a tax not exceeding 5 mills on the dollar, supplemented by a tuition bill.

The fourth superintendent of public instruction, the third having been removed for mismanagement of the school lands, was Mr. Maturin L. Fisher, who held the post from 1857 till the office was merged in that of secretary of the board of education in 1858. The State school fund had now increased to $2,300,543.65, and it was believed it would ultimately reach $5,000,000. There were 84 organized counties, of which 26 appeared in the report of the State superintendent. It was evident that the services of a board of commissioners were required to prepare a system which should be able to tie up the all-out-doors style of school keeping that was going on through the State. With half a million people and all the

world coming in, 175,000 children and youth between 5 and 21, there were but 59,600 inside the 1,330 schoolhouses, half built of logs. There was practically no examination of teachers. According to the report of Superintendent Fisher, "less than half the children are in the schools, and educational affairs are in a very unsatisfactory state." The schools were supported at a cost of $364,100, of which $111,839 was from the income of the State school fund. The total amount supplied by the State was $210,000. It was evidently not a better disposition but a more vigorous administration and a consolidation of the whole system that was "the one thing needful."

Meanwhile, the effort at the building up of the higher education had not been entirely neglected. An increasing number of the larger towns had graded their schools, and were establishing classes that, under the name of "high school departments," could be intrusted with the important duty of training teachers for the increasing number of common schools, and the charter of the State University contained a provision for a department of pedagogics. As early as 1849, the teachers had begun this work by holding the first institute, at Dubuque, conducted by ex-superintendent of Wisconsin, Dr. J. L. Pickard. Superintendent Benton warmly urged the subsidizing of these teachers' institutes upon the legislature. In 1849 there were but 600 teachers in the State, working on salaries of $14 and $8 per month. A remarkable group of educators is mentioned, who wrought with great fidelity and success in this field. In 1857 this arrangement was enlarged to the normal institute, in the direction toward the elaborate organization which it has become in the present effective system of normal institutes in Iowa, of several weeks' duration—a proper seminary of instruction, methods, and practice.

The State was fated to pass through the experience of New York and Ohio in long experimenting with private, academical, and collegiate normal departments, and a chair of pedagogy in the State University. It was thirty years from the establishment of the common-school system before the people of Iowa learned that a work so important as the training of common-school teachers can not be safely left to the capricious will and variable opinions of private and denominational academies and colleges, or that a chair in pedagogics in a State university is not a fit substitute for a professional school of instruction. An attempt had been made, in 1849, to establish normal schools under the statute establishing a university. The State was districted into three sections, and three normal schools, on paper, were set up with a grant of $500, salary for the superintendent. After a somewhat languishing life of these schools which, at best, could be only of the grade of a second-class academy, the attempt was given up.

The national grant of public lands for the support of a University to Iowa, was 46,080 acres. These lands were at first badly located—not in the most valuable situations in the great prairie regions. A law was passed establishing a central college and two branches, the former at Iowa City, the original capital of the State, to be housed in the abandoned State buildings. In 1859 the university fund had reached the sum of $110,582, and a fortunate sale of school lands in 1860 increased it by $29,571. The legislature worried over the preposterous scheme of establishing branches of the university at a number of collegiate districts, as at present in Georgia. But the attempt failed, and in 1849 Iowa City was selected, the State buildings left by the new location of the State capital being assigned for the use of the institution. An attempt to carry out the original idea resulted in the establishment, on paper, of two branches at Fairfield and Dubuque.

With this arrangement of a six-in-hand-university team—the central school with its two branches and three normal schools, all under university control, when the State had not the material for one proper group of actual college students—it is not remarkable that success was delayed. In 1855 the school was opened by

the board of regents and continued sixteen weeks. After several unsuccessful attempts to obtain a president for the complete university, Hon. Amos Deane, president of the Albany (N. Y.) Law School, was induced to accept, and, for a brief period, made annual visits to the State in the capacity of chancellor. Six gentlemen were named as members of the university faculty. The organization was of a flexible type, contemplating the education of a child of 12, if a girl, and 14 if a boy, through a preparatory department to an elective course of study for a variety of degrees. The result was a school, in 1856, described by the historian of the Higher Education in Iowa, Professor Parker, then a student, as "a State university with 65 children in the common branches, and a total attendance of 183 students; 83 gentlemen, and 41 ladies—65 in preparatory and 40 in the normal department." As late as 1857–58, there were but 107 pupils in the school, of whom only about 6 per cent were from outside Johnson County, 12 per cent beyond Iowa City. It was recognized by the public as "The High School of Johnson County." Chancellor Deane seemed to have grasped the situation and advised the closing of the school till better times, or a better disposition in the legislature to furnish supplies, and followed his advice by resigning his own position in 1858. His best work had been done in his labors on the committee, with Horace Mann, in framing a system of public-school education for the new State.

The legislature in 1857 appropriated $13,000 for repairs and a boarding hall. But, with no proper fund to support the university, it was the part of wisdom to close the doors, except to the normal department, from 1858 to 1860. The State had provided 36 scholarships for as many students who, selected from the high schools of the State, were expected to teach as normal graduates. A new board of trustees were chosen, and Prof. D. Franklin Wills was intrusted with the duties of a professorship. There were only $1,200 available for financial support. Still an enthusiastic body of students gathered at the opening, and with the help of a lady assistant, the good work went on. There were 90 students and 6 graduates in 1859–60. Prof. Silas Totten, D. D., L. L. D., formerly president of Trinity College, Hartford, Conn., was called to the presidency in 1860. But the final establishment of the University of Iowa was made possible by the Congressional grant of public lands for agricultural and mechanical colleges in 1862. An attempt had already been made to establish an agricultural school in the State, but this, with all similar endeavors at a premature movement for the higher education, had come to little.

The first notable revival of the common school in Iowa dates from the administration of Governor James W. Grimes. He secured the appointment of two of the foremost educators of the country, Horace Mann and Amos Deane, both at the time in Western educational service, one as president of Antioch College, Ohio, and the other of the new State University of Iowa, to draw up a plan for the education of the youth of the State. The work was all done by these men, the third member of the commission, Hon. Mr. Bissell, of Dubuque, not serving. It was presented in the form of a school law, with comments and explanations. It included the township plan of districting; a county superintendency; free elementary schools for all the people, including the negroes, and the division of the system into graded, high, and normal schools, up to the State university. The commissioners recommended the original idea of Mr. Jefferson, the establishment of free county high schools, called by the Virginia statesman colleges. It is doubtful if Horace Mann, in all his splendid career, ever did a more valuable work than giving his heart and hand to the preparation of a system for training the youth of what has become one of the most illustrious—if not, indeed, the model one of the—States of our Republic. Certainly Amos Deane contributed largely to the "higher civilization," of which he endeavored to write the history, by his cooperation with his eminent compeer. The governor was in hearty sympathy with the idea of educa-

tion there presented. The chairman of the committee on education in the State senate was an intimate friend of Horace Mann and contributed greatly to the adoption of the ideas of the report in the new school law of 1858.

The State constitution of 1857 seems to have repeated, or, perhaps, first created, the original provision for the legislative board of education; independent, and of final authority, with the exception of the governor's veto power; and having control of the educational funds of the State, with the proviso that, in 1864, the people should have the opportunity of deciding on its continuance. The new school law of 1858 contained this provision. But the legislature, apparently forgetting that in this respect its legislative occupation was gone, enacted an elaborate school law, a portion of which was declared unconstitutional, and it all went back to the board of education for rectification. This was a hindrance at the outset. But the board confirmed several of the most important recommendations of the three commissioners. This board held three annual meetings which were reported as a basis of action to the legislature. Its wisdom was shown in the appointment of Mr. Thomas H. Benton, jr., to a second term of State superintendency of instruction, under the title of "secretary of the State board of education." His office held on through the existence of the State board in this capacity, which terminated in 1863 with the reestablishment of the office of State superintendent of public instruction.

The passage of the law of 1858 was a challenge to the best public spirit in the State. It demanded new effort in the direction of raising school funds. Superintendent Fisher had estimated that no less than $500,000 a year would be required to work the new scheme with success. The office of county superintendent for the examination of teachers, and the general supervision of the schools, was a new departure and its operation let in "a great wakening light" upon the dark places of pedagogic ignorance and failure. Its fit administration demanded a wisdom and tact hardly to be expected of the 8,000 officials created by it. In the early years of its operation the country was plunged into a civil war that absorbed all the energy, self-sacrifice, and even property of the patriotic people for the preservation of national unity and universal freedom. Probably no greater effort for the defense of the schools against such an overwhelming flood could have been demanded, than was found in a strong body of able and competent men directly responsible to the people, protecting the schools from the agitations and variations of public opinion inevitable to this perilous season of four years. When Secretary Benton laid down his office in the election of 1863, the crisis had passed, and henceforth the system went on "in full tide of successful experiment." The county superintendency seems to have been more successfully managed than in some of the States; in fact, in too many of them it has almost become the most formidable obstacle to improvement. The superintendents were regarded by the people as a strong body of men, and their first meeting in convention at Iowa City in 1858 was declared one of the most important occasions in the early educational history of the State. This high pitch seems to have been maintained, and we hear little but good of the working of the county superintendency system in Iowa.

The experiment of the county high school, except in one instance, seems to have failed, and this plan was dropped from the public-school system at an early date. It probably seemed too much like educating the superior children of a county at "arm's length," and in due course of time the more practical scheme of the city and local free high school came in.

Already, in 1860, several denominational colleges had been established in Iowa and were to a greater or less degree in successful operation.

The Baptists had established Burlington University in 1853 and the Central University of Iowa, at Pella, in 1853, and later, in 1865, Des Moines College, at Des Moines. The Christian denomination founded Oskaloosa College in 1858–1861.

Two colleges had been sustained by the Congregationalists. Iowa College was one of the earliest of this class of institutions, having been founded as early as 1843 by a body of theological students from Andover, Mass., first at Davenport and afterwards at Grinnell. President George F. Magoun assumed the presidency in 1862 and held it till 1884, being one of the most notable of the denominational college presidents of the Northwest. Tabor College was a child of the agitation that shook all the churches on the eve of the civil war, and, unlike the majority of institutions of learning that have been thrown up by great popular excitements, exists in a prosperous condition at the present time. In 1859 the Protestant Episcopal body, under the religious leadership of Bishop Perry, established Griswold College at Davenport.

The Methodists, during the past fifty years one of the most persistent and successful educational churches in the land, established Cornell College, organized as Iowa Conference Seminary in 1853, but reconstructed under its present title in 1857. Iowa Wesleyan University dates from 1855. Simpson College was the child of a movement in 1860. Upper Iowa University also was founded by the same religious body. The Presbyterians "set up their Ebenezer" at Cedar Rapids in 1851, at Coe College, and Lenox began as a collegiate institute in 1856. Parsons College, at Fairfield, was provided for in the will of Lewis B. Parsons in 1855, although not put in operation till a later period.

The United Brethren in 1855 planted Washington College at Muscatine. By 1853 Amity College was founded on an undenominational basis at College Springs.

All these institutions, with many others of the academical sort, were active competitors with the State university for the patronage of the youth of the State, and doubtless postponed for several years the permanent establishment of that institution. Some efforts have been made, especially by Bishop Perry, of the Protestant Episcopal Church, at a union of all colleges with the State university, which would be used chiefly as a university body for examinations and the conferring of degrees. But this plan, although frequently mentioned in the Northwest where the State universities have won their present position through a long contest with private and denominational institutions, has not yet been adopted.

In 1860 a "posting of the educational books" of the new State of Iowa showed a gratifying result of the early and persistent effort of the previous fourteen years of common-school experimenting. There were then 1,013 district townships with 4,656 school districts, 4,929 ungraded, and a large number of graded schools; in average session for three or four months in the year, instructed by 6,374 teachers, receiving $23 and $15 per month. The State had a population of more than 600,000, of whom 245,000 were between the ages of 5 and 21. One hundred and sixty-seven thousand were enrolled, and 77,000 were in average attendance instructed at a cost of $1.06 per month. Of 2,620 schoolhouses, more than half were frame, 220 of brick, 65 of stone, and 844 of logs, valued at $1,206,340. Thirty-two teachers' institutes were held in the State in 1860. All this was done at the cost of $656,000; on the average attendance, more than $8 per capita. The annual income of the State school fund was $142,000.

With this great record of successful achievement at the end of a good fight of fourteen years, we leave the interesting topic of the development of the common-school system in Iowa up to the opening of the civil war. The even more remarkable development of education in the Commonwealth during the past generation of thirty-seven years belongs to the history of the common-school system of the Northwest since the close of that memorable conflict.

MINNESOTA.

The romantic history of the immense wilderness now known as the great Commonwealth of Minnesota practically begins with the year 1689, when the adventurer Perot erected a cross, placed thereon the arms of France, and declared the country a portion of the vast domain of Louisiana. Only a few years before, Hennepin, Du Luth, and other enterprising members of several of the great Catholic religious orders had pushed their way up the Mississippi River, and built a fort on the western shore of Lake Pepin. Nearly one hundred years later—1763—the Territory of Wisconsin and a portion of Minnesota were ceded by France to England. But it was not until the year 1800 that the Government of the United States actually came in possession of the region by the operation of Jay's treaty, which closed the British occupation. By the purchase of Louisiana from Napoleon in 1803, what is now Minnesota, Arkansas, Missouri, and Iowa became the Territory of North Louisiana. From this time till 1849 Minnesota was, in turn, a portion of the Territories of Indiana, Michigan, and Wisconsin. Although a bill for the organization of the Territory of Minnesota was offered to Congress in 1846, it was not till 1849 that it appeared as a new candidate for the Territorial preparatory school of American statehood. In that year Hon. Alexander Ramsey appeared as the first governor of the Territory. Within another year St. Paul was designated as the capital, the legislature and courts were set up, and the first newspaper, The Pioneer, was established by Mr. Goodhue, a graduate of Amherst College, Massachusetts, who "hove in sight" nine days after the founding of the Territory, with printing press, paper, and type, and inaugurated this great agency of education in the far-off new land.

As late as 1846 the Territory is described as "little better than a wilderness;" best known by the romantic stories of its possibilities as a new Western wonder of the world. In its broad expanse was found the source of the three great rivers—the Mississippi, St. Lawrence, and the Red River of the North—flowing to the Gulf of Mexico, the Atlantic Ocean, and Hudson Bay. The geographer Maury, in an early visit, celebrated "The steel-blue sky, set with diamonds and sparkling with brilliants, and the sublimity of the small hours of the night." The marvelous wealth of waters in its myriad lakes suggested to some of its early discoverers, the name "Undine;" and the remarkable fertility of the lands, with the romance of the Dakota Indians (misnamed Sioux), added to the interest and awakened the imagination of the East and the Old World. In 1848 the Territory still "seemed a wilderness." The white settlers hugged the picturesque shores of the "Father of Waters," although the Territory was named from one of its tributaries, the Minnesota. In 1849 the white population was estimated at 5,000. The first legislature organized nine counties, and American civilization, under the leadership of a remarkable group of men, including Ramsey, Sibley, Rice, and Slater, representing every division of the Union, rose up in its usual attitude beyond the Alleghenies, "claiming the earth."

By 1858 the lusty infant had grown to the stature of a new American Commonwealth, with a population of 136,464 and all the agencies of the American system of universal education on the ground. Up to the formation of the Territory, in 1849, Minnesota had no educational record that would claim the interest of the historian of the common school. Whatever may have been done by the devoted members of the Jesuit and other Catholic explorers of the country, by the British occupants in 1736, or by the wandering companies which succeeded to their function of irregular administration, is only a matter of record in the personal journals and letters and the public documents by which their writers maintained their connection with the mother country.

But the first session of the Territorial legislature, in 1849, was favored with an

elaborate report of the committee on education, prepared by Hon. N. McLeod, and petitions were presented to Congress for immediate action in the usual bestowal of school lands. The Territories of Oregon and Minnesota were especially favored by the new policy of the gift of a double portion of the public domain—the sixteenth and thirty-sixth sections of every township. There were already a few small schools in St. Paul and St. Anthony, of the private and parochial sort, and St. Anthony reports the possession of a library. The Swedish novelist, Fredreika Bremer, whose very readable books were then translated and widely read in the Eastern States, visited Minnesota in 1850, and reports in her usual enthusiastic vein. By act of Congress the Territory was permitted to lease its school lands four years before sale, thus avoiding the great waste of this sacred public domain that had occurred in some of the older States of the Northwest.

In 1852 the Territorial superintendent of public instruction made a report. It is significant that he insists on the legal prevention of common-school districts giving educational degrees. He enlarges on the defects of the dismal barracks that figured as schoolhouses, and recommends Dr. Henry Barnard's treatise on "School Architecture" as a guide to reform. He suggests that every country district schoolhouse should be located in the center of a lot of at least one acre, and draws a pleasing picture of a crowd of happy children breaking loose from the schoolhouse door and "letting off steam" through the usual juvenile riot on the school-grounds. There were three public schools in St. Paul, two in St. Anthony, and half a dozen besides in the Territory. At once the "burning question" that "never will down" appeared in a plea from several of the larger settlements of the State that public subsidies should be given to the church parochial schools of the French Catholic population. But, although recommended by high political authorities, and even legislative indorsement, the proposition was rejected by a vote of two to one, and the Territory of Minnesota began her great career of common-school education, not to be excelled by any of the group of Commonwealths of the new Northwest and the later States of the mountain and Pacific region. But the legislature of the Territory, in its new zeal for education, seems to have gone beyond the ability or disposition of the people to furnish the "sinews of war." In 1857 the Territory, by permission of Congress, was empowered to form a State constitution, and, after a sharp contention between the two political parties then contesting the administration of national affairs, a compromise was effected, and, in 1858, the State was admitted to the Union by the almost unanimous consent of the powers at Washington. The first constitution contains the following provisions for the establishment and support of a system of public education which, with a few amendments of detail, still remains the fundamental educational law of Minnesota:

FROM THE CONSTITUTION OF MINNESOTA, MAY 11, 1858.

ARTICLE VIII.—SCHOOL FUNDS—EDUCATION AND SCIENCE.

SEC. 1. The stability of a republican form of government depending mainly upon the intelligence of the people, it shall be the duty of the legislature to establish a general and uniform system of public schools.

SEC. 2. The proceeds of such lands as are, or hereafter may be, granted by the United States for the use of schools within each township in this State, shall remain a perpetual school fund to the State, and not more than one-third of said lands may be sold in two years, one-third in five years, and one-third in ten years; but the lands of the greatest valuation shall be sold first: *Provided*, That no portion of the said lands shall be sold otherwise than at public sale. The principal of all funds arising from sales, or other disposition of lands, or other property, granted or intrusted to this State, in each township for educational purposes, shall forever be preserved inviolate and undiminished. And the income arising from the lease or sale of said school lands shall be distributed to the different

townships throughout the State, in proportion to the number of scholars in each township between the ages of 5 and 21 years, and shall be faithfully applied to the specific objects of the original grants or appropriation.

SEC. 3. The legislature shall make such provisions, by taxation or otherwise, as with the income arising from the school fund will secure a thorough and efficient system of public schools in each township in the State.

SEC. 4. The location of the University of Minnesota, as established by existing laws, is hereby confirmed, and said institution is hereby declared to be the University of Minnesota. All the rights, immunities, franchises, and endowments heretofore granted or conferred are hereby perpetuated unto the said university, and all lands which may be granted hereafter by Congress, or other donations, for said university purposes, shall vest in the institution referred to in this section.

To section 2 there was added by amendment in 1875 the following:

ART. VIII, SEC. 2, *added*. Suitable laws shall be enacted by the legislature for the safe investment of the principal of all funds which have heretofore arisen, or which may hereafter arise, from the sale or other disposition of such lands, or the income from such lands occurring in any manner before the sale or disposition thereof, in interest-bearing bonds of the United States, or of the State of Minnesota, issued after the year 1860, or of such other State as the legislature may, by law, from time to time direct.

The first report of the State superintendent of public instruction, Mr. Edward D. Neill, in 1861, deals largely with the exposure of the mistakes of the unduly zealous educational policy during the Territorial period of nine years. In 1851 the State University had been chartered. The board of university regents seems to have taken things into its own hands, and had erected a huge stone college building, containing "50 rooms without windows," involving the university fund in a debt of $80,000, while, by blundering legislative action, the fund itself had been imperiled.

The university had been organized with a department of law, medicine, and pedagogy, and an early movement had been made to establish a State normal school. The city of Winona had furnished a hall in 1859. Sixty-one pupils had appeared in the second term, and $5,000 were expended—$1,500 on the salary of the principal and $500 for his assistants. The Territorial school law had been revised and the statute of 1861 appears in the report of the superintendent, with stringent comments on its defects. The new State, as usual, had been too easily persuaded into the habit of giving a charter to every school that assumed the title of "college." The superintendent vigorously protests against this policy and declares that "there is not one in operation in the State that in any respect is superior to the high schools and academies of the older States." He proposes that no college charter shall be given to any school that has not an endowment for the support of two professors, and limits its age of admission at least to 14.

The revised school law contains these general provisions: 1. The commissioners of each county may impose a tax of one-fourth of 1 per cent on the ad valorem of valuation for the payment of the salaries of common-school teachers. 2. Twenty-five per cent of all revenues from liquor licenses, and certain legal penalties, shall be appropriated to the same purpose. 3. The consent of two of the three trustees elected by the school districts constitutes a working board. 4. Every tax-paying male citizen is declared a voter in district school elections. Three trustees were to be elected for one year, who are authorized to determine the site for schoolhouses, and levy a tax for school buildings not to exceed $300 without the consent of the township supervisors. A tax of $20 a year could be imposed for the furnishing of school buildings, apparatus, library, etc. 5. The county commissioners were authorized to divide the school money among the districts in proportion to the number of persons of school age—4 to 21. 6. The people of two contiguous districts could unite in an arrangement for a grammar school. 7. The township superintendent of schools was chosen at town meeting, and authorized to divide the township into school districts, examine teachers, and visit the schools.

The State superintendent in his report reveals the vital weakness of the school law, which he declares the attempt to apply legislation only adapted to a wilderness to the needs of a rapidly growing State. He earnestly advocates the substitution of a county superintendency for the present ineffectual method of administration by a board of county commissioners, some of whom, he asserts, could not obtain a certificate as teacher of a common school. Even the appointment of one competent commissioner, with power to act, would be a step forward. He exposes the radical weakness of the school system in the fact that it provides for no vital communication in the matter of administration between the local and State authorities. He urges again the improvement of schoolhouses.

In 1864 Superintendent Blakeley emphasizes the declarations of Superintendent Neill, and comments on the defects of the additional legislation of 1862 that simply provides for a board of county school examiners of teachers, five in number, with no duties except the examination and certification of teachers, and urges again the establishment of a proper county superintendency. His own opinion is fortified by copious testimony from distinguished school authorities of several States. He declares: "There is no accountability to a higher authority on the part of any official from district school trustee to State superintendent." In fact, a teacher armed with a certificate obtained from an examining board, the majority of whom were themselves incompetent to teach a country district school, could defy the entire educational authorities of the State. The provision for the visitation of schools the superintendent pronounces a farce. "The standard of qualification for teachers is lamentably low." There was no method in operation for training teachers, the Normal School at Winona having been suspended by the neglect of the legislature to supply funds, and the teachers' institute not yet on the ground. In 1864 there were forty counties in the State.

But despite these drawbacks from imperfect organization and the preoccupation of the people by the civil war, in which Minnesota was conspicuous for patriotic spirit and the "material aid" of men and money, the educational car had moved on, as by its own inherent motion, with accumulating velocity from year to year. In 1860 372 school districts reported. In 1862 the number had increased to 1,072, and in 1864 to 1,254. In 1863 there were 64,819 persons of school age (4 to 21) in the State, with 22,903 in school attendance. In 1864 $75,000 was appropriated from the income of the State school fund (23 cents per capita) for the entire school population.

By 1867 the new State of Minnesota, relieved from the great labors and anxieties of the civil war, bounded into the field of educational progress with a will. Of 51 counties 50 reported to the central authorities. There were 2,207 school districts, of which 2,035 had "reported progress." Of 114,421 children and youth of school age, 65,807 were in attendance on school, with an average session of four months. There were 749 male and 1,836 female teachers, receiving an average salary of $34.65 and $22.28 per month. The State was expending $254,986.76 for the salaries of teachers. There were 1,406 schoolhouses. Of the entire expenditure, $736,532.67, the State contributed $167,863.50, and the districts raised from local taxes $225,672.19. Graded schools were appearing in all the considerable towns. The State normal school at Winona had been reestablished, with the already distinguished educator W. M. Phelps as principal, and 8 assistants, 87 students, and a model school of 244, the normal pupils representing 20 different counties of the State. Since 1864 127 had been graduated. A permanent building was in process of erection, at a cost of $80,000, of which the people of Winona contributed $20,000. Teachers' institutes were held in 22 counties. The State University buildings were repaired in 1867. The private schools of the State still contained some 5,000 pupils. The system of county superintendency had been firmly established. The State school fund already had reached the sum of

$1,333,161.69, and in its development will perhaps not be exceeded by any in the Union.

Such a record of a prosperous Commonwealth fashioned out of a vast territory that was declared twenty years before "little better than a wilderness," after a brief Territorial existence of nine years emerging into Statehood only to be involved in the great civil war, and through the sacrifices, losses, and exhausting labors of a revolutionary period never losing its hold on its fundamental interest in popular education, was prophetic of the later history of Minnesota during the thirty years subsequent to 1866. But the record of this remarkable progress from the close of the war even to the present day belongs to the history of the prodigious advancement of the Northwest in all things educational toward the present period of amazing achievement in all the elements of a republican civilization.

CALIFORNIA.

The eighty-one years from the first recorded settlement of the wilderness of upper California by the Spanish, in 1769, to the admission of the Commonwealth of California as one of the United States, with a population of 90,577 in 1850, are almost barren of interest to the student of the American system of common schools. The first occupation of the country seems to have been for the threefold purpose of obtaining a few safe points for the accommodation of the Pacific coast trade from Lower California and Mexico; to set up a barrier of defense against a possible invasion by the Russian power from the Northwest; and largely as a missionary enterprise, for the conversion of the native tribes, by the zealous members of the Catholic religious orders, whose operations form the romantic and personal element in the early history of so large a portion of the Western Continent.

In 1769 four expeditions by sea and land moved northward from Lower California. One of them claimed the discovery of the Golden Gate, the splendid harbor of the great city of San Francisco. Eighteen years later—1787—there were 9 missions served by 16 priests, which had already obtained that mixture of personal and spiritual control over some 3,000 natives, which in that day was known by the name of conversion to the Christian religion. Each of these missions was practically a settlement in a wilderness, under the control of shrewd and capable leaders who appropriated as much of the adjacent country as could be made useful for their own purpose, and built up there the first approach to civilized society by the substitution of a nominal change of faith and a very real type of bodily servitude for the ruder features of savage life. Thirteen years later, at the beginning of the nineteenth century, the Spanish occupation had increased to 18 mission settlements, with 40 priests and 13,500 native dependents. The real life of the new country was concentrated on the missions. For, though there remained the ostensible commercial and military necessity of defending a vast and unknown frontier against foreign aggression, yet the priesthoods of these different missions were not only the educational leaders, but the sole body of men capable of establishing even the semblance of civilized government in a region so far removed from any center of the world's activity.

The first twenty-two years of the nineteenth century seemed to have wrought little change in the condition of the immense region now included in the present State of California; 118,981 square miles, four times the area of the State of New York, the population in 1890 1,208,071, nearly half of foreign birth. The Spanish population had slowly increased, in 1800 being only 1,800, in 1810 2,300. The overthrow of the Spanish rule and the establishment of the political authority of the Republic of Mexico in 1822 did not materially advance the affairs of this far-off land in the illimitable west. For in 1830 there were but 4,250; in 1840, 5,700, and

in 1856, when the first call resounded over the mountain world that separated it from the United States, there were but 12,000 white people in the entire territory.

But meanwhile enough had happened to practically annihilate the influence of everything that could be called the system of education introduced by the priesthood of the missionary orders. The schooling in the original settlements was of the most primitive and stinted type; scarcely more than was often given to the negro slaves in our own Southern States; indeed, far less stimulating in its character than the intercourse of the more intelligent class of negroes in any large Southern community with the life that circulated around the old plantation or village home. The establishment of the new Republic of Mexico in California was the signal for a revolt among the mission communities that at times only fell short of a civil war from the fact that the settlers were too few in number, and powerless for aggression to defy the central Government. But in a region so far away, and where material resources were so little known, the administration of the home Government could only be perfunctory. The priesthood refused to be reconciled with, and sometimes even to take the oath of fealty to, the Republic; and their influence kept the scattered population of "old settlers" in a state of provoking neutrality. The Government at Mexico virtually dispossessed the missionaries of their large landed properties; emancipated the native converts from a condition of practical slavery; and, by the wavering policy of the provincial governors, divided the people into hostile parties. By 1846 the entire region lay at the mercy of any invader powerful, ambitious, and far-sighted enough to foresee the future of the splendid Pacific empire that has been evolved from a boundless wilderness during the past fifty years. Apart from a few educational foundations and the meager schooling that was required by the gay, lavish, and self-satisfied families of the superior class, there seems to have been nothing that could be called a system of education in all the land.

It is unnecessary to recount the stirring history of the conquest and possession of the territory of California by the United States, which followed the annexation of Texas and the Mexican war. Enough to say that from a thin line of immigration previous to 1846 the American interest became more prominent. Soon after the occupation by the American forces the village of San Francisco arose in 1847 with 459 people, of whom 83 were under the age of 10. The public schools of the city were opened in 1848.

And now came in the turbulent mining era, which first really brought the Territory "before the people." In 1850 California appeared in the Congress of the United States demanding admission to the Union, with a population of nearly 100,000 people, with no previous action of the Government at Washington. Its population was largely of American origin and perhaps more representative of the whole country than that of any State. Two years after its admission to the Union, 1852, there were 264,435 in California—four-fifths American citizens; one-tenth of the entire number children. Although admitted to the Union as a free State without serious home opposition, California at once politically fell into line with the Democratic party, on which the slave power, to its subsequent confusion, so confidently relied. The political complexion of the State, like that of all the original Northwestern Commonwealths until 1856, remained the same; indeed, until the final revolt of the South in 1861. After a brief period of uncertainty the State was finally brought into line with the Union cause, although its political and social tendencies were rather of the Southern than Northern type, and, outside a few centers of population, more of the border type than of either.

For several years after its admission to the Union the great struggle in California appeared to be the endeavor by the well-disposed and executive class to hold society together. The country was little better than a boundless wilderness, twice as large in area as the British Islands, thinly populated with groups of

immigrants, largely governing their own localities according to their own ideas of order or disorder. The history of the vigilant committees in San Francisco and elsewhere need not here be related. Indeed, had it not been from the first a migration of the people of native American sort which abhors civil disorder and insists on good government at all hazards, the era of power and prosperity would have been deferred until another generation.

But below all the fluctuations upon the surface of a growing civilization, the radical intention of the superior class appeared evident. The first constitution of California, adopted September 9, 1850, provided for the education of the people in the following explicit language:

FROM THE CONSTITUTION OF CALIFORNIA, SEPTEMBER 9, 1850.

Article IX.—Education.

Sec. 1. The legislature shall provide for the election, by the people, of a superintendent of public instruction, who shall hold his office for three years, and whose duties shall be prescribed by law, and who shall receive such compensation as the legislature shall direct.

Sec. 2. The legislature shall encourage, by all suitable means, the promotion of intellectual, scientific, moral, and agricultural improvements. The proceeds of all land that may be granted by the United States to this State for the support of schools, which may be sold or disposed of, and the 500,000 acres of land granted to the new States, under an act of Congress, distributing the proceeds of the public lands among the several States of the Union, approved A. D. 1841, and all the estate of deceased persons who may have died without leaving a will or heir, and also such per cent as may be granted by Congress on the sale of lands in this State, shall be and remain a perpetual fund, the interest of which, together with all the rents of unsold lands, and such other means as the legislature may provide, shall be inviolably appropriated to the support of common schools throughout the State.

Sec. 3. The legislature shall provide for a system of common schools, by which a school shall be kept up and supported in each district at least three months in every year, and any district neglecting to keep up and support such a school may be deprived of its proportion of the interest of the public fund during such neglect.

Sec. 4. The legislature shall take measures for the protection, improvement, or other disposition of such lands as have been or may hereafter be reserved or granted by the United States or any person or persons to the State for the use of a university; and the funds accruing from rents or sale of such lands, or from any other source, for the purpose aforesaid, shall be and remain a permanent fund, the interest of which shall be applied to the support of said university, with such branches as the public convenience may demand for the promotion of literature, the arts and sciences, as may be authorized by the terms of such grant. And it shall be the duty of the legislature, as soon as may be, to provide effectual means for the improvement and permanent security of the funds of said university.

Amendment to Constitution, Adopted in 1862.

Art. IX. Sec. 1. A superintendent of public instruction shall, at the special election for judicial officers to be held in the year 1863, and every four years thereafter at such special elections, be elected by the qualified voters of the State, and shall enter upon the duties of his office on the 1st day of December next after his election.

This document confirms the declaration of many of the most distinguished of the early visitors to the new State that, perhaps, never before was a body of men so remarkable, not only for natural ability and executive faculty, but so fitted by previous educational training, gathered in so rapidly at the beginning of an American Commonwealth. We are not, therefore, surprised to read that in 1853 the people of San Francisco were entertained by a festival of 1,000 school children, each carrying a bouquet of flowers, or that Father Taylor, known as the eloquent

"Sailor Preacher" of Boston, appeared on the scene, full of zeal to inaugurate a campaign of extermination against the rampant unrighteousness that still threatened the life of the new city, and established a church; or that within five years, side by side with much that was discouraging, had grown up a civilization not inferior in many of the essentials of a vigorous practical Christianity to any of the older States.

But it is not difficult to understand that, despite the progressive type of a society that was alive to all good things in many of the strategic points of civilization in California during the first fifteen years of its Statehood, it was no easy task to establish anything like the modern American system of universal education in a country that was essentially a new departure in American social affairs—the beginning of the peculiar civilization that even to-day characterizes our young Pacific empire. The absence of established family life in the mining districts was a great drawback. For several years the civil government, State and municipal, was largely dominated by a class of public men who came from States where the common-school system had never been known outside a few of the larger cities, and whose educational ideas and experience were not of the type of the Northern States. The remainder of the original Spanish and Mexican population had no interest in general education, and, with a considerable class of the American and foreign-born people, were inclined to school their children in family, private, or denominational institutions, largely under the management of their clergy. And through the illimitable rural country the population was yet too sparse and too much driven by the sharp goad of necessity for the ordinary comforts of life to justify the reasonable expectation of the speedy growth of even the elementary country district school.

We must not, therefore, be surprised that for the first ten years of its existence, outside half a dozen of the chief cities, the common school in California was virtually in the condition of an unnaturalized foreign visitor. The reports of several State superintendents of instruction, all of whom appear to be friendly, and one of them very capable, and dead in earnest in their calling, abound in the exposure of the weakness and slow growth of the expensive system.

In the first report State Supt. John G. Marvin declares that for the past three years the constitutional provision for common schools "has been practically a dead letter." No adequate provision has been made to carry out the intent and spirit of that instrument. The school law enacted by the legislature of 1852 he declares "meager in provisions and quite inadequate to start a system of public education." He recommends, first, that a general provision be made for the support of common schools, for which an appropriation of $50,000 should be made for the then current year, while the towns should be required to contribute as much as they receive from the State; second, a small public tax, since it would be two years before any substantial aid could be expected from the sale of the public school lands, which, indeed, had only yet been partially assigned to the State by Congress; third, a county superintendency of schools; fourth, district school libraries, to meet the great destitution in reading facilities throughout the State; fifth, a provision for the selection of a uniform series of schoolbooks by the State authorities; sixth, Dr. Henry Barnard's treatise on school architecture as a guide in building schoolhouses.

Only 500,000 acres of school land had yet been assigned to the State by Congress. The superintendent calls attention to the swamp and tule lands of the State. He also declares that the usual donation of the sixteenth and thirty-sixth sections of each township for school purposes has not yet been made. The new State had an area of 188,981 square miles, or 120,270,700 acres. There were 4,594 townships, each of which might claim 1,280 acres donated by the General Government for education. This would give the immense area of 5,880,320 acres, which, added to

the original 500,000, would amount to 6,380,320 acres, representing a prospective State school fund of at least $7,975,400. The superintendent also calls attention to the fact that the State may claim 72 sections of land usually donated by Congress as a university fund, and urges the activity of the State delegation in Congress to secure the prize.

The school law of 1852 had—

First. Accepted and provided for the management of the school lands already assigned by Congress, their sale at $3 per acre, and the investment of the proceeds in United States 6 per cent stocks.

Second. The school age was fixed from 5 to 18, and the income of the school fund was to be divided among the counties, per capita of their school population, 60 per cent of the money to be appropriated to the payment of teachers' wages, the remainder for building and furnishing schoolhouses. The schools were to be maintained for three months in the year, supported by a tax sufficient to provide one-half the sum appropriated by the State as a condition of receiving public aid. The counties were to distribute the money according to the school attendance in the different districts.

Third. The State superintendent of public instruction was to be chosen by general election, to serve for three years. A county board of school commissioners was to be chosen for three years by popular election, authorized to divide the county into districts, establish and visit the schools, report to the State superintendent, and generally supervise the system.

Fourth. Five hundred persons of school age were required for the establishment of a school district organization, which should have the power to call a meeting of the legal voters to authorize a tax for building schoolhouses, etc., the levy not to exceed one-fourth of 1 per cent of the property valuation. The local management of the district schools was intrusted to this committee.

Fifth. The common schools should be graded as primary, intermediate, grammar, and high.

The new city of San Francisco reported 1,000 children of school age. The city had already established her present system of common schools, under the control of a board of education, with Col. T. J. Nevins as the first superintendent. Thirty-five thousand dollars was appropriated for the support of the system. There were 6,000 children in the State between the ages of 4 and 18. According to the declaration of the State superintendent, "most of these were growing to manhood and womanhood without education or the means of it." The superintendent pleads with the legislature to act promptly for the education of all.

In the second report, 1853, the State superintendent gives the number of persons of school age as 17,821. He says, "Up to this time not a dollar has been distributed by the State for the support of common schools." And there was no prospect of better things until another year. The school law of 1852 is pronounced thoroughly inadequate for the situation. Especially has it failed to deal with the subject of county superintendency. One hundred and fifty thousand acres of school lands have been sold for $300,000, which will furnish an income of $22,000 by another year, amounting with the funds on hand to $50,000. Congress has made the assignment of the two sections of school land to each township. The necessity for a State university is more apparent with every year. The supply of competent teachers in California is more than equal to the demand. Twenty schools had been organized with 3,314 pupils in attendance, supported at an expense of $28,103.74. San Francisco reported seven school districts, with 2,282 children, 8 men and 6 women teachers, the entire expense having been borne by a special local school tax. The male teachers were paid $150 and female $100 per month.

In 1854 Mr. Paul R. Hubbs, as State superintendent, reports: "The whole sub-

ject of education is in a critical state, owing to the defects of existing laws. Thirty-six of the 39 counties have reported 168 schools—214 teachers and 20,075 children, with an average attendance of only 5,751, schooled at a cost of $272,829. Three-fourths of the children of the State are growing up deprived of learning to read and write. The effects of the legislative sleep, and the great neglect of legislation on this subject, can not fail to be felt in the immoral tendency of society. The State appropriation of 1854 has declined from $50,000 to $38,000—not sufficient to pay the salaries of the teachers for one month." But the people in many parts of the State, notwithstanding, appeared to be stirring. Several institutions of the secondary and higher education and an increasing number of private schools were springing up. The teachers in several of the counties were forming associations. The first educational convention on the Pacific coast had been held, and it revealed a very hopeful spirit among the teachers and friends of education in attendance. The superintendent repeats the urgent advice of his predecessors, although he doubts the practicability of the Northern system of county superintendency.

The fifth report (1856) reveals the fact that the State did not contribute enough to support the 306 teachers two weeks of the six months session of the school. The law of 1852 providing for a school tax of five cents on $100 was repealed by the legislature of 1853. The large majority of children and youth were still out of school. There was not yet a free school system in the State. The superintendent urges that the school districts be put in more direct control with the State authorities.

A revised school law in 1855 provided for the election of county school superintendents for three and local school district trustees for two years. The county commissioners were authorized to lay a tax of one-quarter of 1 per cent on the valuation for education. No sectarian religious teaching was permitted in the common schools.

In 1858 a more vigorous State administration of popular education appears under the leadership of a new superintendent, Mr. Andrew J. Moulder. He reports 367 schools, with 386 teachers and 35,722 children in attendance, conducted at an expense by the State of $28,342—$58.32 for each teacher. He recommends the establishment of teachers' institutes, and a State university conducted on the military system. In his first report he declares, "Nothing but confidence in the intelligence of the legislature to aid in education can prevent a feeling of discouragement, even of despair, at the present condition." In 1858 there were 432 schools, 517 teachers, 19,000 children, and 400 schoolhouses. The superintendent reads a vigorous educational lecture to the fathers of the State. Of 40,530 children and youth between 4 and 18 but 11,183 are in average attendance on the schools. Only 162 of the 432 schools are in session six months in the year. The State does not distribute one-fourth the sum appropriated for public schools by the city of San Francisco. Not one-third of the teachers are of "the first class." New California during the past five years had paid $751,193 to protect her population from criminals and only $289,183 for common schools; more than $2 for jails to every $1 for schoolhouses. There were now 64,000 children in the State, and 2,162 school officials. The school law was being published with commentaries.

In 1859 Superintendent Moulder states that 2,500 school officials had made reports. There were 48,600 children between the ages of 4 and 18 in the State, of whom 23,640 had appeared in school, with only 13,364 in average attendance; 4,082 were in private schools. In 1860 33 schools were in session less than three months in a year, 95 for three months, 125 less than six months, 55 for six months, 75 longer than nine, and 144 from nine to twelve months. During 1859 the private schools increased from 55 to 126. In 1860 there were 649 schools of all sorts in California. Of these 2 were classed as public high and 14 as intermediate,

138 as mixed, and 344 as primary. There were 754 teachers—536 men, 218 women. The total amount expended in 1859 was $427,033; of this the city and county of San Francisco furnished $134,731.91; Sacramento, $40.900; Sonoma, $28,740.62; San Joaquin, $25,500; El Dorado, $16,893; Yuba, $16.256; Santa Clara, $15,000. Eight counties with 23,619 children—less than one-half the scholastic population of the State—expended $289,775—seven-tenths of the school expenditures of the entire commonwealth—$12.26 per capita. The 33 remaining counties, with 25,075 school population, appropriated $5.40 per capita. San Francisco expended $7.34 per capita. Superintendent Moulder "strikes out from the shoulder" in his plain speech to the legislature. He says, "Hug not to your breast the delusion that we have a very good system of schools in operation because, forsooth, they are somewhat better than last year." The improvements which he advocates are, 1, a State university; 2, State normal schools; 3, teachers' institutes; 4, a high school in every county; 5, schools of higher grade in every neighborhood; 6, competent and energetic school officials. The examinations of teachers he pronounces "a mere farce," from the incompetence of so many examining committees. There should be a board of examiners for every county, composed of the county superintendent and competent teachers, and a corresponding board of examiners for the State. Only thus can there be a hope of "ridding the commonwealth of a large class of worthless and illiterate vagabonds" now masquerading as school teachers. The State distributes less than $2 per capita annually to the school population from 4 to 18. The county tax of one-tenth of 1 per cent does not suffice for a three months' school term, without regard for schoolhouses. There should be a tax of one-fourth of 1 per cent, "unless the people are willing that their children should grow up young savages." The rural districts should combine for graded schools. The school boards should keep out of debt. He pleads for the authority to hold a "State teachers' institute" and offers to deliver free lectures on education, if his traveling expenses can be paid.

The superintendent especially urges that the township school lands, the 16th and 36th sections, shall be consolidated into a State common-school fund, to be distributed per capita among all the children. Up to 1845 the policy had been to give one section to each township of a new State for the exclusive education of its own children. But this policy, which created the greatest disparity of educational opportunity, had later been changed, and the States were authorized to concentrate the township funds into one general fund, to be used by the State for the common schooling of the whole people. In California there was one important exception to the national bounty—in the claim of the General Government to the possession of the extensive areas of mineral lands. The superintendent earnestly favors the establishment of a State university, at first on a military government, as a school of technology. The 46,080 acres donated by Congress for the university fund had been already sold for $57,600. The legislature proposes that the United States Government should be urged to donate the military buildings at Monterey for the establishment of the State university.

This continual bombardment of the State legislature by the aggressive superintendent of public instruction finally seems to have brought that body to terms. In 1860 the tenth report takes on a more cheerful tone. The superintendent writes: "The school system of California, as now established by us, is, with some inconsiderable defects, all that could be desired by the friends of education." The local returns were more satisfactory. A full commentary on the school laws had been prepared and sent to 2,800 school officials. Every county of the State had been subdivided into school districts, 523 in all. There were 92,814 children and youth in the State under 21, 57,917 between 4 and 18, of whom 26,993 were in general and 14,954 in average attendance, besides 5,438 in private schools. In the 523 school districts there were 573 public and 157 private

schools. There were 2 high, 29 grammar, 14 intermediate, 219 mixed, and 329 primary public schools in the State, taught by 831 teachers, of whom 526 were men. The average wage of teachers was $66.72 per month.

The State supplied $81,108; $230,529 came from the county tax; $168,849 from district tax, rate bills, and private contributions; $480,486 in all. Of this $311,165 was expended for teachers' wages, $110,352 for school buildings and furnishings, and $1,756 for school libraries. The city of San Francisco, in 1860, furnished one-third of the entire expenditure of the State for public education, $156,407. The superintendent exposes without mercy the great defects of the school system of the State. He is especially severe concerning "the pittance, almost beneath contempt," distributed from the State fund, $1.40 to each child. The average length of the public-school term in the State was six and four-fifteenths months. The rate bill was still a great obstacle to the development of a system of free education by the people of California.

But much had been achieved during the six years from 1857 to 1863, the limit of the present essay. The school population had increased from 40,000 to 114,600, of whom 70,700 were born in the State. The schools had grown from 316 to 715, and the teaching force from 411 to 962. The school attendance went up from 17,300 to 36,500. Four hundred schoolhouses had been built in six years. The school laws had meanwhile provided, 1, that the trustees of school districts might call meetings of the people to vote a tax to extend the school term and build schoolhouses; 2, the school trustees had been relieved from the burden of paying the salaries of certain county officials; 3, the county school tax had been raised from 10 cents to 25 cents on $100; 4, county and State boards for the examination of teachers had been provided; 5, the selection of a uniform system of schoolbooks had been given to the State superintendent; 6, the establishment of the teachers' institute; and with all this there had come a general enlargement of view concerning the importance of public education in the State.

By the year 1863 the new spirit thus awakened seems to have prevailed. In the midst of the civil war, which heavily taxed the financial interests of the State, a greatly improved school law had been passed, which changed the tone of discouragement to one of hope. In its provisions was incorporated nearly everything for which the State superintendents for the past thirteen years had earnestly contended. Its main features were: 1. A State board of education, consisting of the governor, State superintendent of instruction, and surveyor-general, required to hold at least two sessions a year, and given a general oversight of the public-school system of the Commonwealth. 2. A State superintendent of instruction, elected by the people for four years, with a salary of $3,000 and $1,500 for clerk. His duties were the appropriating of the school moneys according to the school population from 4 to 18; a thorough report of the educational affairs of the Commonwealth to the legislature, with suggestions for the improvement of the system; the supervision of the teachers' institutes of the State, to be held in sessions of from five days to two weeks; the visiting of schools through the State, for which traveling expenses were allowed to the extent of $1,000, and the presidency of the State board of examiners of teachers. 3. A board of county trustees to examine teachers, distribute State funds, divide the county into school districts, and perform other necessary duties. 4. A county superintendent of schools, elected for two years, to apportion the school funds among the districts, visit the schools, and preside over the county institutes. 5. A board of district school trustees, elected for three years, authorized to administer local school affairs, build schoolhouses, employ teachers, and report to county superintendent; two or more districts might combine for a union school. 6. District taxation for extending the school term, arranging rate bills, etc. 7. Every city or town constituted one school district, though always subject to

division. 8. The State board of examiners, composed of the State superintendent and four assistants, either county superintendents or competent teachers, was authorized to issue certificates for two, three, and four years; a county board of examiners was composed of the county superintendent and two competent experts. 9. The State board of education was authorized to decide upon a series of schoolbooks for general use. 10. A State normal school was provided for under the direction of the State board of education, with the addition of the superintendents of the cities of San Francisco and Sacramento. 11. The entire separation of public schools from complicity with all sectarian, religious, or ecclesiastical entanglements was secured and the public-school funds insured from encroachment from any quarter. 12. Negroes and Indian children were separated from the white race in the public schools, although provided for by a separate arrangement.

Here, at last, despite the remarkable diversity of a population representing the entire civilized world, a mining civilization that for years at times almost defied the control of organized government, a vast extent of open country very imperfectly known to its own inhabitants and sparsely occupied in its rural districts, and the entire Territorial and State life up to 1863 developing amid the tumult of the fierce conflict of sectional politics that finally exploded into civil war, the solid center of society in California had overcome all opposition, and reasonably provided for the education of the children according to the most approved American ideas.

Good things often come to States, as to individuals, in pairs. As if to confirm the purpose of the people of California in their "conclusion of the whole matter," as expressed in the school law of 1863, the Commonwealth was blessed by the election of Mr. John Swett as State superintendent of instruction. Here is the fit place to close the present record, on the threshold of the second period of the great revival in common-school affairs that followed the close of the civil war and the reconstruction of the Union. In California the final establishment of a completely organized common-school system was happily consummated by the appearance on the field of a new State superintendent of instruction, whose name for more than thirty years past has been a household word among the children and youth of the Pacific coast, and whose successful administration of almost every department of public education is bound up with the later history of the common school in California.

CHAPTER IX.

THE ROYAL NORMAL COLLEGE FOR THE BLIND, LONDON, TOGETHER WITH INCIDENTS IN THE LIFE OF ITS FOUNDER AND PRESIDENT, DR. F. J. CAMPBELL, A NATIVE OF TENNESSEE, U.S.A.

By Hon. John Eaton, formerly U. S. Commissioner of Education.

The beginnings in education initiated by Americans have by no means been limited to our shores. A very important and interesting movement of this character is a contribution to the education of the blind in our mother country. The blind in all Christian nations have received important consideration. The number of persons in the United States, according to the census of 1890, blind in both eyes was 50,411, of whom 27,983 were males and 22,428 were females. The number of the blind in both eyes in 1,000,000 of population was, for the census of 1890, 805; for 1880, 976; for 1870, 527; for 1860, 403. The following table gives a comparison of the number of blind in both eyes in 1,000,000 of population found in each of the geographical divisions in the censuses of 1890 and 1880:

Geographical divisions.	1890.	1880.
United States	805	976
North Atlantic	777	970
South Atlantic	888	1,105
North Central	783	877
South Central	895	1,099
Western	561	814

The Report of Dr. W. T. Harris, the United States Commissioner of Education, for 1895–96 gives the following statistics of the education of the blind: Number of institutions in United States, 37; instructors, male, 149; female, 242; total, 391; music, 129; industrial department, 106; pupils, male, 1,923; female, 1,707; total, 3,630; kindergarten, 490; vocal music, 1,532; instrumental music, 1,610; graduates in 1895–96, 139; industrial department, 2,386; volumes in library, 77,667; value of scientific apparatus, $19,325; value of ground and buildings, $6,250,894; receipts, $811,874; expenditures, $980,786.

As many specially interested in this subject will wish these figures in detail, I quote them by geographical divisions:

North Atlantic Division.—Number of institutions, 5; instructors, male, 29; female, 76; total, 105; music, 43; industrial department, 26; pupils, male, 478; female, 409; total, 887; kindergarten, 145; vocal music, 439; instrumental music, 440; graduates in 1895–96, 49; industrial department, 799; volumes in library, 29,607; value of scientific apparatus, $4,000; value of grounds and buildings, $1,664,635; receipts, $162,199; expenditures, $222,831.

South Atlantic Division.—Number of institutions, 8; instructors, male, 43; female, 35; total, 78; music, 21; industrial department, 26; pupils, male, 330; female, 293; total, 623; kindergarten, 61; vocal music, 207; instrumental music, 193; graduates in 1895–96, 16; industrial department, 303; volumes in library, 8,402; value of scientific apparatus, $360; value of grounds and buildings, $695,000; receipts, $157,882; expenditures, $195,025.

South Central Division.—Number of institutions, 9; instructors, male, 20; female, 33; total, 53; music, 16; industrial department, 21; pupils, male, 284; female, 282; total, 566; kindergarten, 105; vocal music, 356; instrumental music, 264; graduates in 1895–96, 11; industrial department, 200; volumes in library, 8,630; value of scientific apparatus, $4,100; value of grounds and buildings, $537,000; receipts, $120,960; expenditures, $133,594.

North Central Division.—Number of institutions, 10; instructors, male, 51; female, 84; total, 135; music, 41; industrial department, 28; pupils, male, 754; female, 655; total, 1,409; kindergarten, 167; vocal music, 442; instrumental music, 617; graduates in 1895–96, 59; industrial department, 1,013; volumes in library, 27,658; value of scientific apparatus, $10,405; value of grounds and buildings, $2,492,259; receipts, $331,545; expenditures, $387,275.

Western Division.—Number of institutions, 5; instructors, male, 6; female, 14; total, 20; music, 8; industrial department, 5; pupils, male, 77; female, 68; total, 145; kindergarten, 12; vocal music, 88; instrumental music, 96; graduates in 1895–96, 4; industrial department, 71; volumes in library, 3,370; value of scientific apparatus, $460; value of grounds and buildings, $862,000; receipts, $39,288; expenditures, $42,061.

It would be interesting to give with similar definiteness the data with regard to the blind and their education in Great Britain. The nearest to this that it is possible to come at the present time is an extract from Dr. Harris's Report, already cited, summarizing the English official data with regard to schools for the blind and deaf. The schools for the blind and deaf are treated together.

The schools for the blind and deaf show an increase. In 1895 there were 79 schools certified, with accommodations for 4,130 children, and there was an actual grant made that year out of the consolidated fund in respect of 3,148 children. This grant is 3 guineas a year for every deaf and dumb child receiving an elementary education, and an additional 2 guineas for every child who receives manual instruction or industrial training. All of the 3,148 children in 1895 received the grant for elementary instruction, but only 1,934 obtained the grant for industrial training, so that the average grant per child that year was £3 8s. For the current year we estimate that the grant will be for 3,148 children, being an average of £3 10s. 9d. per child.

It is impossible to state definitely how many of these persons are blind, but the significant fact is brought out that the children of these two interesting but unfortunate classes are now considered

legally as among the educable youth of the realm and deserving of consideration in the estimates for education at public expense.

At first, even in Christian countries, the education of both the blind and deaf was considered a charity, and the institutions for this purpose were designated asylums. The United States deserve special credit for their early change in this respect and their treatment of the education of the blind and deaf as a debt due to those unfortunate children, the expense of which is as appropriately to be met from the public treasury as is the education of any who are instructed in the public schools of the country. In bringing about this change in Great Britain, great credit is due to the Normal College for the Blind in London and its able and efficient president, Dr. F. J. Campbell, and those who have cooperated with him.

Dr. Campbell was born in Franklin County, Tenn., U. S. A., October 9, 1834. While at play a sharp acacia-tree thorn pierced his eye; inflammation and bad management resulted in total blindness.

The data connected with the foundation, growth, and results of the normal college are not easy to find in any connected form up to date. The following summary is most carefully drawn from various authentic sources. Dr. Campbell's connection with the college came about in this wise: His health having become imperiled by his labors in the Perkins Institute, Boston, U. S. A. (founded and so long cared for by Dr. S. G. Howe and now so efficiently conducted by his son-in-law, Dr. Anagnos), Dr. Campbell and his wife, by the aid of Dr. Howe, Senator Sumner, and Governor Andrew, were enabled to spend a couple of years in the study of music in Germany. On their way back to the United States, they arrived in London January 20, 1871. Dr. Campbell had a letter of introduction from Edward Davidson, of Berlin, to Dr. T. R. Armitage, who had already done much for the blind. He had founded (1868) the British and Foreign Association for the purpose "of promoting the education and employment of the blind by ascertaining what had been done in these respects in this and other countries, by endeavoring to supply deficiencies where these were found to exist, and by attempting to bring about greater harmony of action between the different existing schools and institutions." At that day the poverty of the blind was distressing; the Government had not reached out its hand in support of their education. On the night of Dr. Campbell's arrival in London, a gentleman stepped up to him and said: "You're blind, sir, are you not?" "Yes," replied Dr. Campbell. "Well," the stranger went on, "I am going to a blind tea meeting to-night; would you care to come?" Dr. Campbell answered: "I never heard of a blind tea meeting before; but as there will be blind people there, I shall be delighted to come." Ever on the alert for all that affected the blind, he went. There were some three or four hundred blind men, women, and children present who were treated to tea, bread and butter, cake, etc. Ladies and gentle-

men entertained them with speeches, music, and recitations. Some of the blind took part. At first Dr. Campbell was impressed by the apparent happiness as they expressed gratitude to their benefactors; but by degrees, as he talked with them individually, he found that they were, as a rule, little fitted to care for themselves; that they were indeed objects of charity. He has been known to say that this was one of the most sorrowful evenings he ever spent. He passed a sleepless night and the next morning he informed his wife that they must defer going to America and remain and try and do something for the blind in London. Upon invitation from Dr. Armitage, Dr. Campbell visited him and they went into a full comparison of facts and plans. Dr. Campbell unfolded the idea he had been cherishing of the great national training college for the blind in the United States for which he had suggested a national university. Before parting Dr. Armitage urged him to make London his field of labor rather than America. They visited blind schools and tried to introduce new methods. Sightless as they were, their souls were alive to see the actual condition of this helpless class. They both agreed that an experimental school ought to be attempted. In the May following the two doctors were conferring while walking through Hyde Park. Dr. Armitage suddenly asked Dr. Campbell, "What would it cost for an experimental school for two years?" Dr. Campbell replied, "Three thousand pounds." Dr. Armitage said at once he would give £1,000 if the other £2,000 could be obtained.

Three small houses in Paxton Terrace, near the Crystal Palace, were rented, and on March 1, 1872, an experimental school was opened with two pupils—little boys from Leeds—and by the middle of May the increased attendance required the organization of regular school work with two lady teachers, Miss Green and Miss Faulkner, and a piano tuner, Mr. J. W. Smith; Dr. Campbell giving musical instruction entirely himself in addition to all the other tasks required of him. When asked why he chose to locate near the Crystal Palace, he answered in order that the pupils might have the benefit of the music there. This has been a great advantage from the first.

In 1873 Dr. Campbell was greatly depressed by the loss of his wife, but he did not allow his private sorrows to hinder his public work. He was constantly on the lookout for larger opportunities, and especially for a more favorable site for the school. He was particularly struck with the advantages of the "Mount," on the top of the hill, Westow, Upper Norwood, London. The Duke, then Marquis, of Westminster, visited the school and carefully considered the question of securing the "Mount," and before he left offered to give £1,000 for the purchase of it. Others joined in the effort, and by October pupils were moved to the new location. The enlarged institution has become celebrated throughout the world under the name of the Royal Normal College for the Blind. The location, the plans of the build-

ing, their equipment, all unite in illustrating the advanced, comprehensive, and complete ideas that Dr. Campbell entertains with regard to the education of the blind.

An interesting idea of the spirit and methods of the college is gained from a description of a garden party on the grounds which appeared in the Weekly Chronicle. The writer says:

The sight of some 200 blind young men and women, and younger boys and girls, freely going about without guidance, and with the greatest freedom in a crowd, was, to begin with, a surprise. Over the terraces, along the paths, under the trees, by the side of the lake, they walk and they run, singly or in groups, with the utmost certainty and fearlessness. Do you want to find the concert hall, Armitage gymnasium, or swimming bath, the parade ground, the Fawcett gymnasium? Ask the first blind boy or girl you meet, and you will be taken there without any more trouble. But what is there else to be seen? Pleasant as a garden party may be, especially on such a beautiful day as we were favored with, yet a crowd with nothing definite to see or do is soon bored. People get into each other's way, and get tired of each other, and of saying, "How do you do?" and going through the round of social inanities again and again.

Fortunately, we had a pretty large programme before us, to be provided by our young hosts and hostesses, the pupils. First of all, we had to see and hear them in their classes, held for the occasion under the trees in the garden. It would take far too long to tell of all the interesting things here. In the geography class rapid little fingers trace on raised maps the courses of rivers, follow the outlines of coast, touch the tops of mountains, discover towns and cities, and so on, until the visitor, whose weak point is geography, almost dies of envy. There is the class where, by the aid of mysterious metal tablets and pegs, complicated multiplications and divisions by tens of thousands and millions are going on; the class where rhomboids and trapezoids and angles and curves, illustrated with ingenious raised diagrams on wooden pads, are the subjects of conversation; a class where modeling in clay is proceeding: and, most wonderful of all, another class where dictation is getting itself done with the rapidity almost of shorthand. "Click, click," go the styluses, in and out of the perforated frames of metal accurately adjusted, with wonderful dexterity, as each line is read out by the blind lady teacher, who reads passage after passage from the book before her.

Meanwhile, Mr. Alfred Hollins, a distinguished musician, is delighting those who have passed on, as we have now done from the classes, with an organ recital. There follows a concert, consisting of selections from the Daughter of Jairus, by the pupils' choir. Taught by ear, do you say? Not at all. The Academy of Music for the Blind would despise such an unscientific method as that. The music itself has been mastered, and has passed by means of those wonderful finger tips into the brain of each boy and girl who is singing.

Now we pass once more to the garden. We come to the skating rink. Here you open your eyes with surprise. Crowds of boys march, wheel, countermarch, along, around, and about the rink with the precision of old soldiers. There a group perform with Indian clubs, others with dumb-bells—a regular series of exercises. How learned, would puzzle one to tell. And more startling than all we have Mr. Guy Campbell performing acrobatic feats with blind boys, who mount on his shoulders and form pyramids three or four tiers high with the amusing nonchalance of professional gymnasts. We do not pretend to have mastered the secret of how they avoid breaking their necks, but we do know there was no accident, not the slightest, nor apparently the risk of one. But is that more surprising than the roller skating that follows? Hardly. Fancy a crowd of boys, all blind, let loose to gambol at their own will and pleasure over a skating rink.

One gets nervous watching them, though one sees every moment how skillfully they are avoiding collision. After this, we only feel a mild surprise when the cycling season sets in, and sightless tricyclists whirl around the track and scatter us right and left. An eight-in-hand cycle is not often seen, but here is one, and we are told that a little time ago a party of students conveyed themselves by means of it and a four-in-hand as far as Derby, where they gave a concert for the benefit of the Railway Orphanage in that town.

It would be an anticlimax to speak of ninepins, swings, rocking boats (the last being an attraction not easy to understand for crowds of little fellows), tilts, rope skipping, or even of rowing.

Each of the five schools into which the normal college is divided has a separate playground with specially adapted walks, rocking boats, rob roys, tilts, swings, etc.

This description gives some idea of the marvelous system which has grown up since the college opened with two little blind boys for scholars.

The year 1887 was marked by the completion of the Fawcett gymnasium, playgrounds, and rinks for roller skating, the important improvements in the Armitage gymnasium and swimming bath, the construction of a number of rob roys, the making of a cycle track in the grounds, the gift of a number of cycles, including a "Rudge" eight-in-hand, on which seven pupils are steered by one seeing person, several four-in-hands, each of which accommodates three pupils and a steersman, and two beautiful boats, each accommodating six rowers. On the opening of the Fawcett memorial Hon. A. J. Mundella, M. P., well known among American educators for his efforts in behalf of education, remarked:

As a member of the royal commission on the blind it has been my duty to inform myself of blind education in Europe, and I have been through nearly all the best blind schools, but I believe that we need not go from home to see the best example of blind instruction, and for physical education there is no blind school which possesses the same advantages as the normal college, or where physical education is so thoroughly carried out and developed. It may seem to some of you that it is a source of enjoyment to the blind, but it is a great deal more than that—it is a condition precedent to all education and all success in the teaching of the blind, because without confidence, courage, and determination to go about freely in the world there is no chance of success for a blind person, and that confidence and courage are given by the playground and gymnasium such as we see here.

He added at that date, "The State is doing nothing for the blind, but I hope this condition of things will not last much longer."

A feature of the physical training at the college was illustrated a few years since by a cycling trip furnished by a friend. Two "Rudge" machines were used—one carrying four, and the other eight persons—one seeing man acting on each machine as steersman. Appropriate halts were made—the whole distance taken being 126 miles. Dr. Campbell often travels on a "cycle" with some member of his family, using the tandem. That he leads in overcoming all the difficulties in

the way of the blind is apparent when it is known that he made a successful ascent of Mont Blanc, being the first blind man to accomplish that feat. He often declares we must not say to the blind, "go," but "come." Pointing to the fact that the blind, as a class, have from 25 to 40 per cent less vitality than seeing persons, he declares that "physical training for them is the lever which gives force to all other education," and that without it the blind man, however excellent his general education, is "like an engine provided with everything necessary excepting motive power." In this department his constant aim is "to develop energy, courage, and independence."

The report of the college for 1892 states that Windermere, recently purchased, contains 4½ acres, forms one of the most picturesque properties south of the Thames, and adds greatly to the facilities for physical training and the development of physical health. Many are indifferent to the appearance of the surroundings for the blind. On the contrary, Dr. Campbell seeks for their benefit the most impressive scenery. On one occasion the Duke of Westminster, president of the college management, was walking in the lovely and picturesque grounds when he said, "Dr. Campbell, it is terrible to think that you can not see anything of this beautiful view." "Pardon me, Your Grace," replied the Doctor, "I know every spot and every tree; and while you look at the beauties you see, my imagination pictures the scene with beauties beyond my power of expression."

Dr. Campbell has, to a remarkable degree, what Lord Playfair calls the "introreceptive faculty," which to intelligent blind persons "becomes almost a substitute for sight," as they are able by the description of the things around to believe that they see the objects. In guarding the health of his pupils Dr. Campbell allows no intoxicating drink of any sort to enter the college, and the use of tobacco in all forms is forbidden. On these points Dr. Campbell's quick conscience enforces his scientific convictions. Some of his views are called "American crotchets." The Christian Herald relates that when the Prince of Wales was about to visit the college some of the directors said to the Doctor, "You will have to lay aside your American prejudices and furnish your guests with wine." The Doctor excused himself, and the reply was, "the Prince would think himself insulted if he comes here and no wine were offered him." The Doctor did not argue further, but when the Prince arrived he introduced the subject himself. "I am aware, Your Royal Highness," he said, "that it is usual to have wine provided on such occasions as this, but it is against my principles and those of our institution. I can only offer you the best tea and coffee I could obtain." The Prince not only thanked him, but is reported as saying in London society, "I am glad to know that we have one institution in London which is consistent and will not lay aside its principles, even for a prince."

Dr. Campbell places much stress upon industrial training as a factor

in physical culture. The kindergarten, with its modeling, sewing cards, and paper folding, not only naturally precedes the use of books, but adds to the skill of fingers in making geometrical forms, flowers, vegetables, and animals. The workshop of the college is well equipped and modeled specially after that founded by Dr. Thompson, at Worcester, Mass., U. S. A. In due time industrial training takes on adaptation to definite ends, such as piano tuning, basket making, and the like, peculiarly adapted to the capacities of the blind. Dr. Campbell has been instrumental in the founding of several piano-tuning establishments, in which his pupils have been employed with success. A considerable number have been recognized as tuning experts by large instrumental manufactories, and have found lucrative positions, not only in England, but on the Continent and in distant America and Australia. The work of the college proceeds upon the principle that the blind must do all in their power to help themselves—self-help is the best help—and that for them to succeed in any business or profession they must have an education fully up to that of the seeing who follow the same avocation.

Dr. Campbell often repeats: "A practical education is a blind man's capital." His experience has led him to the conclusion that it requires more effort to obtain thorough systematic work from the blind than from the seeing. Therefore he would require their teachers not only to be more patient, to have more tact and ability, but that they should have a larger reserve of enthusiasm. Under normal conditions it is desirable that young children should have the benefit of home influences in connection with their school training; but he declares blind children are an exception to this rule in a majority of cases. Parents find it easier to attend to their wants than to teach them how to do for themselves; they indulge them and overpraise them without training them either to feed or dress themselves. The overworked mother is grateful if the blind child will sit still in a corner. Dr. Campbell holds, therefore, that the principles of work and the habits of punctuality, regularity, and precision are better cultivated at school. He gains great advantage from the most careful study and intimate knowledge of his pupils. He says: "After a four years' course an intelligent opinion can be formed in regard to their future career." "They will fall naturally into the following categories: (*a*) A certain number will succeed better in handicraft than in any other calling, and should be drafted into a suitable mechanical school. (*b*) A few will have special gifts for general business, and should be educated accordingly. (*c*) A few will have the ambition and ability to prepare for the university, and the special college should afford them the most thorough preparation for the university examinations. (*d*) Some will have the necessary talent combined with the requisite character and industry to succeed in the musical profession; in addition to a liberal education these should have musical instruction

fully equal to that given to the seeing, in the best schools of music. (*e*) Some may achieve excellent success as pianoforte tuners; and in the pianoforte-tuning school strict business habits should be cultivated and the same attention to work required as is demanded of seeing workmen in well-regulated pianoforte factories."

In meeting the conditions of the blind the normal school had to give special attention to lower grades of work in order to produce the best results in the highest grades.

The college embraces a preparatory, a grammar and high school, a technical school especially for young men, but affording preparatory technical training to the pupils of the other schools, and an academy of music. The academy of music forms a common bond of union; all, to a greater or less extent, enjoy its opportunities and privileges, while the instruction afforded the professional pupils is equal to the instruction given the seeing in the best conservatories. The course of instruction is outlined as follows: First, physical education, including gymnastics (Swedish, German, and American), dancing, deportment, military drill, swimming, skating, rowing, cycling, and other sports. Second, general education, including, in the preparatory school, kindergarten in all its branches, modeling, technical training, reading, writing, spelling, arithmetic, language lessons, object lessons in various subjects, and Scripture; in the college, literature, history, science, mathematics, Scripture, Latin, French, and a normal class for training school-teachers. Third, the science and practice of music, including the training of music teachers, pianists, organists, choir-masters, and vocalists. Fourth, technical education, including mechanical training and pianoforte tuning. In each department the instruction is directed to the practical end of preparing the blind for self-maintenance.

Special attention is paid to moral and religious training.

MUSIC.

Every observation connected with the college brings music into view. Dr. Campbell asserts that music in its various branches when properly taught affords the best and most lucrative employment for the blind. Yet he adds, "Many who have tried to earn a livelihood by music have failed." Their failure, he points out, is due to the following reasons: "1. In the selection of pupils for the profession the musical ear rather than the mental capacity was considered. 2. The physical and intellectual powers of the musical students were not developed. 3. The musical instruction and practice was insufficient, both in quantity and quality. 4. The opportunity of hearing music in its highest forms was not afforded them. 5. They were not trained in the art of teaching, especially in the best method of giving instruction to seeing children." Great attention is given in all departments to voice culture. He adds: "The blind man who intends to follow music as a profession must have a well-disciplined mind, capable of analyzing and dealing with music from an intellectual point of view. If the mental faculties have not been developed and thoroughly disciplined the blind music teacher or organist, however well he may play or sing, will be a failure. Even with superior men-

tal training, the musical instruction must be more thorough, more analytical, more comprehensive than corresponding instruction to seeing persons."

Dr. Campbell's success as a teacher of music has been preeminent, and he has placed great stress in securing for the college teachers of music of the highest eminence. Nothing short of the best methods is tolerated.

AID TO OLDER PUPILS.

Nor does Dr. Campbell's care of his pupils cease with their connection with the college. He seeks to remain in touch with them and to place each one who goes out from the college in an appropriate sphere of employment. With respect to one class he stated that thirteen were already provided with future employment. He referred also to an institution for the blind in which as a result of an organized plan for starting the pupils in life the percentage of success was advanced from 10 to 70 or 75 per cent. In order to aid in this purpose the Old Pupils' Guild has been organized in connection with the Royal College. This guild cooperates with the Doctor in finding places for teachers, organists, and musicians and pianoforte tuners and others. The prejudices against the blind entering into the pursuits requiring a high order of skill have manifested themselves in many ways, and often have been difficult to overcome. The thorough work of the college and the standard of merit required before a certificate can be secured have done much to secure recognition for the students going out from its several courses of instruction. The testimony from the most eminent judges on this point is too abundant to be quoted. Archdeacon Farrar declared, after personally inspecting all the various classes: "The general education is sound and thorough to the end. I saw the results of earnest and pleasant instruction intelligently enjoyed, and producing results of which Eton and Harrow might be proud."

A single illustration in the matter of securing places must suffice. Dr. Campbell, in one of the earlier years of the college, heard of a vacancy for an organist in a Scotch town. Having a friend in the place, he wrote him telling him that he had a pupil admirably fitted for the place and urged him to get the post for the blind musician. The reply came, "I am willing to do what I can, but they won't have a blind organist. A meeting is to be held to-morrow to settle the appointment." Instead of being discouraged Dr. Campbell telegraphed, "Please meet me at the station to-morrow morning and arrange for me to attend the meeting." The difficulties to be encountered need not be specified. One man declared, "We are pleased to see you, but we are not going to have a blind organist." "Why?" asked Dr. Campbell. "For one thing, he can not teach the children," was the reply. "Oh, yes, he can," said the Doctor, as he went on

to demonstrate how it could be done. The demonstration interested the committee deeply and they finally agreed to try Dr. Campbell's proposal that the blind organist should come on trial for three months, the Doctor offering to pay his salary should the experiment prove a failure; but the blind musician gave such satisfaction while on trial that a purse of 20 guineas was made up at Christmas time and given him as a mark of appreciation of his work.

The earnings of the pupils of the college during the year 1891, as reported, amounted to £18,000, and each year the returns show a handsome increase.

INCIDENTS IN THE LIFE OF DR. CAMPBELL.

These facts indicate something of the power of the man who has accomplished these great results. But what of his training; what of his environment? Franklin County, Tenn., the place of his birth, in 1834, had not by any means the best facilities for education; there was no efficient public school system; the institutions for higher education in the State were in the midst of a great struggle; the opportunities for either general or special education were meager; courses of study in the natural sciences were but little developed; technical and industrial education had hardly been heard of; schools for the blind were just beginning their great work here and there in different States of the Union. We can only glean the facts of his early life from various sources as friends have recorded them or as he now and then has made some allusion to them. Some years ago the author of John Halifax, Gentleman, wrote some interesting particulars of his life in Good Words under the title of "Light in Darkness." She recalled an incident told her by Dr. Campbell illustrative of the danger to the blind from the sympathy awakened by their misfortunes. His parents were greatly affected by his calamity, and it became the law of the family that he must do exactly as he pleased. In two instances only was he punished, naughty and perverse as he was, and in both of those instances, he said, the punishment was unjust. The first was on an occasion when his two brothers and himself were playing in the barn and began to fight; he begged them to stop, and his voice brought his father to the spot. He was an impulsive man and rushed to punish somebody. It being dark, he caught his blind boy and punished him. The brothers rushed to the rescue crying, "It is Joseph! Poor blind Joseph!" The whole family were in tears, his father quite inconsolable.

His father having met with heavy losses, all the family were afterwards compelled—father, mother, and children—to work early and late to draw their support from their small farm in the mountains. Joseph, however, was an exception; he was not expected to do anything for fear he would hurt himself. But his father being absent for several weeks, his mother allowed him to have some wood and an

ax to cut it with. When his father returned he was amused to find six cords of wood cut and carefully packed away. His brothers told their father it was Joseph's work, and the next day the father brought a little ax from the village for his use, and after that took great pains to teach his blind boy all sorts of farm work.

Dr. Campbell alludes to the dull times when all the other children were at school. "Oh, the anguish of those dreary, idle days!" he exclaims. "Long before evening I would wander off on the road to the school and sit listening for the far-off voices of those happy boys and girls coming back from their lessons."

It was given out that April 1, 1844, 10 pupils would be received for instruction in the blind school then to be established in Nashville, the capital of Tennessee. Day after day Joseph's father went 5 miles to the village to make arrangements for him, but would come back saying to his wife, "Melinda, I can not do it." His mother, a brave and noble-hearted woman, would answer, "James, we must do it; it is the only thing we have been praying for; we should lose our chance; the school may be soon full, and then"——

It was difficult to secure an outfit for the lad. Finally a sewing bee was held to make his clothes, and he was soon ready to start. A kindly old gentleman volunteered to take him in his buggy to Nashville. His father went with him part of the way riding Joseph's pet horse, and when he said in a choking voice, "Good-bye, Joseph, my son," the boy's courage failed him for the first time, and he earnestly hoped to find the school full. When they arrived in Nashville the old gentleman called from the carriage, "Is this the blind school, and is it full yet?" The answer came "No." Though given in a wonderfully kind voice it sounded to Joseph like a knell. He and his friend were made welcome; he was taken to the schoolroom and the New Testament in embossed letters put into his hand; he was electrified and so eager to begin that the teacher sat down beside him and in three-quarters of an hour the lad had learned the whole alphabet.

These were halcyon days. The family consisted of the earnest teacher, Mr. Churchman, a blind gentleman, his affectionate and kindly wife, and two pupils. All lessons were taken in their private rooms at first; soon more pupils came and regular school work began, especially in music. Dr. Campbell has said that he never could forget his first singing lesson. He had succeeded so well in other studies that his teacher called upon him first; he sounded *A*, and the lad opened his mouth, but, as he says, the result must have been very funny, to judge from the effect it produced on his listeners. He was asked to sing a tune; the teacher hummed a tune for him to imitate—also in vain, and it was declared that he could not tell one tune from another. His case was considered hopeless; he was told he could never learn music, but could only take basket and brush making; piano lessons were regarded as a waste of time and was forbidden; other boys laughed at him; he was left out in the cold.

Joseph determined not to be beaten; he hired one of the boys secretly to give him lessons in music, and practiced whenever he could. Three months after, the music teacher, also blind, accidentally entered the room and asked, "Who is that playing the new lesson so well?" "I, sir," responded Joseph. "You, Joseph?" exclaimed the teacher, "you can't play; come here; what have you learned?" "All that you have taught the other boys, sir," replied Joseph. "Well," said the teacher, "sit down and play the instruction book through from beginning to end." This he did. Fifteen months later he gained the prize for pianoforte playing. The prize was a medal with the inscription "*Musica—lux in tenebris*," and this has been the motto of Dr. Campbell ever since, and is now inscribed over the music hall of the college.

The school could only afford one piano and Joseph had to rise early and practice until 7 in the morning. The winter of 1845 was intensely cold in Nashville; the river was frozen over; they could get no coal in the school for a whole month and had to manage with a single fire. Few lessons were given, but Joseph practiced from 5 to 6 hours daily, working for an hour and then running into the playground and rushing around it ten times, which made a mile, and then returning to his piano again. Thus these early conditions tested and developed the grit that was in him.

Dr. Campbell so often says "I see," and describes with such enthusiasm the appearance of Niagara, the White Mountains, and the Alps, and other scenes which he has visited that people often ask, "Is he really after all totally blind?" "Are you really blind, or are you humbugging?" said Professor Tyndall to him once, seizing his arm as the two sat together on the Alps, so keen was the interest Dr. Campbell manifested in the scene before him. He says of himself that he had seen many beautiful things before he became entirely blind which are indelibly impressed on his memory, such as the beautiful peach tree, the pear, apple, and plum trees, and near by the field of clover filled with brilliant white and red blooms. "To this day," he says, "I often go to my piano in the quiet evening and see it all again—the flowery land of my birth. Then the stars," he continues, "I wonder if the children love the stars as I did? As my sight faded my mother took me out before putting me to bed and made me look up from the piazza." Little by little the curtain was drawn. One night he could see nothing. "Why is it so dark? Why does not God light up the stars for your little boy?" he said. And to this day he recalls the tears that fell on his face as his nurse carried him to bed.

As to the philosophy of the blind seeing, Dr. Campbell says no two persons ever see a thing in the same way; each sees it differently; they talk, each giving a separate idea, and the blind catch the ideas of all, and so really seem to have a power of seeing with other people's eyes, which compensates in a measure for the loss of their own.

Dr. Campbell has sought always to do as nearly as possible as those

seeing do. This is illustrated in his boy life at home. He was fond of hunting and fishing with his brothers—he could ascend the most inaccessible mountain cliffs and became an expert climber. He could climb any tree that he could clasp with his arms. In his boy life in the mountains his chief enemies, he has been accustomed to say, were the snakes. Often he slept unconsciously over them; sometimes to his horror he would step on them. Once when working in the cornfield he took up a large snake in an armful of corn. It struggled to free itself and he threw it violently from him, thus probably saving his life. The snake was killed and he resumed work. He was greatly devoted to the farm animals, especially the horses. His father kept one in particular for him; he says she was a fiery, wide-awake little cob, but if she had been a human being she could not have understood his blindness better. She would come to him anywhere, wait patiently for him to mount, which he would do without saddle or bridle—and though on her mettle, with him she always carefully picked her way; even in the mountains he could trust her implicitly, giving her the reins in difficult places, sure that she would carry him safely through.

His courage and persistence are illustrated by an incident which occurred in connection with an expedition among the mountains for health. He had overworked and the physician ordered rest. With a brother he undertook a mountain expedition. They sheltered themselves in a hut within a few feet of the brow of the mountain. By and by young Joseph learned to clamber up and down this cliff and found ten enormous trees growing there, one above the other, the upper one being only a few feet from the next, the lowest about 200 feet beneath. He planned and proposed what backwoodsmen call a "cataract," and sallied forth axe in hand to attack his first tree, about 4 feet in diameter. His brother laughed at him and suggested that he should ask for help, but he kept at the task himself. At last all was ready. The biggest tree, the one next the hut, was hewn through except a very small bit, and prepared to fall. Naturally the parties were greatly excited; all the success of his plan depended upon the way the trees had been cut, with the view to their falling straight. He examined them one by one and then climbed back to the topmost tree and applied his axe vigorously. Ten minutes more and he heard his brother cry out: "It is going!" "We stepped aside," he says, "lest we should be struck by one of the falling trees. What a turmoil! Tree after tree began to go, each pressing upon the other till the whole of them went thundering down the mountain side. The topmost one finally found a resting place far below."

Another especially illustrative incident of this spirit must be given. The school for the blind to which he belonged was wanting pupils. Parents did not appreciate its advantages and refused to send their children. Young Campbell was requested to make a sort of holiday tour through Tennessee and appeal to parents to send their blind

children. He took a young friend with him; they traveled on horseback, he on his own favorite horse, Nelly. He visited all schools, called upon doctors, clergymen—even blacksmiths, to learn where the blind children were. At the end of a week they had found three to send to Nashville. In order to secure the third, Cornelius Foster, they had to cross the Hiawassa, a mountain torrent.

There were no bridges, only a ferry and a ford, the former being used when the latter was impassable. Nobody told the young men about this, so they rode into the stream and soon found themselves plunged over a dark bank into deep water. It was young Campbell's first experience of the kind. He called to his companion to let the horses go as far as possible and soothing Nelly he sat perfectly still on her back. She neither returned nor tried to climb up the steep bank, but with true instinct swam diagonally until they gained the opposite shore. There the ferryman called to them and explained how they had missed the ford, adding that he would not have crossed as they did for a thousand dollars. They were wet through, but soon dried in the July sun. The little blind boy was found and arrangements made with his parents to take him up back. He was mounted behind Joseph and all three rode back to meet the other boys. The new pupils were forwarded to Nashville, while Campbell and his companions went farther in search of other blind children. One of them, Agnes Jones, lived on Flint Mountain, and to reach her home they had to cross a swift water course 19 times. His companion was no mountaineer, but a city boy, and learning as the darkness approached that there were still 4 miles to go, asked Joseph if he meant to camp out all night. When the deep roll of mountain thunder was heard and a storm pressed suddenly upon them, their horses became unmanageable and they had to dismount to hold them. Total darkness rested upon the mountains, they decided to go back, his companion had declared it was impossible to find the path, so he bade him hold the horses while he, the blind boy, found it and led the way with Nelly ahead. Referring to this incident, he has remarked that he felt no fear but for rattlesnakes, as he knew 30 had just been killed close by. When the path grew smooth they mounted, but his hands, he says, shook so he could scarcely hold the bridle. It continued to rain and his companion declared he could see nothing, so blind Joseph rode away guided by the sound of a waterfall which he heard, but he declares his real trust was in Nelly. They came back to the creek which they had to cross; at first he hesitated, but Nellie did not—his feet went under water and he thought all was lost; but this proved to be the deepest part and they were soon safely over on the opposite side.

Agnes Jones was induced to accompany him and he put her on Nelly's back behind him and carried her 50 miles, when they found another girl, Kate Flemming, who joined them for school.

Many facts illustrate Dr. Campbell's insatiable desire for improve-

ment. Making good progress in his work in the blind school, he prepared to take a course in the University of Nashville, presided over for a quarter of a century or more by Philip Lindsay, D. D. His father's losses rendered aid from that quarter impossible and he felt deeply the stress of poverty. His only hope was his earnings, and he could only earn by giving music lessons. He secured two pupils, daughters of a Mr. Allen. He says that one of these young ladies seated herself by the piano and he sat beside her. "What shall I do?" she said. Now, Mr. Campbell could play brilliant pieces; as a blind boy pianist he had been petted and praised. He says that he thought himself a wonderful musician, but his music had all been learned by ear—not by note. He had never mastered the art of teaching. What did he really know? How was music written; how above all was he to teach a seeing person? Yet he must teach; it was his only way to obtain an education. In his emergency, he said to Miss Allen and her sister that they must just play to him that day and that the next week they would begin regular work. Then he walked off toward the cemetery; the keeper was just locking up, but he let the blind man in. In his depression he went to the monument of General Carroll and sat down on its lowest step. What was he to do even to live? He must earn money to educate himself—considerable money—and his music, which he had depended on, had crumbled away at the first touch; the teacher of the blind school did not know his business. Here was a lesson that greatly influenced his future career. As he sat there in sadness the chilliness of night came on, the city bells mournfully tolled out the hour. Suddenly he thought of the career of the man on whose tomb he sat. Once he was a poor boy like himself, yet by his struggles he became the idolized governor of Tennessee. Young Campbell sprang to his feet with his mind made up. That night, with the promptness that has characterized his life, he went in search of a Mr. Taylor, an Englishman, once a pupil of Moscheles and Mendelssohn, a pianist of great repute, though unfortunate in his private life. His manners were rough and, without asking young Campbell to sit down, he inquired "What do you want?" Campbell stammered out, "Mr. Taylor, I am a fool." "Well, Joseph, my boy," replied Mr. Taylor, I have known that; I have always known it; but it is less your fault than that of your teachers." By the aid of a friend the arrangements for lessons were perfected.

The following day he was seated beside Mr. Taylor at his piano four hours, and the next day the two Misses Allen had their first lesson from him. A year later, when he was just 16 years of age, he was appointed teacher of music in the Tennessee State Institution for the Blind, where he had first been told that he never could learn music.

In those days all instruction for the blind in letters was of an elementary character. Young Campbell longed for the most complete education. The best opportunity at hand was the University of Nash-

ville, already mentioned. Already he aspired not only to all this university could furnish, but to complete his course at Harvard. Instruction at the university increased his expenses, but he added to his income by taking private pupils. The professors at the Nashville University were very helpful, and gave him private lessons. He had to pay persons to read to him, but with all his expenses he was soon saving money, and these savings went to assist a friend in business, whose failure later plunged him into deeper poverty. With his plan of finally studying at Harvard, he went to the Bridgewater (Mass.) Normal School to improve his methods of teaching. Here he met Miss Bond, who afterwards became his wife.

There came an offer from a prosperous female college in the South, and his course was suddenly turned there—and as suddenly turned away by the political disturbances preceding the civil war. The experience he underwent there greatly affected the health of his wife, and she returned for a while to her friends in New England, while he went to the blind institution in Wisconsin to teach music. Her health not recovering in New England, she joined him in the West. Failing to improve there, he returned with her to the East. The journey was accomplished with much difficulty, and he finally secured a private room for his wife in the Massachusetts Hospital. His expenses were heavy, and he suffered great privations, living for several months upon 6 to 10 cents a day; during which time he watched almost constantly by the bedside of his wife. One morning he walked from the hospital to the school for the blind at South Boston, which had been minutely described to him. Doctor Howe saw him as he approached, and he walked so much like a person seeing that Doctor Howe asked: "Why do you wear glasses? You are not blind." To which he replied: "I am blind, Doctor." "I have been following you up Broadway," observed the Doctor, and you turned out when you met ladies as well as I could myself, and when you reached the institution you turned at right angles and directly walked up the stone steps without even putting out your walking stick. How is this possible, if you could not see?" Mr. Campbell adds: "I took off my glasses, and for a minute or more he looked directly into my eyes, and then in a quiet tone said: 'I can not understand it; you can not even see light.'" Mr. Campbell asked for permission to spend a day in the class, but Doctor Howe replied it was not a visiting day. Mr. Campbell claimed he was not a visitor, but a specialist, and desired to see the classes in their every day dress. Permission was given, and he spent something like nine hours, equally divided between the school and the musical departments. As he was about leaving Doctor Howe expressed a desire to know his opinion of the work. "Do you wish my honest opinion?" asked Mr. Campbell. "Certainly," was Doctor Howe's response, "I would scorn a dishonest opinion." Mr. Campbell first pointed out the imperfections as he saw them, showing that they were the fault of the system. Doctor Howe especially urged him

to speak out without reserve. Then he pointed out the importance of higher and more thorough training in music, and the fact that the musical pupils were selected mainly on account of their quick musical ear, and not for their mental capacity. The result was an engagement with Mr. Campbell, who, unwillling to take less than full pay, gave his services to the school for a time. So great was his success that within two years Dr. Howe proposed of his own accord to raise the salary to $1,600.

The education of the blind ever on his heart, he developed more fully his idea of the introduction of instruction for the blind in higher courses of music into one or more of the leading American universities, but his proposition was not accepted.

Here again Mr. Campbell's strength was overtaxed by the too zealous discharge of his duties. He was told that his lungs were affected, and that he must have a change of climate or his early death would be expected. Mr. Campbell met the threatened calamity in his own peculiar way. He says, although he was a southerner, he immediately learned skating, and spent much time on the ice, and the following spring went into the pine woods of Maine, where he chopped trees until the following autumn, when he returned to his work in restored health. His wife continued an invalid. When his health again gave way, the friends before mentioned urged him to take a European trip. The kindness of Boston friends was shown by the continuance of his salary for a time, and by the Harvard Musical Association giving a grand concert and presenting him with the proceeds. In continental Europe he secured private instruction of the best masters, and studied, especially, the method pursued by them in their various departments. Thus, friendships were formed which have ever since contributed to his success.

These limited details of his life and personal experiences will show how his environment, united with his natural talents, made the man who has so successfully established and conducted the Royal Normal College for the Blind.

The leaders of English public sentiment interested in the blind were able to see the qualities of the man, to appreciate his plans, and to favor and sustain his efforts. The institution has not only affected the lives of those who have been trained within its walls, but has led the way in revolutionizing the sentiment of the country with regard to all who have lost the use of their sight. It is not only seen that they can be self-supporting and self-respecting, that they can have the blessing of the aspirations common to the seeing, but that it is the obligation of the public not to crush their hopes by treating them as a helpless class; in a measure, all the other institutions of the realm have been modified in the direction of the ideas and methods of the Normal College. Here it should be noticed that Doctor Campbell has urged that the blind who are defective in intellectual capac-

ity should not be educated in the same classes or in close relations with those of normal natural capacity.

By degrees it has been seen that the education of the blind should not be treated as a charity, but the expenses should be met as are the expenses of similar grades of education for those who enjoy the full benefits of sight.

Mr. J. G. Fitch, one of England's leading educators, early pointed out how this purpose must be sought. It could not be secured at a leap, but modifications would come by which the blind would be treated by the Government the same as the seeing in the matter of education.

In accordance with this idea Dr. Campbell has sought to arrange that the elementary work of his institution should be taken up by the London school board, and the preparation of teachers by the education department. Of course the aid from county boards, in respect to industrial training, should benefit the blind as well as others. The full realization of these purposes may not be at present satisfactorily accomplished, but the results before the world are impressive.

The total attendance upon the college in 1896, as reported, was 189. The earnings in a single year of those who have had the benefit of its training have been given as high as £18,000 or $90,000. The value of the grounds and buildings is set down at $300,000. In the report of the college for 1896 it is said that Windermere and Wilmer, recently purchased, contain 7½ acres, and with the 9 acres previously in the possession of the college the grounds form one of the most picturesque properties south of the Thames.

Doctor Campbell is constantly acknowledging the aid he has received from his numerous friends and coadjutors. In the report for 1896 he refers in fitting terms to the resignation of Lord Playfair, who held the chairmanship of the executive committee, made vacant by the death of Doctor Armitage in 1890. He repeats with affectionate emphasis the list of those who have cooperated with him; such memorials as the Dr. Armitage memorial and the Fawcett memorial bear testimony to his unceasing regard for those who have rendered great service to the blind. The following list of those who have cooperated with him, or who have been officers of the college, gives most conclusive evidence of the favor with which his efforts have been received by the most eminent persons of the realm.

ROYAL NORMAL COLLEGE AND ACADEMY OF MUSIC FOR THE BLIND.

Patron.—Her Most Gracious Majesty the Queen.

Vice patrons.—His Royal Highness the Prince of Wales, K. G.; Her Royal Highness the Princess of Wales; His Royal Highness the Duke of Edinburgh, K. G.: Her Royal Imperial Highness the Duchess of Edinburgh; Her Royal Highness the Princess Louise (Marchioness of Lorne); His Royal Highness the Duke of Connaught, K. G., and Her Royal Highness the Princess Frederica.

President.—His Grace the Duke of Westminster, K. G.

Vice-presidents.—The Marquis of Bute, the Marquis of Northampton, K. G.; the Marquis of Lorne, K. T.; the Earl of St. Germans, the Right Hon. and Right Rev. the Lord Bishop of London, the Right Hon. the Lord Mayor (ex officio), the Right Hon. Lord Ebury, the Right Rev. Bishop Barry, D. D.; Sir Charles Hugh Lowther, Bart.; Alderman Sir Andrew Lusk, Bart.; Sir Sydney Waterlow, Bart.; Sir Rutherford Alcock, K. C. B.; the Master of the Worshipful Company of Cloth Workers (ex officio).

Trustees.—His Grace the Duke of Westminster, K. G.; the Hon. W. F. D. Smith, M. P.; and William James Armitage, esq.

Executive committee.—The Right Hon. Lord Playfair, K. C. B. (chairman); W. J. Armitage, esq.; James A. Campbell, esq., LL. D., M. P.; J. Whitaker Hulke, esq., F. R. S.; William Mather, esq., M. P.; Arthur Miall, esq.; F. D. Mocatta, esq.; the Hon. W. F. D. Smith, M. P.; Dudley R. Smith, esq.; Sir Sydney H. Waterlow, Bart.; George A. Western, esq. (chairman of house committee); T. Marchant Williams, esq. (retired April 1, 1893); also the president, trustees, and treasurers (ex officio).

Treasurers.—The Right Hon. Lord Stallbridge; the Right Hon. A. J. Mundella, M. P.

Honorable secretaries.—W. J. Armitage, esq.; Arthur Miall, esq.

In addition, there is an extended list of councilors, together with the names of local committees organized in the interest of the college at Dundee, Edinburgh, and Glasgow. Indefinite quotations might be made from those in whose judgment the public would have the most confidence commending the work accomplished.

The venerable Archdeacon Farrar, D. D., remarked to those who had been listening to music furnished by the college:

"The exquisite anthems, hymns, and service to which you have been listening have been performed by musicians from the Royal Normal College for the Blind. * * * What we should all desire for the blind, above every earthly blessing, is that they should not be a burden to themselves, or to their friends, or to the community in general, but that they should be trained to earn a blessed independence; to become profitable members of the church and commonwealth. * * * I am happy that, owing to an improved state of things, we now rarely see the once common, but surely shocking sight, of a blind man led along by a dog with a string, and so pitiably exposed to the hundred accidents and chances of the street. But what we should all aim at is to foster every wise effort to uplift the blind above the disabilities of their condition. It should be our duty to alleviate their calamity. It should be our effort to bring courage and brightness into their lives; to provide them, as far as we can, with exceptional chances to compensate for their exceptional difficulties; to inspire into their gladdened hearts the sense that they, too, are dear children, beloved of their Heavenly Father, in the common family of man. * * * The Royal Normal College for the Blind enables them to avail themselves to the full of those blessed compensations which lie in the inexhaustible resources of nature for all who have the faith and the energy to draw them forth. Those compensations are like the water locked up in the flinty crags of Sinai till, at God's bidding, the rod of Moses bade them spring forth, so that in the wilderness did water break out and streams in the desert. But as the imprisoned runnels did not leap forth till the rod of Moses had smitten the stony rock, so neither are these compensations available for the common blessing until the mercy, skill, and perseverance of man has set them free. It is this which is being done in the Royal Normal College with conspicuous wisdom and success.

CHAPTER X.

MINOR MENTAL ABNORMALITIES IN CHILDREN AS OCCASIONED BY CERTAIN ERRONEOUS SCHOOL METHODS.[1]

By Dr. William O. Krohn, Psychologist, Illinois Eastern Hospital.

My discussion of this subject is based upon four distinct premises or propositions, each of which is a clearly proven and fully demonstrated truth—a fundamental principle—in some one of the various particular sciences. It is not my purpose to endeavor to substantiate any particular theory of education. We are not trying to bring forth evidence in favor of any "fad" or "ism." It is an unwelcome fact, but a fact, nevertheless, that mental abnormalities do exist in school children. To what is this seeming mental disintegration due? We know that in a large measure these mental abnormalities are the direct result of erroneous school methods—the logical attainment of a pseudoeducation.

The present paper is not at all concerned with the physical ills of the child, many and serious as they are, due to improperly appointed schoolrooms. "Schoolroom diseases" do exist, and the fact that they do exist is a stigma that we should all hasten to eradicate. That a healthy, laughing, romping child entering our modern school may be doing so at the probable expense of health is a sad commentary upon our modern educational methods. Can you wonder that a parent sometimes hesitates to give his child to the modern school when he knows from observation that his dearly beloved child may come back to him at the end of a few years broken in health? Must the parent of to-day take along with the modern school, possessing as it does so much that is excellent, utilizing as it does so many of the best educational facts and forces—must he needs take also those factors that make against rather than for the child's health? Can you criticise the parent for sometimes halting at the schoolroom door and repeating to himself the question, "What will it profit my child if he gain the whole world of knowledge and lose his health?"

But in these latter days reforms are being made in regard to seating, ventilation, lighting, and heating, as well as provisions for exercise, recesses, and recreations, all of which goes to show the steadily growing belief of parents, teachers, and school officers in the dictum that "a ton of knowledge gained at the expense of a single ounce of health is far too dearly paid for." Our schoolhouses are being better builded, better equipped, and better appointed, so that as time advances the physical child—his health—will be more and more conserved.

But the mental abnormalities of school children, resulting from erroneous, misfit methods, have occupied the thought and evoked the sympathy of comparatively few, and for that reason I shall devote the entire time of this paper to the discussion of these mental abnormalities, their causes, and how they may be eradicated.

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[1]A paper read at the Washington (1898) meeting of the National Educational Association, and published by the Commissioner of Education according to a request expressed in a resolution of the Association.

My first premise I take from the domain of the science of biology. It is the law of heredity, in which we all believe to a greater or less degree. I mean the law of heredity only in its more restricted but fully established sense—namely, the acquired characteristics of the parent are not transmitted to the child. A strong belief in heredity has become so general and so widespread that the direct results of descent are looked for with supreme confidence. The good parent is supposed to have a good child, and the brilliant parent a brilliant child. Yet this is too sweeping, for goodness and brilliancy are qualities purely functional, and not structural. They are the results of friction, struggle, social conditions, environment. The question of the underlying physical structure of the child is quite different. Bone, muscle, nerve in their distribution are governed largely by heredity. But there is a difference between natural inheritance of structure and artificial acquirements. The father may be deaf and the mother a deaf-mute, but the child of these parents will have normal hearing and speech. I have made personal observation of one family in which both parents were deaf-yet their five children are perfectly normal as to hearing and speech. A man may have his nose pushed to one side and the woman he marries may have suffered the same deformity, and yet the children born to them will have perfectly straight noses. Both father and mother may be "star" mathematicians—the result of acquisition and study—but the children born to them may be unable to go beyond the "rule of three." Acquired characteristics are not transmitted. They are functional qualities rather than organic attributes. As Dr. Oppenheimer says in his recent book: "The doctrine of heredity, as commonly held, not only is falsely applied to human descents, but also renders the wisest and best efforts of training unnecessary and useless. For if at birth the child's bodily and mental organization is complete, if the characteristics of parents are handed down to offspring, then there the matter ends. Every remarkable parent would have equally remarkable children, and every deficient person would curse his descendants with a like deficiency; work, training, striving after noble ideals would be useless and silly." All individual efforts at self-improvement would be worthless, every individual impulse would be incapable of realization, every endeavor of parent or teacher would be at an end. Not a single educational fact, not a single educational force but would fail of fruition.

But education is not a matter of such utter hopelessness. Pedagogical efforts are not doomed to such complete barrenness of results. To such a hopeless philosophy this world would be a dull blank and man little more than a grinning skull. If one really observe the laws of growth and mental development as they become actualized in every child he will see that there is a more wholesome, roseate philosophy of education. Happily, then, the child does not grow according to some hard and fast rule that has been implanted in him before he was born. The old Calvinistic form of pedagogy, called heredity by Darwin, has given place to the counter dogma of liberally minded men, as Rousseau, who says: "Everything is good as it comes from the hands of the Creator; everything degenerates in the hands of man." While both of these dogmas are too extreme—both the old Calvinistic and the more recent liberalistic—the sum of the whole matter is that entirely too much dependence has been placed upon heredity in its commonly accepted significance. Parents and teachers educate the minds, train the bodies, and develop the morals of the children under their care "not so much by what their ancestors were but what they themselves do and think." In the meantime in any case of mental abnormality in the child, the teacher will shift the blame on the parent and the parent in turn on the teacher until finally, with their utter lack of cooperation, the psychopathically disposed child really becomes mentally disintegrated and quite degenerate.

In how far does the school help to develop mental and nervous abnormalities when they could and should be checked and obliterated? In how far does the

school give rise to new evils that affect the mental power of the child—evils that would be entirely unnecessary were the courses of study, the daily programme, and schoolroom methods more fitting and better adapted to the child? This vital question will be answered more fully after our other premises have been set forth. In the light of the true conception of the doctrine of heredity we are warranted, however, in saying that we have usually taken too much for granted in believing that the child of 6 years of age as he knocks at our schoolroom door is more developed than is really the case. We certainly take too much for granted with reference to the knowledge possessed by the children we are called upon to educate. There is in fact next to nothing of real educational value the knowledge of which it is safe to assume at the beginning of school life. The child does not inherit in any form the knowledge acquired by his parents, and we must proceed in his education by bringing into exercise all methods of appeal to the child's mind. We must be prepared to educate the whole child and not take for granted that a certain segment of the circle of his intellectual life has been measureably formed, fashioned, or developed by heredity. We must so place our array of eductional forces that every form of the brain activity may be aroused and that appeal be made to every mental potency. If we take for granted that a certain parcel of knowledge is bestowed upon a child as an heirloom by his ancestors we are creating a possibility for mental abnormalities to appear in the particular child thus partially neglected.

My second premise I take from the domain of genetic psychology. It is also a firmly established, clearly demonstrated principle—an ultimate fundamental truth in the science that has given it its being. This principle is: Mental development in the child occurs by stages—by periods. Just as the entire body is not growing at any one time, so all the mental powers are not unfolding and growing at the same time. In bodily development growth settles for awhile on one set of muscles, one set of organs, and then another, and another, until the entire body is developed. Likewise, there is a nascent period for each mental faculty.

The first mental power to develop is sensation. At birth a child possesses but two senses—touch and temperature. They are the only windows of the soul open to receive the impressions that Mother Nature has to bestow upon him. A few hours after birth vision is added, then hearing, and after some days taste and smell, followed by the muscle sense and the others in turn.

The second epoch in the mind's process of unfolding is the memory stage. This is the period when the child is characterized by a prodigious power of remembering detail. A single hearing of rhyme or rule of song or catchy phrase is sufficient to insure its correct reproduction. We are all aware how much more difficult it is for us to commit rhymes or rules now than it was during our second or third year of school life.

The third epoch is the period of the growth of the imagination. Children love to live in a world of make-believe; they love to play circus, church, or school. How easy it is for the child to assume the rôle of Davy Crockett, Daniel Boone, Robinson Crusoe, or Buffalo Bill! During this period there is developed a mania which frequently occasions grave concern to parents. I refer to children's lies. Now, the lie of the child, it must be remembered, is by no means the same despicable moral offense as is the deceitful lie of the adult. It grows largely out of his desire to excite wonder. It is a bit of incipient research. He tries it, and if it works he tries it again; if not, he quits. But, in these rovings of the imagination he is not attempting primarily to deceive.

The fourth period is characterized by the peculiar activity of the powers of judgment and comparison. This in turn by the period of curiosity. Curiosity must be properly developed. No child whose curiosity is throttled and starved will ever become a good reasoner. He must first ask questions and reasons of others in order to be able to ask questions and reasons of himself.

I have thus outlined the periods of mental development for the purpose of showing that a well organized course of study must be in harmony with these processes of development in order to be successful. More depends upon the order of studies assigned than upon the contents of the studies themselves. You have heard of the experiment made some years ago by four teachers in the city of Paris, in the Lycée (the school for boys), who asked permission of the minister of education that each of them might give to his 25 pupils the same studies prescribed in the required course, but in a different order, an order believed by them to accord with the natural development of a boy's mind rather than in the arbitrary order demanded by cast-iron law. These boys completed all of the required studies in this natural order in three and a half years, instead of seven years, the time assigned for the completion of the course as regularly given in the Lycée. Upon examination they were found to be equally proficient mentally, and above the average in physical development, as compared with those who had spent seven years in going over the same ground. As teachers we should have constant regard for the great principles of mental waste and mental economy. The course of study should fit the child; the child should not be jammed into an arbitrary curriculum, sustaining no relation to the natural order in which his powers of mind and body unfold.

In some of our schools seven or eight years are still devoted to the study of arithmetic; yet we know that all of arithmetic can be taught the child and better taught, in the years between 7½ and 10. This is admirably done, to my personal knowledge, in at least 150 schools, saving much time and energy, and making room for important studies which would otherwise be crowded out. Now we all know that the time to educate any mental capacity is the time at which that particular mental power is most rapidly growing. The time to educate memory is when memory is most rapidly developing; the time to educate the senses is when the senses are most alert—i. e., when they are rapidly unfolding. We would not have "diseased imaginations" in our school children if we would only properly cultivate imagination when it is most rapidly growing. A host of mental abnormalities in school children can be traced directly to the fact that the course of study is not formed to correspond to the child's various periods of mental development.

If at any period of mental development, the proper mental food, the proper school study is not given, then the mental faculty that would otherwise grow so rapidly and unfold so perfectly (had it been properly fed and exercised) will be stunted in its growth and in all probability atrophy, because of disuse. The child's whole mental development will thus be impaired and a whole line of mental abnormalities will present themselves at a time too late for their complete eradication. Especially serious are the mental abnormalities which result from improper and insufficient training of the senses. All of the "raw material" of thought comes through the senses. All of the raw material acted upon by memory, imagination, judgment, comparison, and reasoning is gained through sense experiences. It can be said without fear of successful contradiction that if the education of the senses be neglected all subsequent education will partake of a vagueness, haziness, and inefficiency which will never admit of complete cure. From any sense-error any other conceivable error may arise. And yet how many methods of instruction there are so inopportune and inefficient that they really dwarf the senses. Train the senses of the child and the rest of the mental development will almost take care of itself. The truly successful teacher is the sense teacher, for she is trying not merely to impart knowledge but also to develop mental force. In cultivating the powers of sense of the pupil we accomplish four things for him, each one of which is vitally important: (1) We make his knowledge more accurate and clearly defined; (2) we make his knowledge more comprehensive and complete; (3) we develop his mental power; (4) we make his acquisition of knowledge pleas-

ant and delightful because the natural order is followed—"first the blade, then the ear, then the full corn in the ear."

My third premise I take from the domain of abnormal psychology. It is this: The process of mental disintegration attacks the higher, more complicated, and more recently developed faculties first, and the simplest and those earliest developed are the last to be affected. This premise requires but brief discussion, for its application is at once seen. It teaches us that when mental disintegration once sets in, it is the finest mental faculties that first fall prey. These minor abnormalties are serious then from the beginning. They may not be observed and made certain of until terrible havoc has been wrought. Reason, both deductive and inductive, may have crumbled and fallen into decay, and imagination, memory and the powers of sense be as perfect as before. It is necessary to be constantly on the alert for even the minor mental abnormalities in children so that mental disintegration of the highest mental faculties may not proceed too far before remedial measures are sought and applied. If the closest observation is not maintained in reference to pupils in whom minor mental abnormalities are even merely suspected, the loss may become irreparable.

Inasmuch as fatigue is the most common source of danger in this connection, close watch should be made for fatigue signs. Some important discoveries have been made with reference to fatigue and its influence upon mental and physical development. Fatigue is a physical poison, and bodily fatigue always induces mental fatigue. The nature of the chemical poison generated by fatigue has been investigated by the Russian chemist Wedensky, as well as by Maggiori and Mosso, in Italy. Overstrain at school, by producing fatigue, may be the occasion of destruction and disintegration of bodily tissue, and also cause serious and permanent mental defect. The best period of the entire day, both with respect to mental quickness and mental vigor, is between the hours of 8 and 10.15 o'clock in the morning; the worst is between 11 and 12 o'clock. The period between 1 and 2.30 o'clock in the afternoon is the third best, while that between 3 and 4 o'clock is second best. The heaviest school work should be assigned to the hours when the child's mind acts most vigorously and with the greatest quickness, and the lightest work should be so arranged as to come at the period of greatest mental depletion.

The teacher and parent should be especially observant with reference to "abnormal nerve signs" as occasioned by fatigue, misfit methods, and inopportune studies. The more common abnormal nerve signs that presage danger are disturbances of balance, twitching of hands and face, eye movements, postures of the head and hands, irritability, inattention, excitability. If the child slouches and shows no exact symmetry of balance, if the voice is of poor tone, if he can not fix his eyes well, but looks about by moving the eyes and not the head; if there is a bagginess of the underlids of the eyes, if he be inattentive and devoid of interest in the usual school occupations, if his response in action be slow and uncertain, one may be assured that such a child is fatigued to the point of danger.

Again, since we know the order in which the mental faculties disintegrate, and we do, we may know how far the mental disintegration has proceeded. If reasoning only be affected, the child is not suffering as much from mental abnormality as if the memory, judgment, or imagination be diseased. His *mal* is not so deep seated as it would be in the latter case. This is a point of much value, for if we know just how far the processes of mental disintegration have proceeded, we know best what occupations and methods we are to employ in order to counteract the disease.

My fourth and last premise is taken from the province of physiological psychology. It is the principle of localization of brain function. By this we mean that not all parts of the brain surface respond to the same stimuli and give birth

to the same kind of sensations. Neither are all parts of the brain cortex concerned in sending forth motor impulses of the same group or class. We know, for example, that any excitation of the nervous elements in the back part of the head give rise to visual sensations. It makes little difference whether they come through the eye or not—a slight mechanical jar at the back of the head is sufficient to cause one to see "stars." The brain center concerned in moving the finger is entirely distinct and separate from the one concerned in moving the arm. The outer gray rind or cortex of the brain is therefore a very complex organ, or rather, it is more like a very complicated keyboard, the responses coming in from those parts of the body that are in direct relation to certain specific forms of sensation. As Professor Hering, of Austria, says, "The different parts of the brain hemispheres are like a great tool box with a countless variety of tools. Each single element of the cerebrum is a particular tool. Consciousness may be likened to an artisan whose tools gradually become so numerous, so various, so specialized, that he has for every minutest detail of his work a tool that is especially adapted to perform just that precise kind of work very easily and accurately. If he loses one of his tools, he still possesses a thousand tools with which to do the same work, though under disadvantages both with reference to adaptability and the time involved. Should he happen to lose the use of these thousand also, he might retain hundreds with which to do the work still, but under greatly increased difficulty. He must needs have lost a very large number of his tools if certain actions become absolutely impossible, but the loss of a single tool is in every case just that much of a disadvantage." This quotation translated from Hering states very clearly the exact physical basis of education. If the child is to have full use of all the nerve cells of his brain cortex, they must be developed—educated—by use, by activity. If they are not brought into action by occupation, sense experiences, mental employ, they atrophy.

Now, at birth the child possesses all the brain cells it will ever have. Brain cells do not proliferate after birth. If they are not exercised they entirely drop out of existence—they die. The problem before us is to educate the entire brain of the child—it is given him for that purpose. We can give him this complete education only when we approach him through every one of his avenues of sense and educate him into a wide range of motor activity. Life is growth. A brain cell that does not grow is dead. A brain cell can not grow save through exercise and use. All the brain cells can be made to grow only when the school and home environment of the child is such as to appeal in every possible way and with sufficient energy to arouse the child's many-sided activity. If a certain group of nerve cells is uneducated, is allowed to die, then the child becomes mentally and nervously abnormal in just so far. Brain disorderliness is due more to one-sidedness of methods of education than to any other possible cause.

Before closing I wish to make reference to certain specific cases: H. is a boy of fair complexion, ranks twenty-fourth in his class, and is continually losing his hold on school work. The signs of nervous exhaustion were overmobility; he was decidedly fidgety; fullness under each eye, indicating that he was a sufferer from headaches. These were the most noticeable, though other "nerve signs" were present. It would be a mistake to leave a weak boy like that to do nothing all day, merely waiting for him to grow stronger. Such children are especially in need of education and training, but "a detailed study of abnormal nerve signs in the child will give assistance of practical value to those in charge of nervous and delicate children. They will reveal certain points to be aimed at in physical training. A knowledge of the brain disorderliness indicated by the signs will give plain hints as to the form of mental disorderliness likely to be met with in the pupil." (1) For instance, wandering eye movements lead to inaccuracy in copying work and in arithmetic; children with twitching finger move-

ments have spontaneous thoughts arising that lead to mental confusion and inaccurate answers to questions, also interfere seriously with memory. The child slow in all movements and slouching is apt to be dull in mental action until his posture, attitude, and response are improved upon. "Want of facial expression, grinning, frowning, protrusion of the tongue, ill-balanced hand postures, want of motor control, are all cardinal signs of brain disorderliness." The parent and teacher must patiently labor to remove such abnormal nerve signs and the brain disorderliness corresponding. Closely observing the circumstances under which each of the given signs most frequently subsides, one is enabled to carry on the best form of brain training. Nature study, in that it naturally calls all the child's mental powers into activity, is of much more value as a corrective and educative force than books alone. How the "The Barefoot Boy" of Whittier is to be envied in this regard.

Oh for boyhood's time of June,
Crowding years in one brief moon,
When all things I heard or saw,
Me, their master, waited for.
I was rich in flowers and trees,
Humming birds and honey bees;
For my sport the squirrel played,
Plied the snouted mole his spade;
For my taste the blackberry cone
Purpled over hedge and stone;
Laughed the brook for my delight
Through the day and through the night,
Whispering at the garden wall,
Talked with me from fall to fall;
Mine the sand-rimmed pickerel pond,
Mine the walnut slopes beyond,
Mine, on bending orchard trees,
Apples of Hesperides!
Still as my horizon grew,
Larger grew my riches too;
All the world I saw or knew
Seemed a complex Chinese toy,
Fashioned for a barefoot boy!

By nature study in the best sense, however, is not meant teaching science, but scientific teaching.

I can not refrain from calling attention to the very considerable danger arising from home study, especially in young children. In the so-called "study" at home the child becomes accustomed to certain irregularities of work that should never be cultivated. We should find out how much the child can do in a school day; let the child do such work at school, and let it feel that it leaves the school as the business man would his desk, with the business of the day done, and the satisfaction of well-deserved rest. Moreover, as Dr. Meyer has pointed out, "work at home creates that martyr-spirit with which the abnormally conscientious pupils pride themselves on having so much work to do, and on having to avoid company and society. These children are craving for admiring sympathy, and do this later in life, to the disadvantage of those who live up to more rational and sanitary rules."

Further, I must say that I have never seen a case of brain disorderliness that was not benefited by physical training. Evidence is available on this point from the comparison of a large number of pupils of schools with and without physical training. Physical training of the right sort, properly adapted to the child, tends to improve his brain condition, either preventing or removing disorderliness in motor and in mental action, and promotes healthy activity in both connections. This is absolutely true of children well-made in body, as well also of those in some slight degree below normal. A case in point: You may have in your school a

child whose mental processes are slow and limited, though fairly accurate. You ask him a question; his answer is slow in coming. You can best quicken the mental processes of such a child by quickening the interaction of his eye, ear, and hand by games of competition, such as baseball or tennis, where the action must be quick or failure result.

I have thus briefly considered some of the causes of nervous and mental abnormalities—how they could and should be checked. The school is not alone guilty, but only accessory. It is indeed distressing to the patriot and humanitarian to perceive how the mass of nervous evils, and at the same time mental and moral weaknesses and sins, increase in the people and how many are followed by these abnormalities from the cradle to the grave.

CHAPTER XI.

MISCELLANEOUS EDUCATIONAL TOPICS.

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I. MILITARY DRILL IN THE SCHOOLS OF THE UNITED STATES.

[By Henry M. MacCracken, D. D., LL. D., chancellor New York University. From an address delivered at Tampa Bay convention, February 9, 1899.]

* * * The total number of boys in the public high schools of America receiving military drill is 8,779; in the private high schools, 6,788.

I have selected four States that emphasize military instruction in either public or private high schools. The differences are striking.

CONTRAST MASSACHUSETTS AND NEW YORK.

In Massachusetts 12 per cent of public high schools have drill, enlisting 27 per cent of the boys, but only 5 per cent of private high schools have drill, enlisting 3½ per cent of the boys.

In New York only 1 per cent of public high schools have drill, enlisting 1½ per cent of the boys, but 29 per cent of private schools have drill, enlisting 26 per cent of the boys.

CONTRAST VIRGINIA AND SOUTH CAROLINA.

In Virginia no public high schools have drill in military tactics, but 13½ per cent of private high schools have drill, enlisting 16½ per cent of the boys.

In South Carolina 5 per cent of the public high schools have drill, enlisting 28½ per cent of the boys, and 8½ per cent of the private high schools have drill, enlisting 15½ per cent of the boys.

The following conclusions are easily manifest from a study of these figures:

First. It is not a question of sections of the country as to where military instruction is given and where it is omitted. It is, however, a question of States. The States that are highest as to giving military instruction in public high schools are Massachusetts and South Carolina.

Second. Even in a given State there may be superior attention given to military tactics in public high schools, and comparative neglect of the same in the private high schools and academies close by. This is seen, strikingly, in Massachusetts. The opposite, also, is equally manifest: That a State may excel—like Pennsylvania or Virginia—in the proportion of her academies and high schools that instruct in military matters, and yet her public high schools be far behind in the same subject.

I have said above that it is a question of States as to the condition of instruction in military tactics. I will now add to this, that it seems, also, to have been—in at least some of the States referred to—a question of one or two men that had convictions on the subject taking the lead in introducing and emphasizing this particular side of education.

The history of its introduction into the high schools of Massachusetts, in the National Commissioner's report of half a dozen years ago, has given abundant proof of this. November 3, 1863, a petition was presented to the school board of Boston, signed by Edward Everett and others, praying that instruction in military gymnastics and drill might be introduced into the public schools for boys. The school board favored the plan, "both as a means of physical training and ultimately of national defence." They decided to try the experiment in two high schools and two grammar schools, and employed an instructor for that purpose. The next year the experiment was reported a success by the committee of the board and, also, by the masters of the schools. Two hours a week were to be given to the military drill, not including voluntary drills out of school hours. It was to include all the grammar-school boys of sufficient size. The whole matter was put under a committee entitled "a committee on gymnastics and military drill." The experiment met one fate in the high schools and quite another in the grammar schools.

In the latter it endured only a single year. In the high schools, on the other hand, the report of 1892 states:

> In the high schools military drill continues to this day under the same instructor, whose service has been continuous since its inception. Since 1865 no serious effort has been made to abolish it, and the Boston School Regiment is now one of the most popular features of the school system. It is sustained as a means of physical training, because (1) of its freedom from accident or injury to the boys; (2) the boys enjoy it; (3) it is a good mental and moral discipline—the boy learns to obey, and that is the first step toward learning to command; (4) it helps to form character, conducing to patriotism, chivalry, love and defense of country and home; (5) it is a powerful aid in maintaining a high order of discipline in the schools and an incentive to study, as the officers are the rewards of good conduct and scholarship; (6) with limited means for physical training more can be done in the time allotted to the drill—two hours a week—than by any other method yet discussed, for the same number of boys.

Passing down and out from the high schools to the grammar schools and statistics are almost utterly wanting.

In a pamphlet furnished me by Mr. J. J. Little, president of the New York City board of education, I find the latest and only trustworthy statistics on this subject. Three cities only in the United States make military instruction obligatory in the grammar schools: Newport, Ky., Colorado City, Colo., and Butte City, Mont., two of which are small cities in the Rocky Mountain region, and the third is practically a suburb of Cincinnati. Obligatory military instruction in grammar schools may be said hardly to exist. Four or five cities authorize voluntary instruction in military drill, namely, New York City; Geneva, N. Y.; Yonkers, N. Y.; Rochester, N. Y., and Winona, Minn.

New York City, in which I have my own residence, may fairly serve for an example of voluntary instruction. We offer boys the chance to take military drill if they and their parents choose, and if they are willing to foot the bills.

President J. J. Little writes me as to the extent of military instruction in the grammar schools: "We do have it in a few of our public schools; but it is, if I may use the expression, only tolerated—not recognized or encouraged."

The history of its introduction in New York City has been furnished me by Commissioner J. A. Goulden, chairman of a special committee of five to carry into effect certain action of the New York City board of education, adopted four years ago, December 5, 1894. This action was as follows:

Resolved, That the board of education of New York City cordially indorses the proposition looking to the formation of companies of cadets in the public schools under its jurisdiction, without expense to the city, the pupils, or the teachers, and without interference to the prescribed studies and management of the respective schools.

Commissioner Goulden called a meeting of all the principals of male grammar schools, of members of the board of education, and others, who established an advisory council for military instruction in the public schools, of which Colonel Goulden was made president. The boys were formed into companies, battalions, and regiments, and named the American Guard. At the Memorial Day parade of that year 16 regiments, numbering 10,000 cadets of the American Guard, making a full corps of three divisions, under the command of Gen. J. J. Little, took part.

All this, let it be noted, was done under the rule that forbade expense to the city, the pupils, or teachers, and without interfering with the prescribed studies and management. Since expense was necessarily incident to the work, it was not possible to continue the drill in a systematic way, except where the parents or citizens were persuaded to undertake the burden.

In 90 per cent of the grammar schools in the city the drill inaugurated in 1894 was ephemeral for the very evident reason named by President Little. The whole burden of the effort was placed upon parents and teachers, the parents to contribute uniforms and equipment and the teachers to contribute their time and trouble.

To sum up as to the extent of military drill in the grammar or common schools of the country, I conclude that out of an army of 7,000,000 boys enrolled in the grammar schools not one in a thousand has any opportunity of instruction in military tactics, and so far as I have been able to learn not a half dozen communities in America have imposed this work upon the grammar or common school, to be paid for at public expense.

The usefulness and value of attempting this work in the grammar school will claim attention in a moment.

The first question touching the desirability of military instruction concerns the public and private high school. I have not attempted to ask an opinion on this from every State of the Union. I have asked from the States that have given the subject the greatest attention, Massachusetts being preeminent for the extent of the work in the public high school, and New York in the private high school. Outside of these States, I have sought a few opinions from cities where special attention has been paid to this matter. I will begin by giving you the opinions collected by me which touch the public high school only.

As I have shown above, Massachusetts is the only State that has 10 per cent of her schools enlisted in this cause. Let us hear what the Massachusetts high school people say of results.

For the purpose of this address I wrote a letter to each principal of a public high school in the States of Massachusetts, New York, and Pennsylvania that gave instruction in military drill to more than fifty young men. I did the same with each private high school or academy. I asked a judgment as to three points: 1. The usefulness of military drill to the student's physical culture. 2. To his intellectual and moral well-being. 3. To making him valuable as a citizen soldier.

Out of 22 high schools in Massachusetts, I have received replies from 16. Seven of these are from Boston, the other 9 are from smaller cities in Massachusetts. I shall give first the answers from Boston, selecting only the heart of each reply.

Principal Moses Merrill, of the Public Latin School, Boston, writes:

It is better than no physical exercise at all; therefore my opposition is not strenuous. The school is large, nearly 700 boys, and the drill accommodates itself to our circumstances better than any other form of exercise yet proposed or provided for.

Head Master Robert E. Babson, of the English High School, Boston, writes:

The drill is one of our most effective means of discipline, which I should be exceedingly sorry to lose. The military training our boys receive enables them to learn their duties as soldiers, when they come to enter the volunteer militia, much more easily.

Principal George C. Mann, of the West Roxbury High School, writes:

As a means of physical culture, it is very narrow. The childish, show features of the whole system are the ones that most appeal to the boys. I accept it, but do not value it particularly.

Head Master John C. Ryder, of the Brighton High School, Boston, writes:

Military drill, when properly conducted in high schools, is of much value in physical development. Military drill quickens a boy's attention; it teaches prompt and implicit obedience to commands. Next to the graduate of the Government military schools, the public schools turn out the most valuable educated soldier material to be found in the country.

Head Master J. O. Norris, of the Charlestown High School, writes:

The setting-up exercises are excellent gymnastic movements. I prize the drill highly for the training it gives boys in promptness, in ready obedience, in the subordination of self. It seems to me to be a powerful factor in contributing to good training of the mind and character.

Head Master Charles J. Lincoln, of the Dorchester High School, writes:

We find it an excellent break in the midst of the confinement of school. As over against the gymnasium, it is found much more interesting. The drill serves a most excellent moral purpose. Many a young man, who tremblingly at first has stood before his company as captain and given his commands, I have seen transformed into a leader of men before his education in school is completed. It becomes a powerful engine of discipline in the school.

Principal John F. Eliot, of the East Boston High School, writes:

I favor it as at present conducted. The effect is good for the physical culture; it sharpens the boy, in a way, intellectually, and, in a sense, improves his discipline and moral well-being.

Outside of Boston, 9 high school principals are heard from.

Principal Alton E. Briggs, of the Chelsea High School, writes:

I am not an enthusiast upon military drill in public schools. If properly presented, however, I realize that it may have its beneficial effects.

Principal Charles H. Howe, of the Wakefield High School, writes:

There are some advantages to military drill in the school, but not sufficient to balance the disadvantages.

Principal Charles C. Ramsay, of the B. M. C. Durfee High School, Fall River, writes:

There is considerable intellectual discipline and no little moral training through military drill in school. Military drill increases the usefulness and value of the pupil to the State and nation as a future citizen soldier.

Principal L. H. Owne, of the Woburn High School, writes:

I am a believer in the drill. It does very much toward putting our boys into proper form. Although we have the drill but once a week, we have the setting-

up exercises every day. I believe that a country with a small standing army should require military drill in the public schools.

Principal Forrest Brown, of the Amesbury High School, writes:

Military drill was introduced into our high school eight years ago. From that time it has been an important factor in the life of the school. The town furnishes an instructor, who drills the company once a week. The results are extremely gratifying. Our overcrowded high school curriculum may well be pruned for a place for military drill.

Principal A. W. Bacheler, of the Gloucester High School, writes:

We have no doubts regarding the usefulness of the exercise. The social features of the organization are helpful. Twenty-seven of our boys went to the war of 1898. Without exception, they stand high as good soldiers. Our entire original equipment, maintenance, and extraordinary expenses have been met by voluntary contributions of the citizens. The drill occupies about two hours per week, forty weeks per year. It is compulsory for all except those physically disabled; is ranked as a study, just as algebra or Latin. We have never employed the services of a special instructor.

Principal A. E. Tuttle, of the Milford High School, writes:

I have had military drill in high school as a regular part of the work for about twelve years, and I should dislike very much to have it stricken out of the course of study.

Principal Charles S. Morse, of the New Bedford High School, writes:

I consider military drill beneficial in all the three lines outlined.

Principal Edward Parker, of the Brockton High School, writes:

I regard the military drill in a high school as beneficial.

Coming on to the State of New York, the number of public schools giving military instruction does not reach a half dozen. From three of these I have received reports.

Principal Thomas O. Baker, of the Yonkers High School, writes:

Military drill gives boys a good carriage, good form, and a dignified bearing. It teaches habits of obedience, makes boys attentive, and increases their self-respect. Anything that strengthens body and mind tends to make more useful citizens. Schools giving the drill should have a large drill hall either in or adjacent to the building.

Principal Alexander Falconer, of Waterford, N. Y., writes:

Our military organization is known as the "Waterford High School Cadets." The organization is a volunteer one. The money to sustain it is raised by subscription. The cadets are uniformed the same as the regular army. The equipment is Springfield rifles cut down, weighing about 9 pounds. Our drills are weekly from October to June, and in charge of a National Guard officer. I take the company to camp for about ten days each year. The legislatures of the several States would do a wise thing to make it compulsory for every able-bodied boy to spend a portion of his school days in military drill.

Principal A. A. Lavery, of Ballston Spa High School, writes:

It is one of the best means of physical culture; not too severe for the weak, not too light for the strong. As a means of curbing selfishness, establishing an esprit du corps, and keeping the boys from the rough play of the streets and the rougher companions it is one of the best. The individual knowledge of a gun (inbred from the cradle) has made America from Bunker Hill to San Juan.

In like manner in the State of New Jersey are only two schools giving military instruction. I have a report from each of these.

Principal W. H. Brace, of the Trenton High School, writes:

It gives to a youth soldierly bearing, which includes erectness of figure, expansion of chest, and correctness of movement. The intellect is benefited by the cultivation of the faculty of attention, and by the development of the power of

application. A true military training intensifies patriotism and imparts dignity, manliness, and a well-bred carriage and address.

Principal I. W. Travell, of the Plainfield High School, writes:

We have now for five years had a cadet corps organized among the students of our high school. For commandant of the company we have availed ourselves of the free services of a man of military training living in the town. Its main contribution to the intellectual welfare of the boys lies in the attraction it exerts to keep some boys in school; the moral effect depends almost entirely on the character of the commandant and the leading student officers.

In the State of Pennsylvania there are no public high schools of importance giving military instruction.

In the State of Ohio are two, from one of which, the high school of New Lexington, I have a report through Supt. James C. Fowler. His statement has elements that are unique. He writes:

It gives the students physical culture in matter of carriage, It gives the pupils fine intellectual drill. He is valuable to the State as a citizen soldier, because he is more of a developed man, physically and morally. We give our boys (public school cadets is what we call them) wire swords to drill with the first two years, and then light guns after that. (We have not got guns yet, but hope to be able to have them before long.) The swords are made out of heavy wire. They can not by accident or any other way hurt themselves or anyone else. We hold them in organization for one complete year, and then reorganize at the beginning of the school year. Take them into camp one day each year on some pretty day in May or June, let each one furnish provisions enough for himself, also each carry a tin cup on a string over his shoulder. Get a team to haul anything they may want to take to camp (baseball bats or anything else). Get brass band to go with them out of city (out to suburbs) from armory (schoolhouse). March out about 2 miles to some good grounds near good water and go into camp, placing out pickets in regular form, and carrying on the day's work same as in regular camp. Let those who are off duty play ball and have a good time. This is a gala day with our guards. Also, bring them out on all big days, Decoration Day, etc.

In the District of Columbia all of the four high schools offer military drill.

Director F. R. Lane, representing the high schools which are attended by white scholars, writes me thus:

First. Experience shows that military drill produces men of better courage and far greater vigor.

Second. Much good is done by training cadets in obedience; first as privates in the ranks, then as officers, they are taught self-control, tact, and responsible use of authority.

His report adds:

At the Eastern school there is a faded flag of "blood and gold," torn from a roof by an army that entered Manila and sent back by a soldier boy as a memento to his old school. Two former cadet captains from the Central school went up the hill in the desperate assault upon San Juan.

Principal W. S. Montgomery, of the Washington High School, colored, writes:

Participation in the military drill here is entirely voluntary, but its utility is magnified constantly that a large number of boys may join.

His report adds:

The military organization includes a battalion of three companies, and the manual for instruction is the same as prescribed for the infantry arm of the Regular Army. The instruction and exercises do not interfere with the regular book work, but rather prepare for healthful and successful mental effort. The plan of selecting officers is an incentive to scholarship, 75 per cent of the rating for the battalion promotions being based on the record made in school work. Company and battalion work including foot movements, the manual of arms, dress parade, and loading and firing have consumed the greater part of the limited time allotted to this branch. It is to be remembered that a part of but two days in each week is given for training the boys.

Before I sum up this evidence from the public high schools, I will present the reports of certain private high schools. Of the ten private high schools in New York, I have answers from a few.

Dr. White, head master of the Berkeley School, New York City, who has been personally engaged in the work of military drill for nearly thirty years, says:

The drill in the high school ought to answer every purpose. The objection that the teaching of the military drill to the boys inculcates a love of war is finical, and it would have rather the opposite tendency, because all the curiosity as to the matter of handling arms is eliminated by the miniature rifle. As to rendering the boy valuable to the State as a citizen soldier, its advantage is not as great as might appear at first flush, because, as everyone knows, the volunteers are very speedily put into shape for actual warfare; but it does render the student more quickly eligible for promotion through the various offices in a regiment, because he starts with the elementary knowledge pretty thoroughly acquired.

Principal Henry P. Warren, of the Albany Academy, Albany, N. Y., writes:

The setting-up drill, which is an essential part of the military drill, is invaluable as a physical exercise. I do not regard it as of very much importance intellecually, but its value in moral training is considerable. Three years of implicit obedience followed by three years of responsibility first as private, then as officer, are very valuable.

The report of the military academies may naturally be expected to favor military drill. Some may even say the reason of their teachers favoring military drill is their membership in a military academy. Perhaps the converse is just as true, that their membership in a military academy is on account of their belief in the military drill.

Dr. Henry C. Holbrook, Principal of Holbrook's Military Academy, Sing Sing, N. Y., writes:

We have had a military school here for about thirty years, and we have no hesitation in saying that the military training has a great deal to do with the physique of the boys. It begets a manly carriage, develops the chest, and shows a boy how to handle himself. The intellectual and moral well-being are helped on. Boys get habits of order and system. Another advantage, particularly in a school like ours, which is composed almost entirely of rich men's sons, is that the uniform prevents all display in dress, and is a great leveler of distinctions.

Principal C. F. Brusie, of the Mount Pleasant Military Academy, Sing Sing, N. Y., writes:

The military drill contributes very materially to the proper development of boys. The general health of our boys is much improved. There is danger that the inculcating of mere military discipline may come in the military school, to take the place of the development of moral character, of moral purity and uprightness. As directly contributing to the military strength of our country I should not consider this military training of the first importance.

Superintendent S. C. Jones, of the New York Military Academy, Cornwall, N. Y., writes:

The habits of promptness, unquestioning obedience, and truthfulness are fundamental requirements of a military organization, and undoubtedly have a decided effect upon the mind and morals of a cadet.

Already in this address I have given the history of military drill in certain grammar schools of my own city—New York. I have spoken also of my failure to obtain any account of grammar school work in other cities. In discussing the value of grammar school work I must therefore confine myself to these two heads—first, the reports on the value of the work from the public schools of New York, which are actually conducting it; second, opinions of the desirability of grammar school drill as gathered from the principals of the high schools, whc are giving such instruction. These two classes of witnesses seem to me to be more competent than any others to give a judgment on grammar school work.

Of the four or five grammar schools in New York giving military instruction, I have reports from the following:

Acting Supervisor M. E. R. Alger, of the New York School for Truants, writes:

To the physical education of the student I pronounce it excellent.

To his intellectual and moral well-being I find it is of great benefit, inasmuch as it stimulates the patriot fervor and teaches self-control, and imbues him with military ardor.

The third question teaches him obedience and proper recognition of authority.

In my opinion it would be of greater benefit and of far more value to the pupil than so much manual training now in vogue. I introduced it here in the Truant School last May, and it has been a very great success.

Principal Thomas Moore, of Grammar School No. 93, writes:

Military drill in the schools is a great aid to the proper development of the boy—morally, mentally, and physically. It tends also to inspire patriotism, and to make him valuable to the State and nation as a citizen soldier.

Principal D. E. Gaddis, of Grammar School No. 54 writes:

I have given the subject of military drill in our schools much thought and years of trial, and the conclusions at which I arrive are based, not on theory, but on experience. Military instruction produces a liking for school. The dry old routine of study, study, all day long is brightened by a little play. The habit of attention is well developed in company drills, and produces fruit in the class room, as the boy listens from habit. Manners are improved. On being spoken to by his teacher, the pupil stands on both feet, and with head up gives a distinct answer. Greater care is given to personal appearance. Shoes are polished, collars are worn, and clothing brushed. The awkward, clownish boy, who lops about in his seat, whose feet appear to be in his own way, who is ashamed to speak to a lady or gentleman, is by means of this drill transformed into a frank, manly fellow. Much good is done our teachers. The lack of power to govern is the chief source of trouble. If these young teachers were put through a thorough course of drill, if they were taught to obey promptly themselves, they would be much better qualified to enforce discipline in the class room.

Principal E. H. Boyer, of Grammar School No. 87, writes:

Military drill of the boys who desired it was begun in Grammar School 87 in 1894, the consent of each parent having first been obtained. Uniforms, costing less than the average school suits, were bought by the parents, and about one-third of the membership of the school was enrolled in what was called the First Battalion American Guard.

Drills, including as the most essential feature the setting-up exercises, began in March, 1894. They have been continued until the present year. Arms were bought from the proceeds of a voluntary entertainment provided by the friends of the school. The chief motive which controlled the introduction of military exercises was the desire to educate the wills of boys in such a way as to secure from them prompt, exact, and cheerful obedience. After the simple military evolutions and the manual of arms were thoroughly learned and the element of novelty was eliminated the drills became educational, in this special direction, in a very high degree. The time devoted to the drill after school hours was better spent in that way than it would otherwise have been by the majority of the boys.

The second class of witnesses in regard to military instruction in grammar schools consists of the principals of high schools who are engaged in military instruction. I have asked the opinion of a score or more and will present them in a very brief shape.

Director Lane, of the Washington High School, says:

Military drill was a failure in the grammar schools for lack of money and trained supervision.

Principal Montgomery, of the Colored High School, of Washington, says:

The various setting-up exercises might be readily introduced into schools below the high. The quick attention to orders, the rapid execution of commands, the spirit of obedience and regard for authority, all may well be inculcated there.

Principal Fowler, of New Lexington, Ohio, says:

Grammar school boys should have the drill the same as the high school.

Principal Baker, of the Yonkers (N. Y.) High School, says:

I should not advocate military drill below the high school period. This age is best suited for the purpose.

Principal Falconer, of Waterford, N. Y., says:

I favor beginning the work the last year in the grammar school. The advanced grammar grades will reach more boys.

Principal Jones, of the Cornwall Military Academy, says:

I have not been favorably impressed by the little I have seen of the attempt to introduce military drill into the public grammar schools. Some good must come from the system, but it does not seem to be sufficient to justify the necessary labor and expense.

Principal Warren, of the Albany Academy, says:

The serious objections to military drills in grammar schools are: First, the expense. Boys soon tire of a Quaker gun. The drill guns would cost, by the thousand, perhaps $5 apiece. The expense for the guns alone would be not less than $5,000 for Albany. Uniform dress would be impossible. Even uniform caps would be impossible, except in the upper two classes.

Second, there would be a scarcity of the upper-class grammar school boys to act as officers.

Third, I raise the question whether it is wise to turn the thoughts of children during the impressionable years of their lives to war. It is the last and most terrible argument used by man. To make soldiers out of our boys is to encourage the drift to militarism.

President Fetterolf, of Girard College, Philadelphia, says:

I am convinced as to the desirability, but as to the possibility I am not prepared to express any views.

Principal Brace, of the Trenton (N. J.) High School, says:

Military drill in the grammar schools would certainly be an auxiliary of wonderful potency in the preparation of young people for the higher courses of education.

Principal Travell, of the Plainfield (N. J.) High School, says:

I do not believe it is wise to organize military companies among the grammar school boys, but should advise gymnastics instead.

The school principals of Boston speak on the grammar school question as follows:

Principal Mann, of the West Roxbury High School, says:

I believe the boys are quite young enough in the high schools, and that it is undesirable to begin military drill earlier, or to keep it up longer than three years.

Head Master Ryder, of the Brighton High School, says:

I do not think it at all desirable to introduce military drill into the grammar schools. The boys are not old enough to do the physical work required of them. They would be obliged to use toy guns.

Principal Norris, of the Charlestown High School, says:

My opinion would not be favorable to military drill in grammar schools for these reasons:

First, the boys are generally too young.

Second, it would be to put the subject into the curriculum for so long a time that it would become irksome. In one or two years they learn all that it is wise to teach them.

Head Master Lincoln, of the Dorchester High School, says:

Certainly only the very highest classes should attempt it, and only the larger boys. I am not much of a believer in wooden or sham guns, which would be necessary for most grammar boys.

As an interlude, at this point let me introduce an opinion received by me a few hours before leaving home from a committee of the Grand Army, Col. H. H. Adams as chairman, and Herman P. Smith, of New York, who advise that hours be given in grammar schools, to be named, not "military drill," but "patriotic exercises," including, besides the setting-up drill, patriotic songs and recitations; then in the last year but one of the grammar grade there should be, besides the setting-up drill with company formations, also the drill with arms after school hours in a public armory, but that this drill outside of school be entirely voluntary, and that no uniforms be required.

Massachusetts principals outside of Boston declare themselves thus:

Principal Briggs, of Chelsea, says:

I should not advocate its introduction into the grammar schools.

Principal Ramsay, of the Fall River High School, says:

It would seem to me that the boys were too young to do much of the drill, and especially to be charged with the responsibility of military officers. It is better for them to wait until the high school period or until they are old enough to join some existing local military organization.

Principal Owne, of the Woburn High School, says:

I would require drill in the last two years of the grammar school.

Principal Brown, of the Amesbury High School, says:

This is a matter of local conditions. In towns where there are nine years before the high school there is some training desirable for the pupils of the ninth grade.

Principal Bacheler, of the Gloucester High School, says:

The higher grades of the grammar school might adopt profitably the military exercise.

Principal Tuttle, of the Milford High School, says:

I should hardly favor the introduction of the drill into the grammar grades, except, possibly, the setting-up exercises.

Principal Howe, of the Wakefield High School, says:

I should consider military drill entirely out of place in the grammar schools.

I offer, as an induction from the data that has been given us, two propositions:

First, instruction in military tactics in public and private high schools, so far as tried, has been eminently useful to the boys and to their teachers and the nation, and therefore this convention should organize a propaganda to secure the extension of instruction in the high schools until, instead of less than 5 per cent of the public high schools giving such instruction, there should not be 5 per cent neglecting this instruction. Also in the private high schools, so that instead of less than 15 per cent in any of the five divisions of our country that give such instruction, there should be less than 15 per cent not giving it.

My second proposition is that in communities where no high schools exist and where boys are continued in the grammar or common schools until they are 15 or 16 years of age this convention should encourage such schools to give military drill such as is elsewhere given in high schools.

Further, that grammar schools should be encouraged to introduce the various "setting-up" exercises as a valuable and easily arranged gymnastic. Beyond this, as a rule, the grammar school should not attempt any military tactics.

II. Uniform Financial Reports for Public Schools.[1]

To the Department of Superintendence of the National Educational Association:

The committee appointed at the Chattanooga (1898) meeting of this body to report upon a uniform style of financial school report for the use of cities or school districts, and also upon some form suitable for the use of State school systems, beg leave to report as follows:

The committee have not found it practicable to have a meeting of its members before coming to Columbus. Discussion of the matters committed to them has been carried on by correspondence, both between members of the committee and with others.

The printing of this report, so that it might be in the hands of the members of the department at this meeting, was authorized at the time this committee was appointed, but in view of the fact that the members have not been able to meet for final discussion of the matters intrusted to them until the assembling of the department here, it seemed best to have printed only the proposed form or schedule.

It is not probable that any form for school financial reports could be presented which would be entirely satisfactory to everyone. Your committee are of the opinion, however, that most persons would agree on nearly all important items, and that an agreement should be made throughout, even though, to some, the classification of a few minor items may seem arbitrary or incorrect.

While local conditions enter into necessities for expense in any public school system, yet one of the most useful means of estimating proper expenditures, and the necessity for particular expenditures, should be afforded by a study of the financial school reports of other similar cities or districts. As these reports are at present made they are of little use in this respect. Items given in one report are omitted from another. Items of income or outgo are differently grouped in different reports, and the statement is made in such a way that it is impossible to separate the items for the purpose of reclassification. In getting the cost of education per child, different items are put into the total cost of education, which forms the dividend, while sometimes the divisor is the number enrolled, sometimes the average number in daily membership, sometimes the average number in daily attendance.

One of the chief studies of a wise administrator of schools is to make the cost of education per child as low as consistent with the best service. Attention to this and to a comparative study of reports for a period of years, now that most of our school systems have become established on a somewhat similar plan, should give an idea of the average or normal cost of education per child. Having this, the manager of schools may know how expense in his system differs from this normal standard, and, if not normal, why it is above or below. This knowledge can not be arrived at, however, until the same items are included when computing cost of education, and the same divisor is used in obtaining the average. By careful comparative study railroad men know the average cost of hauling freight per ton per mile, and the cost per mile of transporting a passenger. Those administering schools should be as well informed upon the cost of education.

The two things one studying a report of school finances most desires to know are, first, the rate of direct local taxation for schools borne by the community reporting; and second, the average cost per child per year for the usual educational expenses. There are many items which, when given, are explanatory of these two and serve to correct the inferences which might be drawn from a bald statement of them.

[1] A report submitted to the department of superintendence of the National Educational Association, at Columbus, Ohio, February 23, 1899. Reprinted from the Educational Review

There are also many items, not directly related, which aid to give a correct estimate of the conditions surrounding the school organization reporting.

In arranging the proposed form, an attempt has been made to group items so that the two prime factors which such a report may show may be easily determined; and to give, in addition, information of interest and use in such comparative study of income, outgo, and conditions as those charged with the management of school systems find it profitable to make.

The heading of the blank form was, at the suggestion of members of the committee, made to cover cities, school districts, or school corporations. In some cases the city and the school district have the same boundaries; in other cases the school district covers territory not included within the limits of the city; in some cases the title varies, and the school district is called a school corporation. The proposed heading will permit the form to be used not only for cities but for any school district, or for any form of organization the purpose of which is to carry on public schools.

Taking up the items of the form, Nos. 1, 2, and 3 serve to show the rate of local school tax, and to determine how this rate in one system of schools compares with that in another. The proportion of the true value at which property is assessed for purposes of taxation varies so in different States and different cities that all of these items are necessary that a comparison may be made. A tax of 7 mills on the dollar, where property is, as in some cases, valued for taxation at only one-tenth of its actual value, is really much lower than a tax of 4 mills in a city where property is valued for taxation at two-fifths its actual value. The tax of 7 mills on the one-tenth valuation might be increased, on the same valuation, to a tax of 16 mills before it would be as great in reality as the 4-mill tax on the two-fifths valuation. A tax of 6 mills on the dollar, where property is assessed at one-fourth its actual value, is in reality only one-half as great as a tax of 3 mills where property is assessed, as in Massachusetts and in some other States, at its full actual value. With the figures given in 1, 2, and 3, valuation and tax rate may be reduced to a common basis and fairly compared.

Under the head of receipts, the ordinary and extraordinary sources of income are separated. The ordinary sources, items 4, 5, 6, 7, and 8, serve to explain each other, and also to explain No. 3. In some States little or nothing is received from State distribution or funds; on the other hand, in at least one Commonwealth, this State school fund is so generously endowed that with prudent care it should, in the future, carry a large part of the expense for public education. Where this source of income is large, the necessity for local taxation is correspondingly reduced. In cases where the county figures to a considerable extent as the unit of taxation, the necessity for tax in the local school district is likewise lessened. In many cases the amount received into the school fund from fines, licenses, and penalties is inconsiderable. On the other hand, this source of revenue is sometimes large—in some cases even providing the greater part of the funds needed for the maintenance of the schools. Where such a condition as this exists, the necessity for taxation, of whatever sort, is materially reduced. Cities or districts sometimes have unusual or temporary sources of income: gifts or bequests, interest on permanently invested funds, tuition of non-resident pupils, etc. These items, indicated in No. 8, serve to put all the facts before the reader of the report.

Receipts from money borrowed and from the sale of bonds are not normal or regular sources of income. The receipts from sale of bonds are generally to be applied to some particular purpose, usually the purchase of sites and the erection of buildings. Income from loans is a temporary makeshift. Nevertheless, these two items must be reported to give a correct understanding of the situation.

Expenditures seem to fall into three classes: The usual current expenditures necessary for the maintenance of the schools; expenditures for sites, buildings,

permanent improvements, and equipment; other expenditures which, for various reasons, are not put in either of the two preceding classes.

For the purpose of this report the first of these classes is by far the most important, for it would probably be conceded that from this item of current expenses should be determined the cost of education per child, the most important item to be shown. Most of the difficulties in preparing such a form as is here proposed are met in the attempt to agree upon the items which should be included and those which should be excluded from item No. 13. Item No. 12 is simple, including only expense for regular and special teachers, and for those engaged in supervising or directing the work of instruction. An agreement is easily reached upon most of the elements making up the total in No. 13. Here without doubt belong all expenditures for salaries of executive officers of the board, salaries of janitors, fuel, lights, water where this is purchased, material and labor for ordinary repairs to buildings and premises, the care of grounds, text-books where these are owned by the school board, school stationery, school supplies, both those for janitors and those used in the work of instruction, cartage and freight, advertising, election expenses, school census, legal expenses, postage, telegraph and telephones, etc. Your committee would also include sums paid for rooms or ground rented for the use of the schools. It may seem inconsistent to include rent here while excluding interest paid and interest estimated on value of buildings and grounds used for school purposes. Rent, however, is seldom a large item, and it seems best to class it as current expense.

Actual usage as to items included in "cost of education" varies widely in different cities. Perhaps in one case only part of what is included in No. 12, simply the expense for teachers, is included. In another city the cost of instruction and supervision, all of No. 12, is included, and this is reported as "cost of education." Sometimes to these items is added cost of janitors, fuel, and school supplies, while all other items are omitted.

It has been urged that to the items grouped under No. 13 should be added the sums paid for interest and also a sum for interest, estimated at the current rate upon the value of all grounds and buildings owned by the school district and used for school purposes. The item of interest paid upon bonds or upon temporary loans has been arbitrarily excluded from No. 13. This has been done because interest is not directly an expense for educational ends; because in many cities no debt exists and no interest is paid. If the item is included, it will in some cities weigh unduly in the showing of the cost per child. Whether school buildings and grounds shall be purchased by direct appropriations of funds from the school treasury, or by funds derived from the sale of bonds, is a matter regulated by each community for itself, under State laws, and one plan or the other is followed as the particular community considers advantageous. The matter is largely out of the management or control of those directly charged with administering the schools. Your committee have, therefore, recommended this exclusion.

The question might be raised as to including in No. 13 the interest upon estimated value of buildings and sites and permanent equipment. While it is true that the community is permanently deprived of the use for other purposes of the sums invested, its inclusion would be a wide departure from any prevailing usage. Estimates of the value upon which interest should be computed would vary largely, as one person after another in different years was called upon to make the estimate, and the item would become a variable factor, causing apparent cost of education to show strange increase or decrease. Your committee have, therefore, considered it wiser to exclude both interest paid and interest estimated from "cost of education."

Items 14 to 19, inclusive, show permanent investments in plant. The items are

separated because it is desirable to know amounts expended for each purpose. Some little perplexity may arise in classifying expenditures under Nos. 16 and 17. Probably window poles and shades and carpets should go under 16, while door mats should go with brooms under 13. The repairing or replacing of shades should probably go under 13 also. Maps, charts, globes, etc., with all original fitting up of laboratories and wookrooms, as well as additions of permanent pieces of apparatus, belong under 17, while the repair of apparatus and the replacement of the daily consumption and small breakage of laboratory material and utensils should be counted under 13, as should rebinding and repairs of library and reference books. Bookcases, etc., an improved heating plant, a new system of ventilation put into a building, fall naturally under 19.

Items 20, 21, and 22, not placed with either of the foregoing classes of expenditure, are desirable for information, and are therefore included.

Although this form for report does not resemble a bookkeeper's balance sheet or exhibit, yet item 24 is desired as a matter of information, as is also item 27. Items 25 and 26 are necessary to give a correct understanding of the significance of item 24. Items 28 and 31 are also desired as items of information, important as giving a full knowledge of the situation which exists in the reporting district. Nos. 29 and 30 modify considerably the significance of 28.

Items 32, 33, and 34 give an opportunity to estimate the cost of ordinary schools, free from complications with the unusual schools indicated in these items. They also give information as to what extraordinary educational responsibilities are assumed by the community.

Item 35 is inserted simply as information often desired, but frequently omitted from school reports.

Item 36 sheds light on the item following, and both of them are things well to be known when considering items 38, 39, and 40. These facts are not all strictly related to finances, but help in a view of the whole situation. They should often be borne in mind as correctives when considering items 3 and 44.

Items 41, 42, and 43 bear the same relation to 40 that 32, 33, and 34 do to the sum of 12 and 13. They permit the cost of education for the common schools to be separated and computed apart from that of the schools for special classes or purposes indicated in 41, 42, and 43.

There will no doubt be criticism of the selection of No. 40 as the divisor in obtaining No. 44. Both No. 38 and No. 39 were considered.

No. 38 varies so in different cities in proportion to the school population, and the average number of days each pupil enrolled is in attendance during the year varies so, that this does not seem to provide a divisor that is in any degree stable or reliable. Neither does the enrollment, in any great degree, determine the number of teachers or the school accommodations necessary.

For many reasons No. 39 seems the most suitable divisor. If computed in a uniform manner, the figures showing number in average daily membership would most nearly show the requirements for school rooms, furniture, supplies, and teachers. But it is not true that these figures are obtained by the same processes or based upon the same facts in different school systems. Usage varies so in computing membership in different schools, pupils in some cases being counted as members of the schools when in other cities the same state of facts would cause the child to be considered as no longer a member of the schools, that fair comparison is not apparently practicable by the use of this divisor.

Your committee are of the opinion that a divisor as little subject to misunderstanding as possible, and one based upon facts which are obtained in the same way everywhere, is of the first importance. The members believe this is provided by item 40, and we have therefore made that item the divisor to be used, in connection with items 12 and 13, to obtain what shall be known as the "cost of education."

Your committee further recommend that the accompanying form for reports of cities or school districts be used as a basis for uniform financial reports by State superintendents of public instruction:

Report of the school receipts and expenditures of city (or school district or school corporation) of ——— for the year ending ——— 18—.

1. Estimated actual value of all property in the city (or school district or corporation)
2. Assessed valuation of all property in city (or school district or corporation)
3. Rate of school tax levied on each dollar of assessed valuation of city (or district or corporation)

RECEIPTS.

4. Received from State apportionment or taxes
5. Received from county apportionment or taxes
6. Received from city (or school district or corporation) taxes
7. Received from fines, licenses, penalties, etc
8. Received from all other sources, except loans and bond sales (specify different sources)
9. Received from loans
10. Received from bond sales
11. Total receipts, all sources

EXPENDITURES.

12. Paid for salaries of teachers and supervisors
13. Paid for other current expenses, excluding interest:
    - Salaries of officers
    - Janitors
    - Fuel and lights
    - Text-books, including drawing and copy books
    - Stationery
    - Other school supplies
    - Ordinary repairs to buildings, etc
    - All other items of current expense (specify items)
14. Paid for sites
15. Paid for additions and new buildings
16. Paid for permanent furnishings and furniture
17. Paid for permanent equipment for manual training, science laboratories, etc
18. Paid for reference and library books
19. Paid for all other permanent improvements, such as grading, paving, etc. (specify different expenditures)
20. Paid for interest
21. Paid on principal of loans
22. Paid on principal of bonded debt
23. Total paid out, all purposes
24. Cash on hand at beginning of year
25. Cash on hand at beginning of year in fund for sites and buildings (included in 24)
26. Cash on hand at beginning of year in sinking fund (included in 24)
27. Warrants outstanding at beginning of year
28. Cash on hand at end of year
29. Cash on hand at end of year in fund for sites and buildings (included in 28)
30. Cash on hand at end of year in sinking fund (included in 28)
31. Warrants outstanding at end of year
32. Paid current expenses, evening schools (included in 12 and 13)
33. Paid current expenses, teachers' training schools (included in 12 and 13)
34. Paid current expenses, schools for defectives or other special schools (included in 12 and 13, specify different schools)
35. Bonded school debt of city (or school district or corporation) at end of year
36. Population of city (or school district or corporation)
37. Persons of school age, —— to —— years, in city (or school district or corporation)
38. Number pupils enrolled, all schools
39. Average number in daily membership, all schools
40. Average number in daily attendance, all schools
41. Average number in daily attendance, night schools (included in 40)
42. Average number in daily attendance, teachers' training schools (included in 40)
43. Average number in daily attendance, schools for defectives or other special schools (included in 40, specify different schools)
44. Annual cost of education per pupil (sum of Nos. 12 and 13 divided by No. 40)

Your committee find it impracticable, without more time than has been at the disposal of its members, to present a suitable form of report showing the important facts as to finances of State schools and educational institutions other than public schools.

Respectfully submitted.

CARROLL G. PEARSE, *Chairman.*
Superintendent of Schools, Omaha, Nebr.
W. W. STETSON,
State Superintendent of Public Instruction, Augusta, Me.
C. A. BABCOCK,
Superintendent of Schools, Oil City, Pa.
CHARLES M. JORDAN,
Superintendent of Schools, Minneapolis, Minn.
D. M. GEETING,
State Superintendent of Public Instruction, Indianapolis, Ind.
JOHN R. KIRK,
State Superintendent of Public Instruction, Jefferson City, Mo.
E. B. PRETTYMAN,
State Superintendent of Public Instruction, Annapolis, Md.

III. THE ORGANIZATION AND CONDUCT OF PROFESSIONAL SCHOOLS.[1]

By Robert H. Thurston, Director of Sibley College, Cornell University.

* * * The correct theories and methods of organization and conduct of professional schools of whatever sort are in essence the same. The courses of instruction in engineering, in trade, in manual training schools are similar in general character in their characteristic features; they are properly organized on similar principles and by similar methods and must have their relations to the academic schools, whether high or low, primary, secondary or collegiate, determined by the same principles. These principles, on the other hand, are by no means identical with and may not even resemble, those dictating the construction of the courses, the details of curricula, or the entrance requirements of the academic school.

The ideal system of planning the professional school would seem to be the following:

(1) Ascertain what are the needs and demands of the profession to insure the highest efficiency of its practitioners, the best result of its operation as an element of the industrial system of the nation.

(2) Determine just what portion of the professional training is practically and appropriately to be demanded of the professional school. Take this scheme, properly scheduled, as is the reasonable and proper requirement of the student entering the profession as a novice, with his strictly preparatory education completed, prepared to commence the acquirement of the art of that profession by practice and experience.

This scheme presumably should include a knowledge of the pure sciences underlying the art to be pursued, for such studies can not reasonably be expected to be acquired in later professional life. It must include so much of the applied science of the chosen vocation as can be safely and successfully incorporated into the curriculum of the school, for it is this which constitutes the claim to rating as professional. It should include such necessary and such desirable elements of the college curriculum as are not fairly to be expected to be possessed by a novitiate and which are needed to permit the acquirement of professional knowledge.

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[1] Reprinted from "On the organization of engineering courses, and on entrance requirements for professional schools."

The complete scheme of studies for the technical school of this higher professional class, obviously, thus comprehends these three main divisions: (1) As the ultimate and final preparation for professional work, certain distinctive and professional branches which are recognized as appropriate and needed for professional success; (2) certain branches of pure and applied science which are essential as preparatory to or as needed accompaniments of the distinctively professional studies; (3) certain accessories the possession of which is found, by professional experience, to be prerequisite to main or incidental lines of work and progress toward the idea of the profession.

(3.) The plan of the curriculum of the professional course being thus by exact methods prescribed and limited, it must next be ascertained to what extent the educational institutions to be drawn upon can supply the needed preparation for entrance upon the proposed course. A statement of such work in preparation as may be reasonably expected constitutes the proper system of entrance requirements and the only appropriate demand for the professional school.

If it is found impossible to secure elementary preparation for entrance into the course as planned, it will be found necessary, as has constantly occurred in our own schools, to incorporate some nonprofessional work into the professional scheme; but this means simply that the professional school is compelled to do work outside its province. Should it prove, as has usually been the fact in this country, that so much nonprofessional work must be performed in the professional school as to compel excess of load, the surplus is necessarily left out and the student is compelled to defer professional study of importance until actually entering upon professional practice. Such a mongrel course is now illustrated more or less by practically all engineering schools, and it may be a generation before they can be raised to a professional level.

Meantime all are endeavoring to gradually raise the professional scheme of instruction and even to provide opportunity for the advanced student to secure accessory and closely related and important instruction in law, economics, the finance of engineering, and economics of manufactures, at the same time, circumstances permitting, proposing to restrict the specified preparation for the professional school to essentials, leaving to the candidate for admission the decision of the question just how far he can afford to give time, money, and strength to the pursuit of earlier academic studies.

The fact is that with every technical school, and especially with the professional school in the department of engineering, the entrance requirements should be made just as few, just as fit, and just as precise in adaptation to the courses to be taken up as is by any means possible. The nature of the professional course to be offered, and the sequence of primary studies with its special courses, determine the proper requirements for entrance. To increase entrance requirements by introducing those which do not furnish suitable introduction to work to be taken up is to deprive deserving men—usually the most deserving classes of young men—of the right of gaining a scientific knowledge of the fundamental principles of their chosen profession, or art, or vocation. To raise requirements for sentimental reasons, simply to make entrance into such courses as difficult as into others, is, in the opinion of every person familiar with the equities and the facts of the case, a crime against the people, and especially against the "industrial classes," the special care of whom is made, by the fundamental law and by the charter of the land-grant college, its primary duty. "Procrusteanizing" is bad in all departments; but procrusteanizing in any university seeking to adapt itself to the needs of a people, including the "industrial classes" as well as the cultured, is an educational blunder, a political mistake, and a crime against those classes of society which it is the great purpose of such a college and of its founders no less, to give most effective aid. A famous engineer, at the head of a deservedly famous engineering college, discussing this subject from the point of view of the

practitioner, as well as of the educator and professional expert—all of which capacities he illustrates in a rare and admirable degree—writes:

I fear that our preparatory schools are under influences, if not inimical indeed, certainly unfavorable and unsympathetic toward the preparation that should be given to students entering scientific professional courses. The schools now furnish much matter upon which so-called "counts" are based, which could be easily supplanted by other matter quite as useful in developing the thinking power of young people as any subject they now exact; whilst on the side of professional training we must demand subjects that should not be taught in the college, and yet the schools do not provide for them. I believe the majority of young men entering the college of engineering have to obtain special preparation outside the schools. In many, even large, cities, plane and spherical trigonometry, solid geometry, and perhaps advanced algebra, are rarely taught. A student now in college was refused instruction in solid geometry and plane trigonometry because the school could not afford to hire a teacher for him alone. If this is the usual fact, higher education is only within the reach of the wealthy classes, and intellectual scientific progress is dammed at the outlet of the public schools.

It is indeed strange that, in a country so essentially industrial as is ours, all the efforts of the public schools towards higher education seem to be confined to the promotion of old academic courses and literary professions. Yet the study of the classics is exceedingly backward with us; and, in spite of all the drawbacks from this state of affairs and the often narrow-minded discrimination observable against their students, the schools of engineering in this country are generally the best of professional schools, and some of them have no superiors, even as to intellectual accomplishment, on either side of the Atlantic.

As elsewhere remarked by the writer:

It is as essential that the engineer familiar with this branch of construction should plan and direct the courses of instruction in engineering as that the student should be instructed by an engineer. Experience shows that it is a decided advantage that every subject taught in engineering schools should, as far as practicable, be taught by engineers, or by specialists practically familiar with engineering and its applications of their subjects. We even find great advantage in securing instruction in applied mechanics from members of the profession having a talent and special predilection for that subject. The absurdity of establishing engineering schools with nonprofessionals at their heads has slowly come to be recognized to be as great as that of the custom, formerly general, of putting a clergyman, as such, simply, at the head of every college; the folly of seeking to construct an engineering course to be taught by nonprofessionals is not less patent. The organization of any professional school with any other than a professional expert at its head has come to be recognized as eminently absurd and dangerous. Eminent professionals at the head and talented men, practically experienced, on the staff, are the primary elements of success in an engineering as in any other professional school; and a no less important element of success, perhaps, is the placing of specialists in charge of special lines of engineering work. This is now always a feature distinguishing the larger and the better classes of technical schools and colleges. A baby should not only be "nursed by one who loves it," but by one who knows what it wants and how to supply it.

In detail, we may perhaps summarize the points of discussion as below, following the order already given:

(1.) In the technical high school the form and extent of its technical and other courses must, in the now usual case, be settled by the conditions characterizing the location, and by the character of the adjacent population. As a rule its pupils must come from the same class of schools as those which furnish the candidates for admission to the academic schools for youth of similar age. This means that the technical courses, which are commonly largely mathematical, must be started at that point at which it is found practicable to secure satisfactory preparation in the schools. The science work must be similarly adjusted, and this commonly means that it must begin in the technical high school itself; for it rarely happens that any real scientific work can be offered in the next lower grade of academic or manual training school, and, even where attempted, it is too generally the fact that it is so ineffectively performed that the pupil must begin in the high school to unlearn what he has been taught, rather than com-

mence any real work of this sort. All that can be said of the general case is that all that can be had from the lower grade of school should be secured, and thus here, as in all grades and schools, the greatest possible economy of time and labor secured, and the earliest possible beginning made in technical work.

In addition to the technical and semitechnical scientific work of the course, the essential elements of the academic education of the average citizen should be provided, and, in addition, an effort should be made to give some instruction in at least one modern language. This, for the purpose of the average engineer, is best made the German language and its technical literature, while the architect usually prefers the French.

The manual training or the trade instruction should be condensed into as continuous periods as practicable, and it will be found to have the double advantage of giving at once some useful and practical knowledge and that added physical vigor which assures the power of making the most and the best of the mental powers. One has only to visit the United States military and naval academies to witness, in perfection, this peculiarly desirable gain.

In each city and town the technical high school should be adjusted, in extent and character of its courses, to the particular vocations which are most characteristic of the place; and, in fact, in many, perhaps in most, cases should be made, if not a regularly organized trade school, as largely accessory to the requirements of the principal vocations of the place as practicable. In large cities, where several such schools can be perfectly well organized and are really needed, a system of trade schools may be substituted for the technical high school, in each of which schools some important trade may be systematically taught, with all the special scientific and related courses appropriate to such technical courses and schools. Germany admirably illustrates this idea and there every city sustains carefully planned trade and technical high schools directly adapted to the needs of its people.

(2) The distinctive and essential entrance requirements of such schools, as already remarked, must be as high as circumstances permit. Their precise form can only be stated when the conditions of the educational system of the place are known. The essential requirements are those which lead directly into the work of the school; the nonessential—professionally speaking—are those academic studies for which time and place can be found in addition. No definite limit exists to their extent, and only the greatest discretion will secure the highest efficiency of the technical school courses as a whole.[1]

(3) In the technical colleges these requirements and the courses adopted, in any consistent system, should have the established character and altitude of academic college work in so far as they are not distinctively professional. The technical high schools and the trade school, for example, would presumably demand mathematics sufficient to permit the taking up of higher algebra and geometry; the technical college would demand sufficient to allow of entrance upon the higher mathematical branches, as analytical and descriptive geometries and the calculus; the objective being early entrance upon the study of the subject which constitutes the spinal column of the whole technical curriculum—applied mechanics.

Laboratory work in the sciences of chemistry and physics and extensive courses of instruction in drafting and in machine design, with as much trade instruction as can be provided, will constitute the characteristic studies; while the modern languages—French and German, at least—will come in as nontechnical but essential elements of the curricula. In many cases law, economics, and mercantile practice can be brought in to supplement the purely professional work of the engineer, the architect, or the textile designer, and the practitioner of industrial

[1] See the paper by the writer, "Technical Education in the United States," published in the Transactions of the Am. Soc. Mechanical Engineers, 1893, as read at the World's Engineering Congress of 1893 at the Columbian Exposition, Chicago, Ill., in that year, especially pp. 4, 5, *et seq.*

art of whatever sort. The primary and most important point is the securing from the preparatory schools of as large a preparation in mathematics and the sciences, and in modern languages and literature, in addition to the lower recognized standard academic studies, as can by any possibility be obtained.

The courses to be here provided for the satisfaction of those of the people whose sons must go at once into business on leaving the high school or the college should be such as are most certain to prove valuable as best promoting the interests of such youth by effectively increasing their capacity for successfully and usefully passing on through "the sequel of their lives." It is often practicable to "kill two birds with one stone," sometimes a dozen, by teaching such studies and introducing such methods of teaching applied science and languages as will at once furnish education and technical knowledge and training. In fact, one supreme advantage of much technical study is that it provides at once the gymnastic training of the academic school studies and valuable knowledge of a professional character. General Walker, the late president of the Massachusetts Institute of Technology, always claimed that the technical college, properly organized and administered, possessed decided advantages, for all youth, over the purely academic school, in that it gave at once gymnastic training in all essentials and useful and safe insurance against misfortune of the possessor of learning without such knowledge. He thought that the learned man, simply and as such, was never a wise man.

(4) The professional engineering school, as an accompaniment, in the educational organization of the academic college, as an element of the modern university, like the law school, the medical school, and the school of pedagogy and the school of theology, would, "in the complete and perfect" organization, be an institution in which, as in the law school, professional courses would be taught, supplemented in the school itself by such courses in applied science and in technical language and literature as could not be fairly expected to be provided by the academic schools of the university or the common academic college. The entrance requirements should be such as can be met either by the preparatory schools or the other departments of the university, without demanding too much of the matriculate, and can only be finally adjusted when experience has shown just what may be safely asked of those other schools and departments. The reports of the committees of the American Society for Promotion of Engineering Education show what is the situation in this respect at present in various parts of the United States. It may be safely asserted that it will be many years before it will be practicable to adopt uniform requirements for all, or even to comply with the ambitious demands of the academic schools regarding academic nonprofessional studies—preparatory or other.

(5) The extent to which the existing views of the people and current tradition in the schools and the prejudices of uninformed and unthinking academic teachers and of the monastic scholars of the community are to be deferred to is a question of greater importance than the professional commonly either believes or admits. Whatever this extent of deviation from what the practitioner often thinks the desirable organization and curricula of the professional school, it must be remembered that we must, probably, always be dependent, more or less, upon the fairness, good judgment, and kindly assistance of the academic teacher, that public opinion will always be largely molded by the nonprofessional, and that it is incumbent upon every member of the profession to so present the case as to secure, in as full amount as possible, fair and kindly discussion and unprejudiced consideration. * * *

It is, in any event, the duty and the rightful privilege of the professional expert in technical education, in consultation with the practitioner, to construct the curriculum and to administer the technical school or college, of whatever form, and in its development he must, in the performance of a duty to the public

as well as to the profession, carefully follow that golden mean (in deciding between the claims of the scholar and those of the practitioner) which shall insure prompt construction of the system to be developed and give it best insurance against injury and embarrassment by the larger power and influence of the academic teacher.

(6) The control of the technical and of the professional school by nonprofessionals, whether officially through public officials or unofficially through public opinion, is one of the most dreaded dangers in the development of the forms of practically useful education regarding which Aristotle, Milton, and John Scott Russell have so eloquently written. The course to be taken in avoidance of such danger is obviously to see that public offices capable of being employed to injure the interests of the people in this direction are filled by men at once familiar with the subject, practically interested in the development of the best education of the people for the people's work, statesmanlike enough to see the bearings of the matter upon the best and highest interests of the nation, and strong and conscientious enough to do what they can to sustain and promote a truly scientific system of public education. Germany has produced such men; the United States should be able to find an even larger and better class, and to give them their opportunities.

Further, it is important that public opinion, and the opinion of the academic educators particularly, be formed by thoughtfully presented facts and arguments and especially by making known the marvelous gains effected by the German people through partial and imperfect development of a Miltonian educational system by their statesmen during these last generations. An enlightened public opinion, given practical expression by wise statesmen, will inevitably bring about the desired end.

(7) The extent and limitations of the curriculum of the distinctively professional school where students entering may be expected to have secured as extensive and liberal an academic education as their time and means, or the means of their parents, permit should obviously be such as would be obtained by eliminating from the existing curricula all those nonprofessional studies which can be secured in the academic college, as the modern languages, the pure sciences, and the higher mathematics, and substituting advanced professional work not previously attainable. Of this there will always be an ample amount available. When the limit is at last reached, the reduction of the professional course, until it is brought down to a length which will perhaps permit the graduate to enter upon his work and begin to earn a living soon after coming of legal age, will be an advantage of enormous value to him. Could he be graduated at 21, the country would gain greatly; could he even always take his place in the ranks of his profession at 23 or 24, it would be a gain; for, although many graduate from our technical schools at that age, they are seldom as fully and symmetrically educated, either academically or professionally, as is desirable.

(8) In these highest and most distinctively professional schools (and the question is one which applies to all professional schools—law and other, as well as those of engineering) it is asked, What shall be the extraprofessional curriculum, and what shall settle the boundaries of the school? Shall it make its requirements and its course as high as practicable, thus restricting numbers and, in a certain sense, creating an aristocracy, a professional "four hundred," or shall the requirements and the course, or that part which leads to the professional degree, be held down to the lowest acceptable plane, and thus the largest possible numbers of candidates for entrance into the profession be allowed to practice with the indorsement of institutions of learning?

This is a matter of such supreme importance, to the nation as well as to the profession and to the individual, that its decision must be most deliberately determined, and only time and experience can settle it. Possibly, the existing

method may continue in operation. To-day each engineering school fixes its own course and states its own requirements, and the usual fact is that the smaller schools hold lower, the larger schools higher standards, adjusting them to the location, to the conditions of the educational system of the place and time, in accordance with their own judgment of the wisdom of the course taken. This results in the provision of a variety of schools of engineering, as of other professions in which standards are high or low, courses more or less purely professional, and diplomas having correspondingly variable values—very much as among the coinages and currencies of different nations. The standing of each and its reputation is usually well recognized, however, and the outcome is the provision of technical education of considerable range in grade and quality for the most fortunate and for the least fortunate of aspirants alike. Each professional school adapting itself to the situation in which it finds itself, it is possible that a maximum amount of good is done with a minimum amount of injury to the profession, to the schools, and to the country.

It is important that the schools should do all that they possibly can to elevate the standing of the colleges and the professions; it is still more important that artificial impediments shall not stand between the poor but talented, the ill-educated but honest, earnest, and ambitious and naturally well-fitted youth, and their service of the nation in that vocation for which nature has particularly fitted them. The range lies between that low plane of professional training which verges on quackery and that high standard which restricts professional instruction to the classes having ample time and means, and able to secure the best academic education and the most liberal culture previous to entrance upon the study of professional matters and into the purely professional school of highest rank. Very probably the great universities and the few leading professional schools in sections of the country where general education is furthest advanced, and particularly in the largest cities, may find it to their interest, and to the interest of their patrons and the public as well, to steadily raise their standards until their technical schools are professional schools purely, with all preliminary work and much of their elective work, if they offer it, provided by the related academic schools and colleges, while the less fortunately situated in this respect may offer curricula intermediate between that of the highest university schools and the lowest that can, in any degree of fairness, be accepted by the guild as giving right of entrance into the work of the profession. Within this range many schools will adjust their curricula in such manner as to meet the requirements of the place and time, neither adopting highest culture and loftiest schedules of study with minimum numbers of students, nor that minimum range of work which is unjustifiable even by resultant increase to a maximum in the numbers admitted and graduated.

(9) The technical high school is usually necessarily a semiprofessional school. It must at once educate and technically train its pupils. It is necessarily a part of the general school system and must receive its pupils from the lower grade schools of its location. This means that, in this case, the entrance requirements must be such as are fixed by the necessity for arranging a smooth and unbroken line of studies from the primary on into the higher schools, and entrance into the technical high school will be given through substantially the same sort of general preparation as into the academic schools, except that the scientific and mathematical work will constitute the main elements of such preparation, rather than the classics or even modern languages and literatures. The semitechnical curriculum is constructed by leaving out of the curriculum of the corresponding grade of purely academic school all really unessential work and substituting for it technical studies and their accompanying laboratory work, drafting, and shopwork. The latter, indeed, may perfectly well, in this case, be given in time

taken from the ordinary playtime of the pupils, since it affords exercise as well as—to those likely to choose this schooling—pleasure and instruction combined.

(10) The trade schools and the manual-training schools are subject to the same remarks. They must usually be incorporated into the school system and must thus be made an integral part of that extended course of education which must begin with the youngest children in the community and steadily and effectively progress through intermediate to the highest grades reached in each line of study and work. The distinction between the trade school and the manual-training school must be carefully noted, however. The former teaches the precise methods and the exact limitations of the trade, giving sufficient practice in its manipulations to make the pupil expert in the use of the tools of the trade and familiar with its special formulæ and processes, turning out young men having, in addition to the technical knowledge given by this systematized apprenticeship, a good knowledge of the sciences, so far as specially applied in the trade taught them, and, besides, the elements of a good secondary education of the most practically useful sort. The manual-training school, on the other hand, is usually one in which a more youthful class of pupils is taught skill in the use of their hands and brains, and, incidentally, the use of the tools of the familiar vocations. The latter may grade upward into the former, as the ages of the pupils are greater, by imperceptible gradations. The trade school is properly an independent school in which a city teaches the vocations into which its citizens most largely enter, and for the products of which it has largest market and highest reputation. The manual-training school is a natural and proper adjunct to every common school system, in city and country alike.

(11) The classification of these various technical and professional schools is easy when a sufficiently broad view is taken of the field and of the economic relations of the schools and their work to the life and work of the nation. When the fact is recognized that every state and every nation owes to its people the organization of a general system of education—not abstract and ideal, not fitted to the purposes of the well-to-do citizens solely, not planned from the point of view of the older academician or fitted into the ancient monastic scheme—a system adapted to the immediate and practical needs of a great body of civilized people endeavoring to live and work and to enjoy the privileges of modern civilization on an average income of between $600 and $700 a year, for a family, in the settled portions of the country; when this is understood, the question finds easy solution—in words. The difficulties of securing the inauguration, in even our enlightened country, of such a system, in the face of long-standing prejudice, of existing and established curricula of the ancient and cloisteral type, of ignorance on the part not only of the average citizen and voter, but even on the part of the intelligent men of the country, very few of whom have given time to investigation, or thought to this most important of economical subjects, are beyond estimate. These difficulties, however, are certain to be in time overcome, for their removal is essential to the progress of our country in its great career.

The classification may, perhaps, take some such form as this:[1]

(*a*) A common school system of general education providing the elementary studies of a good English education, perfecting the pupil in the arts of reading, writing, and arithmetic, at least, and with so much of the most essential primary work in language, geography, etc., as space can be found for, without reducing the vitally important work to inefficiency. This system should be adapted to the needs of all classes.

[1] This scheme was substantially constructed as here presented by the writer when, as member of the New Jersey commission for devising a plan for encouragement of manufacturing industries in that State and as secretary of the commission, he prepared for the commission such a scheme.

(*b*) A system of special adaptation of primary instruction to the needs of children who must become skilled artisans, and who can not be kept in school by their parents longer than during the period of their growth to that size and age at which they can be made to assist in the support of the family. Such a system may, perhaps, prove to require special adaptation of text-books to the purpose, in which text-books the terms of the trades, and reading matter giving accounts of industrial processes, may be introduced.

(*c*) A system of trade schools in which general and special instruction may be given pupils preparing to enter the leading industries; in which schools the principles underlying the principal vocations of the locality are to be taught, and the essential actual manipulations of the trades are to be illustrated and taught by practical exercises until the pupil becomes expert.

Thus, the Germans have besprinkled all over their country schools of carpentry, blacksmithing, weaving, bleaching and dyeing, forestry, agriculture, etc.

These schools should be established in every city and town in the State.

(*d*) Polytechnic schools should be incorporated, formally and with system, into the great educational scheme of the State and of the country, in which higher work in the applied sciences, and, usually, some trade or professional instruction should be offered students whose circumstances are such that they may be given an education extending toward the years of maturity, and whose talents and inclinations lead them to select technical work as introductory to their later practice of the industrial arts.

(*e*) Technical schools and colleges, professional schools within the colleges and universities, in which the highest professional instruction in the applied sciences and in the scientific basis of the professions may be offered those who are permitted by rare good fortune to secure a good, a liberal education while preparing for entrance into the professional school and upon their chosen line of life work.

(*f*) Such a bureaucratic system of supervision and conduct—presumably by the State, acting through experts in all branches of educational work, and all imbued with the Miltonian idea—such as will insure symmetry and efficiency of the whole great structure of education of the people for the life and work of the people.

(*g*) In the United States the work of the several States should, it would seem, be correlated by a great central, a national, organization, a national university, presumably, in which, and to which, all lines should converge straight from the most elementary of the primary departments and schools, through the whole system of academic and technical secondary schools and State colleges and universities, and which should thus serve at once as a source of authority and of instructing talent of the loftiest character, providing men of genius, and giving grandest educational advantages to all lower grades; giving the level up to which the tide of culture may rise in attaining the highest possible altitude, and serving, further, as the ultimate goal of the great minds of the nation.

(*h*) National bureaus of education having enlarged powers, wider duties, and grander opportunities of engaging in the task of instituting and promoting systematic and general education, such as Milton would have approved, and serving as the great advisory and directing agents in the permanent task of maintaining and improving the symmetry and completeness of the whole national, State, and local systems of general and special education.

IV. Lookout Mountain Educational Institution.

By Hon. John Eaton, formerly U. S. Commissioner of Education.

Great interest in recent years has been awakened throughout the country in the education of the mountaineers of the South—the highlanders of the South. Before 1860 there were no State systems of public education in those regions to enforce the establishment of a public school in every district. The productiveness of industry among the mountains was not sufficient to warrant the sending of children at private expense to school for their education; the result was that generation after generation became more ignorant. During the civil war a multitude of these people left their homes and flocked to the headquarters of the armies; great numbers gathered about Chattanooga. Their ignorance and poverty specially stirred the sympathy of Christian people who came in contact with them. Mr. Christopher Rhinelander Robert, a merchant of New York City, visited the camps thereabouts, as many others did, to relieve the suffering. The condition of these whites led him to study carefully their wants and possibilities; he saw the significance of the education of their children. Born in Brookhaven, Long Island, New York, the 23d of March, 1802, he early entered upon a successful career as a merchant and so continued until he retired in 1862. In addition to his mercantile enterprises he was especially interested in a coal and iron company. He is best known as the founder of Robert College, Constantinople. He gave largely to Military College and Auburn Theological Seminary, and educated at his own expense a large number of young men, probably not less than 125. He gave to Robert College in his will $125,000, besides real estate valued at $45,000. He was at Chattanooga at the time the United States Government was erecting a large hospital on Lookout Mountain, said to have a mile of veranda, for the benefit of sick and wounded soldiers. He saw that this would not be wanted as soon as the war terminated; his active mind, deeply imbued with Christian principles in overlooking the future, put the facts together before him. The hospital when unused would be for sale. Chattanooga would be a natural center for the gathering of children of these people who so deeply appealed to his sympathies. The result was that when the time came he purchased the hospital building and founded the Lookout Mountain Educational Institution. He purchased a tract of land of more than 200 acres in extent lying along the brow of Lookout Mountain, about 5 miles from Chattanooga, elevated about 2,000 feet above the sea level, commanding a magnificent prospect, with excellent water and fine building stone near by. The purchase included the buildings thereon. Unfortunately he had much difficulty in perfecting the title. A charter from the legislature of Tennessee conferring university privileges was obtained and a name adopted intending to cover whatever departments the future of the institution might demand. The plan and the movement were unique. Information of the opportunities offered slowly extended through the mountain regions. The first session of the school opened May 15, 1866. The trustees were William A. Booth, president; S. B. Chittenden, secretary; C. R. Robert, treasurer; David Hoadley, Seth B. Hunt, William G. Lambert, Horace Maynard, William Bosson, and George W. Lane.

As remarkable and interesting as was this beginning, the whole plan was given up at the end of six years, to the great disappointment and sorrow of those who had shared its instruction and those who had become interested in its far-reaching purposes. Friends made special effort to secure for the institution public confidence and to add to the attendance, of which the following circular is an illustration:

LOOKOUT MOUNTAIN.

The undersigned take this method of stating as the result of careful inquiry and personal observation that in our judgment the educational needs of the

Southern States urgently demand the liberal patronage and support of such an institution of learning as the one now in prosperous operation on Lookout Mountain. Its central location makes it easy to be reached by railroad from all parts of the South, while its attractive surroundings, its elevation of 1,400 feet above the Tennessee River, and its freedom from the temptations of a large town, are favorable to vigorous health, devotion to study, and the best development of character. We are glad to find it a school of Christian learning, officered throughout by men of undoubted piety and attachment to the Union, yet under no ecclesiastical control, and having no sectarian aim; a school where the two sexes, occupying separate halls, are yet under the same general discipline, and are brought together in classrooms, in religious and literary exercises, and in the dining hall under oversight of their teachers; a school where thorough preparation is made either for college or business or teaching or social position.

It gives us satisfaction to add that the principal of the Lookout Mountain Educational Institution, Rev. C. F. P. Bancroft; the superintendent, Rev. C. C. Carpenter; the preceptress, Miss Mary A. Wilson, and the assistant teachers, with whom most of us have the pleasure of a personal acquaintance, are worthy of the confidence of the people of the South, and are eminently qualified for their work by their thorough scholarship and experience in the schoolroom, by their admirable methods of giving instruction, promoting good order, kindling enthusiasm for study, and all the social, intellectual, and religious aims of such an institution.

September 1, 1868.

S. J. W. LUCKY,
Chancellor First Chancery District, Tennessee.
JOHN EATON, JR.,
Superintendent Public Instruction, State of Tennessee.
WILLIAM BOSSON,
President Tennessee Teachers' Association.
W. P. RATHBURN,
President First National Bank, Chattanooga, Tenn.
T. R. STANLEY,
Counselor at law, Chattanooga, Tenn.
WILLIAM T. WOFFORD,
Counselor at law, Cartersville, Ga.
EDWARD NORTH,
Professor of Greek in Hamilton College, N. Y.
THERON BALDWIN, D. D.,
Secretary Western College Society.

Students came great distances; from Richmond, Va., from various localities in North and South Carolina, Tennessee, Georgia, Alabama, and Mississippi. Many came in great poverty and with insufficient clothing; some walking, others were brought by their parents with ox-teams.

The necessity of this work grew in the minds of every one associated with the school. Its great possibilities no one felt equal to describe. The youth coming to it, though poor, showed the finest natural capacity. At the end of the academic year, June, 1872, the gentleman in charge issued a general catalogue and a brief statement. Soon the buildings decayed and disappeared; many of the students went on to higher courses of study and to careers of great usefulness, but the school not only closed—it substantially disappeared from the memory of men. Few now (1898) engaged in the education of the mountaineers have any knowledge of it, but its influence can not be blotted out while mind remains and character endures.

The statement issued at its close shows that there had been in attendance an aggregate of 953 and an average of 80. The summary shows in detail, gentlemen, 328; ladies, 148; or a total of 476. From Tennessee 265, Georgia 94, Alabama 67, Mississippi 11, Florida 9, North Carolina 7, South Carolina 2, Louisiana 2, Kentucky 2, Pennsylvania 2, Massachusetts 2, Virginia 1; and 1 each from New Hampshire, Iowa, Minnesota, Indiana, New York, New Jersey, Ohio, Illinois, Kansas, Nebraska, Labrador, and Cuba. Of the officers, the principals were: Rev. Edward F. Williams, A. M., 1866–67; Rev. C. F. P. Bancroft, A. M., 1867–72, and Miss Mary A. Wilson, 1866–72. Superintendent, Rev. C. C. Carpenter, A. M., 1866–72.

Great care was taken that all teachers should be of the best qualifications and the highest character, and they became especially enthusiastic in their work.

They were aided by an efficient corps of assistants. Mr. Williams returned to pastoral duty, in which he has been eminently useful. Miss Wilson, a lady of marked excellence, occupied her position during the entire history of the institution, as did Rev. Mr. Carpenter. Mr. Carpenter, after finishing his education and entering upon the ministry, together with his wife, devoted his attention to the natives of Labrador, where his efforts made a deep and lasting impression. At Lookout Mountain both were recognized choice spirits, devoted to their work and skilful in discharging their responsibilities. They succeeded in a remarkable degree in giving to the young people who came under their care a genuine home school. Mr. Carpenter was specially charged with the business care of the institution, and his success left no doubt of the wisdom of his selection. His health always frail, since he retired from these labors he has been able only to a limited degree to undertake the burden of pastoral responsibility; in addition, however, to preaching, as his strength permitted, he has found much to do in the way of historical and biographical writing and newspaper editing, and has become specially and widely known among young people as "Mr. Martin," the editor of the conversation column in the Congregationalist. Mr. Bancroft, now honored with the degrees of doctor of philosophy and doctor of laws, had so become known for his scholarly attainments and success as a teacher and disciplinarian that in due time he was called to be the successor of the very eminent S. H. Taylor, LL. D., so long renowned as the principal of Phillips Academy, Andover, Mass. His wife, who shared with him so efficiently his responsibilities at Lookout Mountain, has adapted herself with a special skill, to the delight of the Andover students, to the conditions of her new situation. And Andover, instead of pausing in its career, has steadily gone on increasing in attendance and in the effectiveness of its scholarly Christian work.

A statement issued at the close of the institution acknowledges special indebtedness to Rev. Dr. Theron Baldwin, secretary of the Western College Society. The plan contemplated a school open to both sexes under the most improved modern instruction, directed by teachers of experience, culture, and Christian character, with accessories inviting to persons of refinement, yet at a cost not beyond the reach of the middle classes and of pupils dependent upon their own exertions. State patronage, with its political complications; a partisan bias, with its sectional prejudices; a sectarian control, with its incidental exclusiveness, were to be equally avoided. Dependence upon local patronage would give a local character and tone to the school, while the association of minds of both sexes from a wide range of society was regarded as the best condition of a truly liberal education. The influence of natural scenery in the formation of character, and surroundings favorable to physical development and vigor, were held prominently in view. The tendency to a superficial and merely ornamental education was to be firmly resisted. An education without the restraints and direction of personal religion is partial and dangerous; the chief aim of the institution was to lead every pupil to cherish the principles and act under the motives of the Gospel.

The site selected has become well known all over the country as included in the battlefield of Chattanooga. Its healthfulness, both summer and winter, are well and widely known. The general management of the school was carefully watched and directed by Mr. Robert himself, who visited it annually. Dr. Barnas Sears, that eminent educator and agent of the Peabody Fund for the aid of education in the South, saw and appreciated the important work done there in its relation to the public-school system of the South. Gen. O. O. Howard gave it his hearty approval. Aid came from benevolent and educational societies and interested individuals for the support of students in need. The statement continues: "How far the institution has realized the high and comprehensive aims of the founder

no one connected with it should undertake to say, nor could a casual observer intelligently estimate the amount or quality of the results. The officers would reverently express their gratitude to God for the favor he has shown the institution from the beginning. Many of the students are proving their education in the higher institutions, in the professions, and in practical life. Not a few look back to the Mountain as the place where their religious life began. A goodly number have begun their preparation for the ministry, and some are already in the field.

"It has been the constant aim of the founder as soon as the institution should be well organized and placed on a sound financial basis to transfer it to a board of trust who would conduct it after the original design. Several causes have combined to defeat this intention. Neither the men nor the money could be secured. Protracted and vexatious litigation have prevented the accumulation of endowments and the erection of contemplated permanent buildings. With the advance of years, declining health, and a natural wish to leave all his interests in a secure and simple shape, and a conscientious desire to use benevolent funds to the greatest advantage, Mr. Robert has been constrained to close the school at the expiration of the academic year, June, 1872, sell the property and transmit the proceeds to the trustees of Robert College."

The statement closes as follows:

"The officers take this method to return their thanks to the many friends in all parts of the country who have by their counsel, kind words, kind deeds, and fervent prayers assisted them in carrying forward the cause of Christian learning. The work has been arduous but delightful. In closing their own long and pleasant connection with the institution they would express to those with whom they have been associated in the relations of school life and labor on Lookout Mountain the hope that all may share in their happy recollections of L. M. E. I. They believe that its career, though short, is honorable, and its influence good, widespread, and lasting."

V. The Need of Action for the Amelioration of the Condition of the Colored Race.

THE SUBSTANCE OF A REPORT MADE TO THE TRUSTEES OF THE JOHN F. SLATER FUND BY J. L. M. CURRY, CHAIRMAN OF THE EDUCATIONAL COMMITTEE, APRIL 11, 1899.

To the Trustees of the John F. Slater Fund:

At our last meeting it was resolved to appoint Booker T. Washington, A. M., to visit some of the principal cities in the South and endeavor, by lectures and otherwise, "to improve the condition of the colored people." His report shows that the movement was well timed and that his race received with appreciation the effort made to enlighten and to suggest effective remedies for their amelioration. It is, however, most obvious that mere addresses, wise and instructive though they may be, will fall far short of the good intended, unless followed by well-devised and continuous local efforts to put the teachings in practice and make them an integral part of conscience and conduct. It needed not, except for clearer exposition of facts and enforcement of an imperative duty, that Mr. Washington should have added his intelligent and pathetic testimony to what was well understood by impartial observers to be the general condition of the negro, in a large part of the country where the race does most persistently congest. For a while, after Appomattox, churches and press and politicians were prolific in passionate appeals, in rose-colored views of the future, in the suggestion and use of means, more or less legitimate and defensible, to fit the negro for the

plane to which he had been suddenly lifted. For this elevation, neither race, intelligence, nor ethical standards and habits had prepared him. The enthusiasm, the aroused conscience, the favoring public sentiment, seem to have sunk into comparative apathy or diminished interest. In both sections of the Union, among descendants of Union and Confederate armies, have been hostile acts, which have taken the place of justice and orderly legal process. What produced this lessening of sympathy, this abatement of effort for improvement, this is not the proper medium for discussing. The fact is indisputable that the negro has not improved as was desired by all, expected by many, in his industrial, social, mental, and moral condition. Families are too often crowded into a hovel, and many of the race are ill born, ill fed, ill clad, ill cared for, ill environed, and these conditions are necessarily unfavorable to decency, to chastity, to self-respect, to wholesome living, to healthy improvement. The one-roomed home—if not a sacrilege to call it by that name—causes a promiscuous mixing of men and women, boys and girls, and the good obtained by them in schools and in church worship is canceled by the fearful surroundings of the places where they sleep. "Sound vitality and delicate sensibility are incompatible with filthy habits and abodes." In England there is a deep agitation on overcrowding as a sanitary and moral evil, causing immorality, vice, loathsomeness, debility, disease, death. Philanthropists and the Government are of the opinion that the state of the dwellings of the poor requires immediate and earnest attention. Through the slums, ignorance and injustice and crime are wasting much of the beauty, virtue, strength, and goodness, which go to make a nation great and prosperous. A whole generation has passed since emancipation, and 80 per cent or more of the nearly 8,000,000 never knew the evils of personal slavery. Much has been done for the negro, and yet a large proportion are as poor, as ignorant, as thriftless, as improvident, as unfit for responsibilities and privileges of citizenship and suffrage as were their ancestors at the close of the great war. With a preponderant majority there is a low level of intelligence and morality, with rudimentary notions of comfort, and under the influence of grossest superstition. No peasantry in Europe, no laboring class in any civilized country, occupies a lower position in home comforts, in skilled industrial capabilities, in potential influence upon public opinion, upon thought, upon all the constructive and beneficial agencies of civilization, than does the black population of the Southern States.

This report is not intended as a pessimistic picture painted in dark colors, nor to discourage and repress intelligent and comprehensive action for the betterment of the freedmen. God forbid. It is gladly conceded that churches, communities, individuals, have made marked progress, rendering absurd all skepticism or doubt as to the capability of the negro. Washington, Jones, Councill, Atkins, Dunbar, Du Bois, Fortune, Turner, Gaines, Brooks, and many others are the exceptions, but they are the proof of the benefit and the necessity of large, proper, and hopeful work for the "lifting up of the race." As compared with the negro in Guinea, or Haiti, or Jamaica, or any other part of the world, his progress in the Southern States is undeniable. Emancipation has not been a failure, as may be seen in churches, schools, individual self-reliance, and accumulation of property. What has been done with limited, insufficient means is not a reason for arresting such work, but an unanswerable call for wiser plans and broad-minded educational statesmanship. The physician must understand thoroughly the condition of his patient before he can prescribe with reasonable anticipation of good results. The statesman, the philanthropist, the patriot must realize intelligently the status of the negro and what has been already attempted and done for him in order to know whether more should be done, and what. No good will be effected in this or any other reform by quackery, or by ignoring practical difficulties.

It may be safely affirmed that the history of free governments furnishes no page more unfruitful of practical benefit than that which records what has been attempted for the negro by the General Government since 1865. Reconstruction measures, rigidly leaving out of view their intent, conceding the best motives, have been a disastrous failure. Suffrage, given en bloc to masses destitute of the rudiments of political aptitude, of both knowledge and experience, has not protected the "wards of the nation" from chicanery, inequality, injustice, and fraud. Bryce has wisely said: "It is no kindness to thrust upon men functions they are unfit to perform. No English statesman would try any such experiment as was tried in America, when, after the war of secession, full rights of suffrage were conferred on the lately emancipated colored people of the South." No one can seriously contend that the experiment of freedom, citizenship, and suffrage has been so successful, that it has so thoroughly and well accomplished its purpose as to justify the Government or the people in abdicating obligations which they so joyously assumed. Surely prophecies have not been fulfilled, and the negroes have not as yet reaped any extraordinary benefits from citizenship. Privileges conferred have not simply been unprofitable to the race, but in their retroaction have been prolific of mischief to the white people, and pregnant with peril to the Government which sought to give a mighty impulse to free institutions. The failure makes imperative the need and duty of acting courageously and wisely, so as to avert peril and make positive to the negro what so far has been only negative in its attainments.

No language can make more forcible the duty and the possible blessings of emancipation. Slavery of person, labor, mind, is incapable of economic or ethical defense, but, with painful obviousness, the obligations resulting from abolition have been imperfectly understood and discharged. Along educational and religious lines much has been done by a few ecclesiastical organizations in establishing churches and schools; by individuals in the aid of such excellent institutions as Hampton, and Fisk, and Tuskegee, and by States and cities for general education. It would be gross injustice and inexcusable disloyalty to the Slater Trust not to claim great and permanent utility for its work. Steadily it has kept in view the specified end of its noble founder, and has accomplished much by substantial aid, by direction of thought, and the enlightening of public opinion as to the real needs of the negro, and the true scope, purpose, and methods of the education required. Such schools as Hampton, Spelman, Tuskegee, Claflin, Tougaloo, the State Normal at Montgomery, and scores of others are living witnesses of the inspiration and progress derived from Slater aid. No sane man will contend that education has accomplished what was proposed or what is needful. The field of need and endeavor furnished scope, stimulus, and reward, not merely for the teacher, but for the philanthropist, the Christian, the statesman. The results of whatever agencies have been tried have been painfully unsatisfactory. To stop now with what education, so partial, so lacking in adaptedness and right methods, has achieved, would be as if the colonies, after securing through the treaty of peace following a seven years' war the recognition from the mother country that each colony was a free, independent, and sovereign State, should not have consummated their victory by a constitutional federative Union, nor gone on in marvelous achievements in behalf of human rights under a government of law, order, and restrained liberty. The schools have not been unfruitful of incalculable advantages, are unanswerable arguments in favor of enlargement and improvement, but they make a reliance upon them as a sole means for the cure of existing maladies a stupid self-satisfaction with what demands larger, more continuous, and comprehensive measures. The dark stream flows on, and the man or woman is much to be pitied, the legislator deserves reproach, if not contempt, who folds arms in placid contentment with the situation as it is.

It can not need argument that a maximum of a race deficient in property, civilization, the use and enjoyment of the treasures of a cultivated mind, or in a pure religion, must be a most serious obstacle to all true and enlightened progress. Perhaps, it should not surprise us that there has been wanting a manly grasp of hard facts, a clear appreciation of essential needs and of the possibilities of a better future and of adequate remedies, when we recall how suddenly and with what demonstrations of high expectations the country plunged into emancipation, without any conception of the extent and magnitude and difficulties of a revolution, which has no parallel in the annals of this century. The London Standard, the organ of the present English ministry, said in January: "In the West Indies the mischief done by premature and hasty emancipation has never been wholly repaired." In other lands and other days, tedious periods of apprenticeship, of sagacious and helpful watchfulness, of control and training, of hopes deferred and triumphs hardly won, have been needed to fit for freedom and self-government, and to teach habits of industry, method, energy, and respect for the rights of others. The grim immensity of the gigantic achievement of emancipation has not yet been grasped, and there has been no definite nor coherent line of policy beyond putting the spelling book and the Bible into the hands of children. It is good ethics and good logic that he that wills the end must will the means, and if full and earliest citizenship were the purpose of emancipation, there has been a fearfully criminal omission to provide for such a result. There is a misapprehension or utter heedlessness of the perils which menace the black man, which menace both races and our free institutions. Mr. Lincoln, with that consummate forecast which characterized his utterances and actions, used this striking language: "In giving freedom to the slave we assure freedom to the free, honorable alike in what we give and what we preserve." What was joyously assumed can not be abdicated as a task or an obligation. Security against imminent danger, adequate provision for making a hazardous experiment work out its own slow rewards, have been relegated to the remote future. Other things, dazzling and fascinating, engross thoughts and energies. Men's minds have been intoxicated by schemes of expansion to the forgetfulness of a problem which deserves precedence in the American mind and conscience. Its magnitude, viewed in all its aspects, can not be overestimated. During the exigencies and convulsions of a mighty internecine conflict, the patriot Lincoln brooded over it with intense anxiety and sought, again and again, to induce the Congress to give it the attention it merited. It can not be safely left to local settlement, to haphazard attempts of individuals, to the impractical ideals of enthusiasts, to oft-misinterpreted providence. It is suicidal to ignore, to neglect, to postpone. It may be said that the South, where the congestion of the black population is such an evil, brought on herself the present troubles and should suffer the consequences. If that were true of the white people, what of the negroes?

A social and political and moral cancer at the South affects the whole body politic. An ignorant vote in a congressional or presidential election in South Carolina concerns vitally every citizen of the country. A great and wise scheme averting probable dangers, increasing productive resources of millions of people, relieving congestion, removing causes of irritation and discord, justifying the liberation of slaves and making the act a blessing to both races, to all the people, would be a work of unspeakable value and patriotism. No such great civic measure has been proposed. No statesman of any section has suggested an original train of thought, or connected his name with bill or law, filled with political wisdom, for meeting the severe difficulties which beset a problem that up to this time has baffled solution. Occasionally is heard a suggestion of two modes of solution: (*a*) Diffusion has been advocated, and it would remove many, if not all, of the evils, if the millions congested in a small area could be dispersed

over the whole country. Senator Windom, of Minnesota, advocated a plan for distributing by assisted emigration, so that the negroes might not remain massed in narrow areas. (*b*) Deportation has received a larger support, and South America, Africa, adjacent islands, have been proposed as desirable refuges. President Lincoln, Senators Butler, Gibson, and Morgan have advocated extra-union colonization. Neither scheme seems feasible or perhaps possible; certainly, has not secured popular favor, or the negro's assent, and so there is need for other plans. This unsettled question, acquiring more seriousness and danger with each year's delay, wider and deeper than any new or minor event, or incident, demands the cooperation of churches, statesmen and people, for it will, when rightly met and settled, aid the taxpayer, increase the rewards of labor, teach noblest lessons of humanity, relieve a race from the scourge of centuries, and our Government and Christianity from the reproach of not having met with fortitude and wisdom the most important and urgent matter within our purview as citizens and patriots. Before bringing into our citizenship and under our protectorate alien peoples, before the reversal of time-honored policy for the doubtful advantage of ruling by force, by military occupation, over distant populations, it would seem as if every consideration of justice and right and the weight of the undischarged obligations growing out of the compulsion of quick emancipation, should not allow any new and doubtful duty to interfere with the performance of what conscience, the Constitution, self-interest, unredeemed pledges, make an imperative claim of overwhelming importance. Liberty, citizenship, and what they involve were purchased at the price of blood and hecatombs of victims and uncountable sacrifices. The negroes are here, not of their own free will; their residence, their grievances and hardships, their inequality of intellectual energy and moral force, are not of their own seeking, and they are Americans, having become such through the avarice and horrors of the "middle passage" during the atrocious slave trade, against which Virginia and the Carolinas made frequent and impotent protest. Take up the white man's burden, is the poetic appeal which has made imperialism popular as a step toward civilizing the inhabitants of the two Indias. But another race of our own land has burdens, which, if not taken up and alleviated, will seriously compromise the prosperity, the life, of neighbors and fellow-citizens. This race is not like an extraterritorial dependency, which we can protect against itself and chronic revolution, until it is in a fit condition for self-government. This distinct class of citizenship is within our own borders, has been deliberately chosen as our own wards, and we can not, without gross criminality and most serious peril, leave it to its own self-support and development. Neither North nor South can wrap around herself robes of complacency in contemplation of the present deplorable situation and Pharisaically boast, "Thou canst not say I did it." Without crimination and recrimination, the whole people should thoughtfully trouble themselves to consider the real significance of present facts and tendencies, and most seriously inquire what humanity, civilization and good government require to solve the most difficult question that has presented itself during our national existence. The docile disposition of the Afro-American, his lack of individuality, initiative and foresight, his inability to plan and combine wisely for his own well-being, his facility of bad control, his irresponsibility for being the cause of conflict and peril, the drag weight he is and must remain upon his white neighbors, enormously increase the responsibility of those who govern. The power of the sentiment of race unity in forty years has unified Germany and Italy and reconstructed the map of Central Europe; but, here, race prejudice shows no signs of decay or disappearance. The cleavage growing out of racial differences, the points of irritation, the tendency to exasperated conflicts, have not sensibly lessened. The wide gulf of separation, not likely with lapse of time to be bridged over by coeducation, social intercourse, community of worship and

citizenship, is as fixed as it was in antebellum days. If we would enter aright upon the duties and privileges of a new century, we should base our claim for respect and gratitude, not on heavy armaments, nor cruel neglect of those of whom we are the only guardians, nor by novel experiments, but upon a nobler civilization, a beneficent illustration of the benefits of representative government, a dominant and self-sustained purpose to enable the freshly enfranchised to work out better industrial, social, political, and moral results. From our own American people we may expect what is noble and magnanimous, if we keep their vision lifted toward an ideal of justice and truth and righteousness.

In this connection, attention is invited to the accompanying maps, carefully prepared from the Eleventh Census (1890). Plate A illustrates, at a glance, the geographical distribution of the negroes in the Southern States, according to density of this population, and Plate B shows their relative number as compared with the white people. Plate B also shows the location of most of the principal colored schools, leaving out, except in a few instances, the public schools and the less-attended denominational schools. In each of the cities of Raleigh, Columbia, Charleston, Atlanta, Nashville, New Orleans, and Marshall are several schools. Besides the general public school systems, which include colored pupils, there are State Normal and Industrial schools for the negro race at Petersburg, Greensboro, Savannah, Montgomery, Huntsville, New Orleans, Prairieview, and one in Mississippi. The great institutes at Hampton and Tuskegee are loosely connected with the governments in Virginia and Alabama, through legislative appropriations and a minority of trustees on their respective boards. Some of the schools under control of religious organizations are designated on Plate B, but besides these are many others, not a few of considerable excellence.

These plates present, at a glance, in graphic and impressive form, the relative black and white population, the localization, the unnatural and dangerous concentration, of illiteracy and ignorant suffrage, and the predominance, within a limited area as compared with our whole territory, of the perils which demand, for their removal, the most active and sagacious statesmanship.

This paper is intended to reach chiefly those interested in public affairs—legislators, editors, etc.—so as to awaken attention to the necessity of looking more earnestly to the encouragement of such agencies as are adapted to uplift and benefit a numerous and important element in our citizenship. I venture, therefore, to suggest, with the assent of the board, a personal purpose to urge upon Southern legislators and those who mould public sentiment the necessity of looking to the encouragement and increased support of these agencies. Much would be secured if there was a studied desire, on the part of persons acquainted with principles and methods of instruction, to acquaint themselves with what would be best for the negro at the present time, having reference to those who are to become leaders and teachers, as well as to those who, by the necessities of the case, must, for a long period, remain in an humble condition. Without intrenching upon what is the work of churches, much can be accomplished in the way of indoctrinating great principles of virtue, morality, and integrity. A study of economic conditions is a field of promising usefulness, and the great industrial force might, by proper legislation, be protected against evil influences and trained for greater usefulness and happiness.

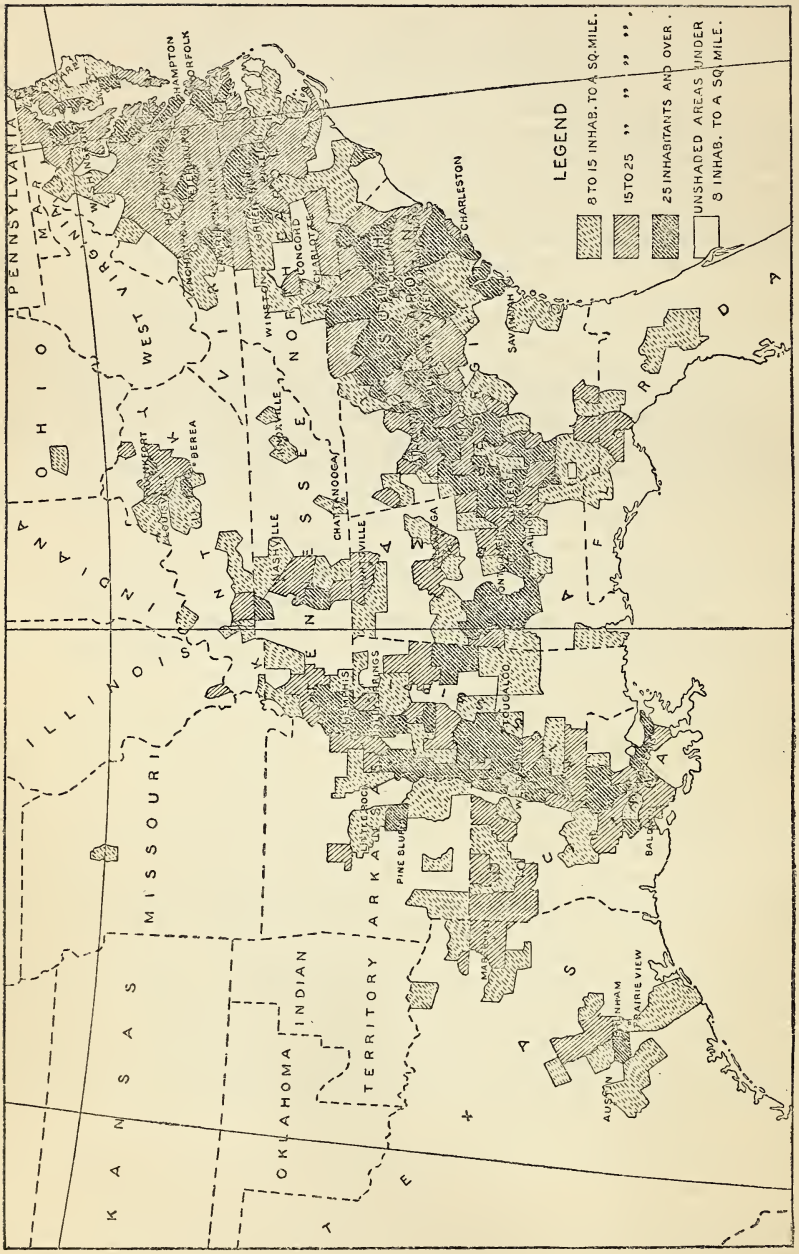


PLATE A.—Distribution of the colored population of the United States, 1890.

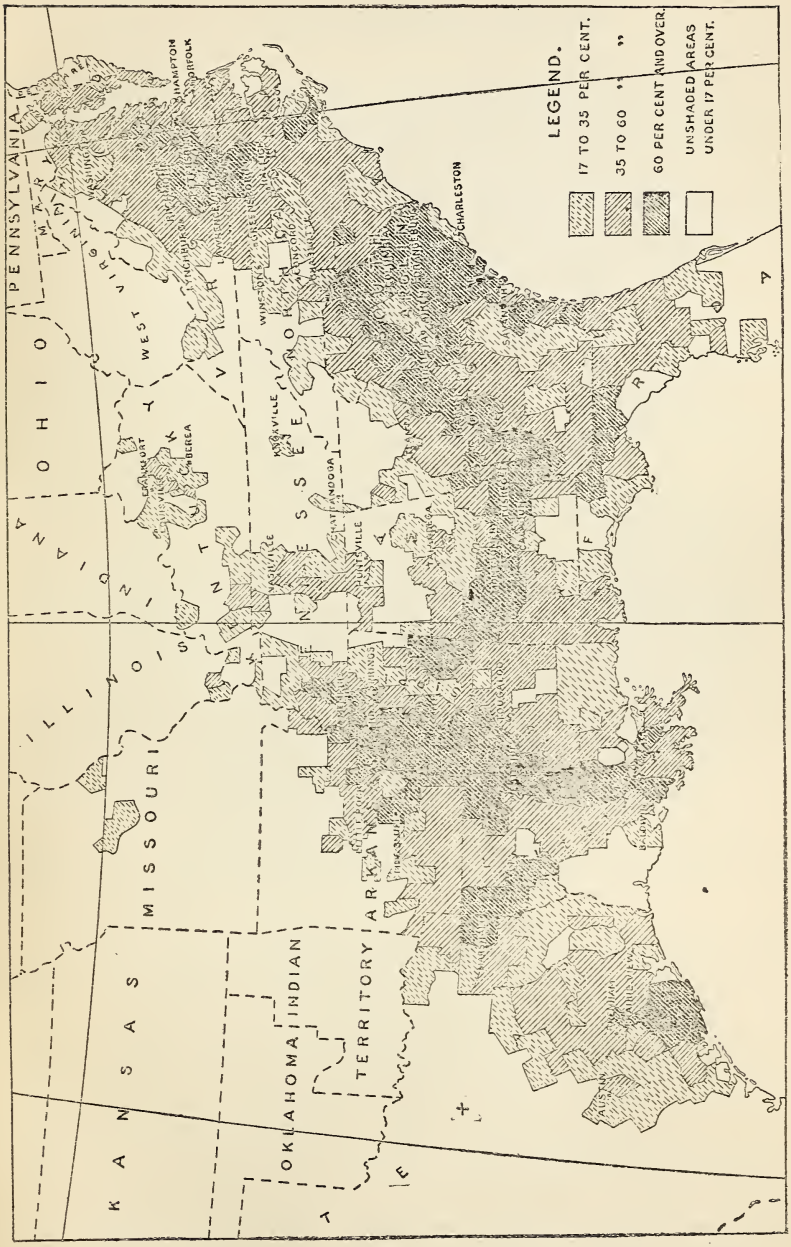


PLATE II.—Proportion of the colored to the aggregate population, 1890.

Appendix.

Address of President McKinley at the Tuskegee Normal and Industrial Institute, December 18, 1898.

Teachers and pupils of Tuskegee:

To meet you under such pleasant auspices and to have the opportunity of a personal observation of your work is indeed most gratifying. The Tuskegee Normal and Industrial Institute is ideal in its conception, and has already a large and growing reputation in this country and is not unknown abroad. I congratulate all who are associated in this undertaking for the good work which it is doing in the education of its students to lead lives of honor and usefulness, thus exalting the race for which it was established.

Nowhere, I think, could a more delightful location have been chosen for this unique educational experiment, which has attracted the attention and won the support even of conservative philanthropists in all sections of the country.

To speak of Tuskegee without paying special tribute to Booker T. Washington's genius and perseverance would be impossible. The inception of this noble enterprise was his, and he deserves high credit for it. His was the enthusiasm and enterprise which made its steady progress possible and established in the institution its present high standard of accomplishment. He has won a worthy reputation as one of the great leaders of his race, widely known and much respected at home and abroad as an accomplished educator, a great orator, and a true philanthropist.

What steady and gratifying advances have been made here during the past fifteen years a personal inspection of the material equipment strikingly proves. The fundamental plan of the original undertaking has been steadily followed; but new features have been added; gaps in the course of instruction have been filled in; the patronage and resources have been largely increased, until even the legislative department of the State of Alabama recognized the worth of the work and of the great opportunities here afforded. From one small frame house the institution has grown until it includes the fine group of dormitories, recitation rooms, lecture halls, and workshops which have so surprised and delighted us to-day. A thousand students, I am told, are here cared for by nearly a hundred teachers, altogether forming, with the preparatory department, a symmetrical scholastic community which has been well called a model for the industrial colored schools of the South. Certain it is that a pupil bent on fitting himself or herself for mechanical work can have the widest choice of useful and domestic occupations.

One thing I like about this institution is that its policy has been generous and progressive; it has not been so self-centered or interested in its own pursuits and ambitions as to ignore what is going on in the rest of the country, or make it difficult for outsiders to share the local advantages. I allude especially to the spirit in which the annual conferences have been held by leading colored citizens and educators, with the intention of improving the condition of their less fortunate brothers and sisters. Here, we can see, is an immense field and one which can not too soon or too carefully be utilized. The conferences have grown in popularity, and are well calculated not only to encourage colored men and colored women in their individual efforts, but to cultivate and promote an amicable relationship between the two races—a problem whose solution was never more needed than at the present time. Patience, moderation, self-control, knowledge, character, will surely win you victories and realize the best aspirations of your people. An evidence of the soundness of the purpose of this institution is that

those in charge of its management evidently do not believe in attempting the unattainable, and their instruction in self-reliance and practical industry is most valuable.

In the day and night schools many branches can be taught, at a small expense, which will give the man and the woman who have mastered them immediate employment and secure their success afterwards, provided they abide by the principles of industry, morality, and religion here inculcated. In common with the Hampton Institute in Virginia, the Tuskegee Institute has been and is to-day of inestimable value in sowing the seeds of good citizenship. Institutions of their standing and worthy patronage form a steadier and more powerful agency for the good of all concerned than any yet proposed or suggested. The practical is here associated with the academic, which encourages both learning and industry. Here you learn to master-yourselves, find the best adaptation of your faculties, with advantages for advanced learning to meet the high duties of life. No country, epoch, or race has a monopoly upon knowledge. Some have easier but not necessarily better opportunities for self-development. What a few can obtain free most have to pay for, perhaps by hard physical labor, mental struggle, and self-denial. But in this great country all can have the opportunity for bettering themselves, provided they exercise intelligence and perseverance, and their motives and conduct are worthy. Nowhere are such facilities for universal education found as in the United States. They are accessible to every boy and girl, white and black.

Integrity and industry are the best possessions which any man can have, and every man can have them. Nobody can give them to him or take them from him. He can not acquire them by inheritance; he can not buy them or beg them or borrow them. They belong to the individual and are his unquestioned property. He alone can part with them. They are a good thing to have and keep. They make happy homes; they achieve success in every walk of life; they have won the greatest triumphs for mankind. No man who has them ever gets into the police court or before the grand jury or in the workhouse or the chain gang. They give one moral and material power. They will bring you a comfortable living, make you respect yourself, and command the respect of your fellows. They are indispensable to success. They are invincible. The merchant requires the clerk whom he employs to have them. The railroad corporation inquires whether the man seeking employment possesses them. Every avenue of human endeavor welcomes them. They are the only keys to open with certainty the door of opportunity to struggling manhood. Employment waits on them; capital requires them. Citizenship is not good without them. If you do not already have them, get them.

To the pupils here assembled I extend my especial congratulations that the facilities for advancement afforded to them are so numerous and so inviting. Those who are here, for the time being have the reputation of the institution in charge, and should, therefore, be all the more careful to guard it worthily. Others who have gone before you have made great sacrifices to reach the present results. What you do will affect not only those who come after you here, but many men and women whom you may never meet. The results of your training and work here will eventually be felt, either directly or indirectly, in nearly every part of the country.

Most of you are young, and youth is the time best fitted for development both of the body and mind. Whatever you do, do with all your might, with will and purpose, not of the selfish kind, but looking to benefit your race and your country. In comparing the past with the present, you should be especially grateful that it has been your good fortune to come within the influence of such an institution as that of Tuskegee, and that you are under the guidance of such a strong leader.

I thank him most cordially for the pleasure of visiting this institution, and I bring to all here associated my good will and the best wishes of your countrymen, wishing you the realization of success in whatever undertakings may hereafter engage you.

VI. Thaddeus Stevens's Defense of the Pennsylvania Free-School System.

[The following account of the part which Thaddeus Stevens took in the memorable struggle over the Pennsylvania free-school system in the early 30's is taken from a life of Stevens recently published[1]. It will serve to acquaint the reader of the present day with the circumstances under which the speech which follows was delivered, and the effect it produced.]

It was during this session (i. e., 1835) that Stevens rendered his great service to the public-school system, and against great odds achieved a victory which he regarded, even after he had won his wide fame, as the greatest achievement of his life. For many years the system had prevailed in Pennsylvania of furnishing public education, as of providing public subsistence, only to self-confessed paupers. In order to get his children educated at the public expense it was necessary for the father or guardian to make it appear that he was not able to furnish them the means of education, and in such a case instruction would be doled out as bread or meat would be doled out if he were unable to buy food. The system was substantially that illustrated by the Friends' Public School, established in 1697, a system for the education of "the rich at reasonable rates, the poor to be maintained and schooled for nothing." During the colonial times the church and local schools were generally conducted upon this principle.[2] The establishment of free institutions gave birth to notions of equality which made it impossible to continue a system under which a distinction was maintained in the public schools between the children who paid and those who were regarded as public charges. "The class distinctions," says Wickersham, "that had been broken up in general society could not be preserved in the school." Rather than permit poor children to be educated under conditions so fatal to their self-respect, their parents kept them at home.

The system was first cast aside in Philadelphia, which provided for free schools at the public expense. The agitation for the extension of the Philadelphia plan to the whole State finally bore fruit in the act of 1834, which, with many defects in detail, recognized the grand principle of free public schools for all, and was passed with only a single dissenting vote. But, like most noble things, this principle involved some cost. There were the taxes, and there is no more certain method of stirring up the public opinion of a virtuous, thrifty, and frugal people, such as then inhabited Pennsylvania, than by pricking their pocketbooks. They were willing to have reform, provided it did not come high or they were not compelled to pay for it. A violent reaction arose. Nearly half the districts in the State rejected the act or contemptuously ignored it. They were ready to do sweet charity and furnish schooling for the children of paupers, but they could not consent to a system which took by taxation the money of those who had no children and devoted it to the education of the children of the well-to-do. Thus it came to pass that the good Commonwealth, through all her rich valleys and across her noble mountains, was shaken, from the Delaware to the Ohio, and a legislature of stern Spartans was sent to Harrisburg to wipe out the law.

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[1] *Thaddeus Stevens.* By Samuel W. McCall. Houghton, Mifflin & Co., 1899.

[2] Wickersham, *History of Education in Pennsylvania*, p. 294.

The Senate made short work of it. That body summarily voted to repeal the essential parts of the act by a bill which bore the inspiring title, "An act making provision for the education of the poor gratis." This bill passed the Senate by a vote of nearly two to one, and among its supporters were found 13 senators who had voted for free schools at the previous session.[1] It then went to the house.

Many members of the preceding legislature had lost their seats by their incautious vote for free education, and had given place to its pronounced opponents. The legislature was inundated by petitions for repeal. A committee favorable to the law reported that the number of signers was "deplorably large," and that 32,000 had petitioned for repeal, while only 2,500 remonstrated against it. The Democratic members passed a vote at a caucus, requesting the Democratic governor, who was a friend of the law, not to oppose the repeal, since a veto of the bill, which seemed sure to pass, would defeat him for reelection.[2] During a considerable portion of the time while this tempest was raging, Stevens was absent from Harrisburg. Upon his return, his colleague from Adams County, who was a warm friend of the law, informed him that the bill repealing the act had passed the senate with only 8 dissenting votes; that the test vote of reference in the house showed a majority of 30 in its favor, and that the friends of the law had consulted together and decided that it was useless to oppose the repeal. He also advised him that they were bound to vote for the repeal, as three-quarters of their constituents had petitioned for it.[3]

The situation was desperate and the cause of the law seemed lost. The senate bill to repeal came up in the house on April 10 and 11, 1835. Up to that hour the popular excitement, which is so often the precursor of an opposite ultimate popular opinion, had gone on unchecked and carried everything before it. One obstacle, however, stood in the path of repeal. There was one representative who would no more pander to a popular passion, of which he believed the people would repent as soon as their eyes were opened, than he would pander to a mob. The people might reject him, but so long as he was their representative he would follow his convictions of duty. He braved the storm when it was at its fiercest pitch and boldly moved to strike out all the senate bill after the enacting clause and to substitute for it a bill strengthening the law which it proposed to repeal. Upon that motion he made his speech, which, even from the imperfect reports, must be regarded as a powerful argument, and from the uniform accounts of those who heard it must rank with the great parliamentary speeches. Certainly it produced an effect second to no speech ever uttered in an American legislative assembly.

The hall was packed to suffocation. Nearly the entire senate and most of the principal State officers were present, as well as the members of the house. Stevens was in the prime of manhood. His form had outgrown the slenderness of youth, and it was not bent with that heavy weight of years which he dragged along when, a generation later, he moved, a portentous figure, across the stage of the National House of Representatives. He was erect and majestic. He may not, indeed, have had the appearance of "a descended god," as one of his fellow-members who has described the scene has portrayed him, but we can well believe the accounts of the wonderful beauty of those chiseled features which never lost their eagle look even to his dying day. It is fortunate that this early portrait of him survives to remind us that he was once young, and to enable us to trace out the immortal lineaments of his beauty; otherwise he would have wandered forever through history as the broken old man of more than three-score and ten, such as he was at the hour of his great fame and when the world first knew him.

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[1] Wickersham, *History of Education in Pennsylvania*, p. 237.

[2] Bates, *Martial Deeds of Pennsylvania*, p. 983.

[3] *Ibid.*, p. 984.

Many references to the speech by those who heard it have been preserved, and they are uniformly of the most flattering character. I will refer to only two of them. The venerable Dr. George Smith, who had been a member of the legislature of 1834, wrote, nearly fifty years later, that "the house was electrified," and the "school system was saved from ignominious defeat." The Harrisburg correspondent of the American Daily Advertiser, of Philadelphia, attempted to preserve the occasion by a report, which is all the more forcible because given in the unsensational manner of that day. After crediting Stevens with preventing the repeal of the law, he declared that "the speech of this gentleman was the ablest I have ever heard." He then endeavored to furnish a synopsis of the speech, but he threw up the task in despair, and confessed that he was "unable to give even an outline of this most masterly production."

When every allowance is made from the reports of the affair which have been handed down, the effect in this instance proved the working of a prodigious cause. The house immediately voted, when Stevens sat down. The victory so confidently anticipated by the friends of repeal was suddenly turned into defeat and the motion of Stevens was carried by a nearly two-thirds vote. Most remarkable of all, the senate, which but a short time before had so decisively voted for repeal, returned to its chamber, thrilled and delighted with the great effort, converted as no senate had ever been converted before, and immediately concurred, with a few unimportant amendments, in the House substitute bill.

Governor Wolf was a loyal friend of free schools. Politically, he was opposed to Stevens. But he immediately sent for him after his great and unexpected triumph in the house, and, throwing his arms about his neck, warmly thanked him for the great service he had "rendered to our common humanity."[1] Some of the enthusiastic friends of the system he had saved had portions of the speech beautifully printed on silk and presented it to Stevens.

Speeches have sometimes changed the action of a legislative body when its mind had been apparently made up; but a large majority of the Pennsylvania house had been chosen with reference to the educational issue and for the purpose of repealing that portion of the law which made schools free. The speech of Stevens decisively turned them from that purpose. It is doubtful if his achievement can be matched in the history of legislative assemblies. Certainly it at once established his position among the very ablest men in Pennsylvania.

A PLEA FOR PUBLIC SCHOOLS BY THADDEUS STEVENS.

A speech against the repeal of the school law, delivered in the Pennsylvania legislature April, 1835.

Mr. SPEAKER: I will briefly give you the reasons why I shall oppose the repeal of the school law.

This law was passed at the last session of the legislature with unexampled unanimity, but one member of this house voting against it. It has not yet come into operation, and none of its effects have been tested by experience in Pennsylvania. The passage of such a law is enjoined by the constitution; and has been recommended by every governor since its adoption. Much to his credit, it has been warmly urged by the present executive in his annual messages delivered at the opening of the legislature. To repeal it now, before its practical effects have been discovered, would argue that it contained some glaring and pernicious defect, and that the last legislature acted under some strong and fatal delusion, which blinded every man of them to the interests of the Commonwealth. I will attempt to show that the law is salutary, useful, and important, and that consequently the last legislature acted wisely in passing and the present would act unwisely in repealing it. That, instead of being oppressive to the people, it will lighten their burdens, while it elevates them in the scale of human intellect.

[1] Col. J. W. Forney in Washington Chronicle. See the Pennsylvania School Journal, Vol. XXXIX, p. 331.

It would seem to be humilitating to be under the necessity, in the nineteenth century, of entering into a formal argument, to prove the utility, and, to free governments, the absolute necessity of education. More than two thousand years ago the Deity who presided over intellectual endowments, ranked highest for dignity, chastity, and virtue among the godesses worshipped by cultivated pagans. And I will not insult this house or our constituents by supposing any course of reasoning necessary to convince them of its high importance. Such necessity would be degrading to a Christian age, a free Republic.

If, then, education be of admitted importance to the people, under all forms of government, and of unquestioned necessity, when they govern themselves, it follows, of course, that its cultivation and diffusion is a matter of public concern, and a duty which every government owes to its people. In accordance with this principle, the ancient Republics, who were most renowned for their wisdom and success, considered every child born subject to their control, as the property of the State, so far as its education was concerned; and during the proper period of instruction they were withdrawn from the control of their parents and placed under the guardianship of the Commonwealth. There, all were instructed at the same school; all were placed on perfect equality, the rich and the poor man's sons; for all were deemed children of the same common parent of the Commonwealth. Indeed, where all have the means of knowledge placed within their reach, and meet at common schools on equal terms, the forms of government seem of less importance to the happiness of the people than is generally supposed; or rather, such a people are seldom in danger of having their rights invaded by their rulers. They would not long be invaded with impunity. Prussia, whose form of government is absolute monarchy, extends the blessing of free school into every corner of the kingdom—to the lowest and poorest of the people. With a population equal to our whole Union, she has not more than 20,000 children who do not enjoy its advantages. And the consequence is, that Prussia, although governed by an absolute monarch, enjoys more happiness, and the rights of the people are better respected than in any other government in Europe.

If an elective Republic is to endure for any great length of time, every elector must have sufficient information, not only to accumulate wealth and take care of his pecuniary concerns, but to direct wisely the legislature, the ambassadors, and the Executive of the nation—for some part of all these things, some agency in approving or disapproving of them, falls to every freeman. If, then, the permanency of our Government depends upon such knowledge, it is the duty of government to see that the means of information be diffused to every citizen. This is a sufficient answer to those who deem education a private and not a public duty—who argue that they are willing to educate their own children, but not their neighbors children.

But while but few are found ignorant and shameless enough to deny the advantages of general education, many are alarmed at its supposed burdensome operation. A little judicious reflection, or a single year's experience, would show that education, under the free-school system, will cost more than one-half less, and afford better and more permanent instruction than the present disgraceful plan pursued by Pennsylvania. Take a township 6 miles square and make the estimate; such townships, on an average, will contain about 200 children to be schooled. The present rate of tuition generally (in the country) is $2 per quarter. If the children attend school two quarters each year, such township would pay $800 per annum. Take the free-school system—lay the township off into districts 3 miles square; the farthest scholars would then have 1½ miles to go, which would not be too far. It would require four schools. These will be taught, I presume, as in other States, three months in the winter by male and three months in the summer by female teachers; good male teachers can be had at from $16 to $18 per month and board themselves; females at $9 per month. Take the highest price, $18, for three months would be $54, and then for females at $9 for three months, $27, each school would cost $81; or four to a township, $324. The price now paid for the same is $800; saving for each township of 6 miles square, $476 per annum.

If the instruction of 200 scholars will save by the free-school law $476, the 500,000 children in Pennsylvania will save $1,190,000! Very few men are aware of the immense amount of money which the present expensive and partial mode of education costs the people. Pennsylvania has half a million of children, who either do, or ought to go to school six months in the year. If they do go, at $2 per quarter, their schooling costs $2,000,000 per annum! If they do not go when they are able, their parents deserve to be held in disgrace. Where they are unable, if the State does not furnish the means, she is criminally negligent. But by the free-school law, that same amount of education which would now cost $2,000.000, could be supplied at less than one-third of this amount. The amendment which

is now proposed as a substitute for the school law of last session, is, in my opinion, of a most hateful and degrading character. It is a reenactment of the pauper law of 1809. It proposes that the assessors shall take a census, and make a record of the poor. This shall be revised, and a new record made by the county commisssioners, so that the names of those who have the misfortune to be poor men's children shall be forever preserved, as a distinct class, in the archives of the county! The teacher, too, is to keep in his school a pauper book, and register the names and attendance of poor scholars; thus pointing out and recording their poverty in the midst of their companions. Sir, hereditary distinctions of rank are sufficiently odious; but that which is founded on poverty is infinitely more so. Such a law should be entitled "An act for branding and marking the poor, so that they may be known from the rich and proud." Many complain of this tax, not so much on account of its amount, as because it is for the benefit of others and not themselves. This is a mistake; it is for their own benefit, inasmuch as it perpetuates the Government and insures the due administration of the laws under which they live, and by which their lives and property are protected. Why do they not urge the same objection against all other taxes? The industrious, thrifty, rich farmer pays a heavy county tax to support criminal courts, build jails, and pay sheriffs and jail keepers, and yet probably he never has, and never will have, any direct personal use of either. He never gets the worth of his money by being tried for a crime before the court, by being allowed the privilege of the jail on conviction, or receiving an equivalent from the sheriff or his hangman officers! He cheerfully pays the tax which is necessary to support and punish convicts, but loudly complains of that which goes to prevent his fellow-being from becoming a criminal, and to obviate the necessity of those humiliating institutions.

This law is often objected to, because its benefits are shared by the children of the profligate spendthrift equally with those of the most industrious and economical habits. It ought to be remembered that the benefit is bestowed, not upon the erring parents, but the innocent children. Carry out this objection and you punish children for the crimes or misfortunes of their parents. You virtually establish cases and grades founded on no merit of the particular generation, but on the demerits of their ancestors; an aristocracy of the most odious and insolent kind—the aristocracy of wealth and pride.

It is said that its advantages will be unjustly and unequally enjoyed, because the industrious, money-making man keeps his whole family constantly employed, and has but little time for them to spend at school; while the idle man has but little employment for his family, and they will constantly attend school. I know, sir, that there are some men, whose whole souls are so completely absorbed in the accumulation of wealth, and whose avarice so increases with success, that they look upon their very children in no other light than as instruments of gain—that they, as well as the ox and the ass within their gates, are valuable only in proportion to their annual earnings. And, according to the present system, the children of such men are reduced almost to an intellectual level with their colaborers of the brute creation. This law will be of vast advantage to the offspring of such misers. If they are compelled to pay their taxes to support schools, their very meanness will induce them to send their children to them to get the worth of their money. Thus it will extract good out of the very penuriousness of the miser. Surely a system which will work such wonders, ought to be as greedily sought for, and more highly prized, than that coveted alchemy which was to produce gold and silver out of the blood and entrails of vipers, lizards, and other filthy vermin.

Why, sir, are the colleges and literary institutions of Pennsylvania now, and ever have been, in a languishing and sickly condition? Why, with a fertile soil and genial climate, has she, in proportion to her population, scarcely one-third as many collegiate students as cold, barren New England? The answer is obvious; she has no free schools. Until she shall have you may in vain endow college after college; they will never be filled, or filled only by students from other States. In New England free schools plant the seeds and the desire of knowledge in every mind, without regard to the wealth of the parent or the texture of the pupil's garments. When the seed, thus universally sown, happens to fall on fertile soil, it springs up and is fostered by a generous public until it produces its glorious fruit. Those who have but scanty means and are pursuing a collegiate education, find it necessary to spend a portion of the year in teaching common schools; thus imparting the knowledge which they acquire, they raise the dignity of the employment to a rank which it should always hold, honorable in proportion to the high qualifications necessary for its discharge. Thus devoting a portion of their time to acquiring the means of subsistence, industrious habits are forced upon them

and their minds and bodies become disciplined to a regularity and energy which is seldom the lot of the rich. It is no uncommon occurrence to see the poor man's son, thus encouraged by wise legislation, far outstrip and bear off the laurels from the less industrious heirs of wealth. Some of the ablest men of the present and past days never could have been educated except for that benevolent system. Not to mention any of the living, it is well known that that architect of an immortal name, who "plucked the lightnings from heaven and the sceptre from tyrants." was the child of free schools. Why shall Pennsylvania now repudiate a system which is calculated to elevate her to that rank in the intellectual, which, by the blessing of Providence, she holds in the natural world? To be the keystone of the arch, the "very first among her equals?" I am aware, sir, how difficult it is for the great mass of the people, who have never seen this system in operation, to understand its advantages. But is it not wise to let it go into full operation and learn its results from experience? Then, if it prove useless or burdensome, how easy to repeal it. I know how large a portion of the community can scarcely feel any sympathy with, or understand the necessity of the poor; or appreciate the exquisite feelings which they enjoy when they see their children receiving the boon of education, and rising in intellectual superiority above the clogs which hereditary poverty had cast upon them. It is not wonderful that he whose fat acres have descended to him, from father to son in unbroken succession, should never have sought for the surest means of alleviating it. Sir, when I reflect how apt hereditary wealth, hereditary influence, and perhaps as a consequence, hereditary pride are to close the avenues and steel the heart against the wants and the rights of the poor, I am induced to thank my Creator for having from early life bestowed upon me the blessings of poverty. Sir, it is a blessing, for if there be any human sensation more ethereal and divine than all others, it is that which feelingly sympathizes with misfortune.

But we are told that this law is unpopular; that the people desire its repeal. Has it not always been so with every new reform in the condition of man? Old habits and old prejudices are hard to be removed from the mind. Every new improvement which has been gradually leading man from the savage, through the civilized, up to a highly cultivated state, has required the most strenuous, and often perilous exertions of the wise and the good. But, sir, much of its unpopularity is chargeable upon the vile arts of unprincipled demagogues. Instead of attempting to remove the honest misapprehensions of the people, they cater to their prejudices, and take advantage of them to gain low, dirty, temporary, local triumphs. I do not charge this on any particular party. Unfortunately almost the only spot on which all parties meet in union is this ground of common infamy. I have seen the present chief magistrate of this Commonwealth violently assailed as the projector and father of this law. I am not the eulogist of that gentleman; he has been guilty of many deep political sins; but he deserves the undying gratitude of the people for the steady, untiring zeal which he has manifested in favor of common schools. I will not say that his exertions in that cause have covered all, but they have atoned for many of his errors. I trust that the people of this State will never be called on to choose between a supporter and an opposer of free schools. But if it should come to that; if that should be made the turning point on which we are to cast our suffrages; if the opponent of education were my most intimate personal and political friend, and the free-school candidate my most obnoxious enemy, I should deem it my duty as a patriot, at this moment of our intellectual crisis, to forget all other considerations, and I should place myself unhesitatingly and cordially in the ranks of Him whose banner streams in light. I would not foster nor flatter ignorance to gain political victories which, however they might profit individuals, must prove disastrous to our country. Let it not be supposed from these remarks that because I deem this a paramount object that I think less highly than heretofore of those great important cardinal principles which for years past have controlled my political action. They are, and ever shall be, deeply cherished in my inmost heart. But I must be allowed to exercise my own judgment as to the best means of effecting that and every other object which I think beneficial to the community. And, according to that judgment, the light of general information will as surely counteract the pernicious influence of secret, oath-bound, murderous institutions as the sun in heaven dispels the darkness and damp vapors of the night.

It is said that some gentlemen here owe their election to their hostility to general education—that it was placed distinctly on that ground, and that others lost their election by being in favor of it; and that they consented to supersede the regularly nominated candidates of their own party, who had voted for this law. May be so. I believe that two highly respectable members of the last legislature, from Union county, who voted for the school law, did fail of reelection on that

ground only. They were summoned before a county meeting, and requested to pledge themselves to vote for its repeal as the price of their reelection. But they were too high minded and honorable men to consent to such degradation. The people, incapable for the moment of appreciating their worth, dismissed them from their service. But I venture to predict that they have passed them by only for the moment. Those gentlemen have earned the approbation of all good and intelligent men more effectually by their retirement than they could ever have done by retaining popular favor at the expense of self-humiliation. They fell, it is true, in this great struggle between the powers of light and darkness; but they fell, as every Roman mother wished her sons to fall, facing the enemy with all their wounds in front.

True it is, also, that two other gentlemen, and I believe two only, lost their election on account of their vote on that question. I refer to the late members from Berks, who were candidates for reelection; and I regret that gentlemen whom I so highly respect and whom I take pleasure in ranking among my personal friends, had not possessed a little more nerve to enable them to withstand the assaults which were made upon them; or, if they must be overpowered, to wrap their mantles gracefully around them and yield with dignity. But this, I am aware, requires a high degree of fortitude, and those respected gentlemen, distracted and faltering between the dictates of conscience and the clamor of the populace, at length turned and fled. But duty had detained them so long that they fled too late, and the shaft which had already been winged by ignorance overtook and pierced them from behind. I am happy to say, sir, that a more fortunate fate awaited our friends from York. Possessing a keener insight into futurity and a sharper instinct of danger, they saw the peril at a greater distance and retreated in time to escape the fury of the storm, and can now safely boast that "discretion is the better part of valor," and that "they fought and ran away, and live to fight—on t' other side."

Sir, it is to be regretted that any gentleman should have consented to place his election on hostility to general education. If honest ambition were his object, he will ere long lament that he attempted to raise his monument of glory on so muddy a foundation. But, if it be so, that they were placed to obstruct the diffusion of knowledge, it is but justice to say, that they fitly and faithfully represent the spirit which sent them here, when they attempt to sacrifice this law on the altars which, at home, among their constituents, they have raised and consecrated to intellectual darkness; and on which they are pouring out oblations to send forth their fetid and noxious odors over the 10 miles square of their ambition! But will this legislature, will the wise guardians of the dearest interests of a great Commonwealth, consent to surrender the high advantages and brilliant prospects which this law promises, because it is desired by worthy gentlemen, who, in a moment of causeless panic and popular delusion, sailed into power on a Tartarean flood? A flood of ignorance, darker, and, to the intelligent mind, more dreadful than that accursed pool at which mortals and immortals tremble! Sir, it seems to me that the liberal and enlightened proceedings of the last legislature have aroused the demon of ignorance from his slumber; and, maddened at the threatened loss of his murky empire, his discordant howlings are heard in every part of our land!

Gentlemen will hardly contend for the doctrine of cherishing and obeying the prejudices and errors of their constituents. Instead of prophesying smooth things and flattering the people with the belief of their present perfection, and thus retarding the mind in its onward progress, it is the duty of faithful legislators to create and sustain such laws and institutions as shall teach us our wants, foster our cravings after knowledge, and urge us forward in the march of intellect. The barbarous and disgraceful cry which we hear abroad in some parts of our land, "that learning makes us worse—that education makes men rogues," should find no echo within these walls. Those who hold such doctrines anywhere would be the objects of bitter detestation if they were not rather the pitiable objects of commiseration, for even voluntary fools require our compassion as well as natural idiots.

Those who would repeal this law because it is obnoxious to a portion of the people would seem to found their justification on a desire of popularity. That is not an unworthy object when they seek that enduring fame which is constructed of imperishable materials. But have these gentlemen looked back and consulted the history of their race to learn on what foundation and on what materials that popularity is built which outlives its possessor, which is not buried in the same grave which covers his mortal remains? Sir, I believe that kind of fame may be acquired by deep learning, or even the love of it, by mild philanthropy or unconquerable courage. And it seems to me that, in the present state of feeling in Pennsylvania, those who will heartily and successfully support the cause of gen-

eral education can acquire at least some portion of the honor of all these qualities combined, while those who oppose it will be remembered without pleasure and soon pass away with the things that perish.

In giving this law to posterity you act the part of the philanthropist, by bestowing upon the poor as well as the rich the greatest earthly boon which they are capable of receiving; you act the part of the philosopher by pointing if you do not lead them up the hill of science; you act the part of the hero if it be true as you say that popular vengeance follows close upon your footsteps. Here, then, if you wish true popularity, is a theater in which you may acquire it. What renders the name of Socrates immortal but his love of the human family exhibited under all circumstances and in contempt of every danger? But courage, even with but little benevolence may confer lasting renown. It is this which makes us bow with involuntary respect at the name of Napoleon, of Cæsar, and of Richard of the Lion Heart. But what earthly glory is there equal in luster and duration to that conferred by education? What else could have bestowed such renown upon the philosophers, the poets, the statesmen, and orators of antiquity? What else could have conferred such undisputed applause upon Aristotle, Demosthenes, and Homer; on Virgil, Horace, and Cicero? And is learning less interesting and important now than it was in centuries past, when those statesmen and orators charmed and ruled empires with their eloquence?

Sir, let it not be thought that these great men acquired a higher fame than is within the reach of the present age. Pennsylvania's sons possess as high native talents as any other nation of ancient or modern time. Many of the poorest of her children possess as bright intellectual gems if they were as highly polished as did the scholars of Greece or Rome. But too long, too disgracefully long, has coward, trembling, procrastinating legislation permitted them to lie buried in "dark, unfathomable caves."

If you wish to acquire popularity, how often have you been admonished to build not your monuments of brass or marble but make them of ever-living mind. Although the period of yours or your children's renown can not be as long as that of the ancients, because you start from a later period, yet it may be no less brilliant. Equal attention to the same learning, equal ardor in pursuing the same arts and liberal studies, which has rescued their names from the rust of corroding time and handed them down to us untarnished from remote antiquity, would transmit the names of your children and your children's children in a green, undying fame down through the long vista of succeeding ages until time shall mingle with eternity.

Let all, therefore, who would sustain the character of the philosopher or philanthropist sustain this law. Those who would add thereto the glory of the hero, can acquire it here, for in the present state of feeling in Pennsylvania, I am willing to admit that but little less dangerous to the public man is the war club and battle-ax of savage ignorance, than to the Lion-hearted Richard was the keen scimiter of the Saracen. He who would oppose it, either through inability to comprehend the advantages of general education, or from unwillingness to bestow them on all his fellow-citizens, even to the lowest and the poorest, or from dread of popular vengeance, seems to me to want either the head of the philosopher, the heart of the philanthropist, or the nerve of the hero.

All these things would be easily admitted by almost every man, were it not for the supposed cost. I have endeavored to show that it is not expensive; but, admit that it were somewhat so, why do you cling so closely to your gold? The trophies which it can purchase, the idols which it sets up, will scarcely survive their purchaser. No name, no honor can long be perpetuated by mere matter. Of this Egypt furnishes melancholy proof. Look at her stupendous pyramids, which were raised at such immense expense of toil and treasure! As mere masses of matter they seem as durable as the everlasting hills, yet the deeds and the names they were intended to perpetuate are no longer known on earth. That ingenious people attempted to give immortality to matter, by embalming their great men and monarchs. Instead of doing deeds worthy to be recorded in history, their very names are unknown, and nothing is left to posterity but their disgusting mortal frames for idle curiosity to stare at. What rational being can view such soulless, material perpetuation, with pleasure? If you can enjoy it, go, sir, to the foot of Vesuvius; to Herculaneum and Pompeii, those eternal monuments of human weakness. There, if you set such value on material monuments of riches, may you see all the glory of art, the magnificence of wealth, the gold of Ophir, and the rubies of the East, preserved in indestructible lava, along with their haughty wearers—the cold, smooth, petrified, lifeless beauties of the "Cities of the Dead."

Who would not shudder at the idea of such prolonged material identity? Who would not rather do one living deed than to have his ashes forever enshrined in

ever-burnished gold? Sir, I trust that when we come to act on this question we shall all take lofty ground—look beyond the narrow space which now circumscribes our visions—beyond the passing, fleeting point of time on which we stand; and so cast our votes that the blessing of education shall be conferred on every son of Pennsylvania—shall be carried home to the poorest child of the poorest inhabitant of the meanest hut of your mountains, so that even he may be prepared to act well his part in this land of freemen, and lay on earth a broad and a solid foundation for that enduring knowledge which goes on increasing through increasing eternity.

VII.—Education in Bulgaria.

A census taken in Bulgaria in 1893, revealed some remarkable facts. In that year the principality had a population of 3,310,713, among whom were 2,793,272 illiterates, children included, and 517,441 who could read and write (410,973 men and only 106,418 women), hence there were 5 illiterates to every 1 who could read and write, or 3 illiterate males to every 1 literate male, and 14 illiterate women to every 1 literate woman. Of every 100 inhabitants 15.63 had had some school instruction. This ratio is much higher in the cities, to wit: 47.43 males, 23.29 females, or an average of 35.90; while in the country districts the ratio varied between 10.30, and 2.37. If the children under school age, the blind, deaf, and imbecile are deducted as incapable of reading and writing (a total of 700,000 at least) the ratio of literates is raised to nearly 20 per cent. If, furthermore, we deduct the Mohammedans, who are almost all illiterate, the percentage of adult Bulgarians is increased considerably. A search among the marriage registers gives the percentage of men and women who could sign their names:

	Men.	Women.	Average.
	Per cent.	*Per cent.*	*Per cent.*
Hebrews	76.96	59.69	68.32
Armenians	77.29	52.27	64.77
Protestants	60.00	60.00	60.00
Roman Catholics	35.39	30.90	33.15
Greek Catholics	42.39	13.24	27.82
Mohammedans	6.50	3.13	4.81
Averages	36.75	12.20	24.48

According to this the Hebrews are the ones who frequent schools most regularly, surpassing the Greek Catholics about two and one-half times, while the Protestants and Armenians remain but little behind them. But with reference to female education the Protestants take the first rank, followed by the Hebrews and Armenians. If the men are taken alone, the Greek Catholics stand higher than the Roman Catholics, but their women stand far below them in education. The Mohammedans exhibit only one-sixth as much education as the Greek Catholics, and only one-fifteenth of that of the Hebrews. These facts are corroborated officially by the publication of the results obtained by examining the army recruits.

According to these publications the following percentages of army recruits had an elementary education:

Year.	Christians.	Mohammedans.	Averages.
	Per cent.	*Per cent.*	*Per cent.*
1888	26.58	5.41	31.65
1889	38.38	3.25	31.62
1890	35.92	4.44	30.75
1891	40.64	4.20	34.17
1892	59.49	4.27	51.17
1893	50.61	3.93	43.25

This table reveals the fact, that school education increases among the Christians, but not among the Mohammedans. The following table shows what place Bulgaria takes in the list of continental European States.

Of every 100 army recruits the following per cent could read and write.

Country.	Year.	Per cent.	Country.	Year.	Per cent.
Germany	1891	99.99	Italy	.....	58.00
Sweden	1890	99.80	Bulgaria	1891	34.17
France	1891	92.60	Russia	1887	31.34
Belgium	1890	84.00	Servia	1881	20.70
Austria	.....	66.00	Roumania	1892	10.60

Hence, Bulgaria is ahead of its neighbors on the Balkan peninsula—i. e., Servia and Roumania, though it gained its independence much later than the other two countries. Though the figures given for Servia are of 1881, that does not materially change the case, as is seen from the following table. Of every 100 inhabitants (including children under 6) there could read and write:

Country.	Year.	Males.	Females.	Average.
Belgium	1891	64.35	60.40	62.37
Servia	1891	17.73	3.55	10.73
Bulgaria	1893	24.31	6.57	15.63

Without children below school age:

Country.	Year.	Males.	Females.	Average.
Belgium	1891	72.68	68.22	70.45
Servia	1891	23.02	4.74	14.17
Bulgaria	1893	30.88	8.27	19.88

Comparing the results of the two censuses of 1888 and 1893, we find that of every 100 inhabitants in Bulgaria there could read and write:

Year.	Males.	Females.	Average.
1888	17.06	4.12	10.71
1893	24.31	6.57	15.63

Expressing it in other terms, we may say that the number of males in Bulgaria able to read and write has increased 42 per cent within five years; that of females, 60 per cent; that of the population, 46 per cent. If we consider that the population of Bulgaria increased by 156,338 in five years, or about 5 per cent, it is plainly seen the increase in education is even greater than the figures state, and it is reasonable to suppose, that the 15 per cent of literates found in the last census will increase to 50 per cent within the next fifteen or twenty years. (Zeitschrift für ausländisches Unterrichtswesen.)

VIII.—Consolidation of Schools—The Kingsville Plan.[1]

Those who have any acquaintance with district schools know that their advantages are meager as compared with those of the town or city school. There are thousands of these rural schools which furnish their pupils scant preparation for the duties of life. As a rule they are not graded; the studies taught are the most elementary; the classes are small, and the attendance is irregular. Many districts are so sparsely settled that it is impossible to raise by taxation sufficient funds to build good schoolhouses, or hire a sufficient number of teachers. And even if this be possible the attendance is such as to make the per capita cost of maintenance unduly large, so that even a common school education becomes very costly.

To overcome the many disadvantages of the subdistrict system, and for the purpose of offering an advanced graded school education to every boy and girl of the proper school age in Kingsville Township, Ashtabula County, Ohio, its citizens have adopted a plan of consolidation, or centralization, of the subdistrict schools of the township into a common central school, conveying the pupils from every part of the township to and from school by means of coaches.

The plan was not original with the citizens of Kingsville, Ohio; it was adopted by the citizens of Quincy, Mass., in 1874, and reported as successful. In Concord, Mass., it has been in operation since 1878. Up to the time the "Kingsville plan" went into effect a large proportion of Massachusetts towns had consolidated their schools. No similar plan, however, had been tried in the State of Ohio or in any States of the West. Generally speaking, the people were ignorant of this advance in methods of common-school management. The plan was favored by many educators, but up to the year 1892 no practical step had been taken to introduce a system of consolidation.

While the township is the unit of school organization and administration in Ohio, and is the school district proper, it is divided into subdistricts for the regulation of school attendance, and to serve as a unit of representation in the township board. Previous to 1892 a board of directors, consisting of 3 men elected by the voters of the school district, employed the teachers and carried on the schools. In the year 1892 all the old powers of the directors were transferred to the township board, which was now represented by one director from each subdistrict. It was this year that the question of building a new schoolhouse in district No. 4, in Kingsville Township came up for discussion before the school board of the township. The schoolhouse was a necessity, but the school attendance was small. The board hesitated about expending the money for a new building. It was at this juncture that Prof. F. E. Morrison, then the principal of the village high school, urged upon the school board the adoption of the plan suggested the year before, that the few scholars of district No. 4 be brought to the village high school at the expense of the taxpayers of the township. As the expense of conveying the children of that district to the high school was far less than the cost of hiring a teacher, to say nothing of erecting a new building, the board of education favored the idea. Upon investigation it was found, however, that there was no law on the statute books of the State which authorized the expenditure of money out of the public school fund to pay for conveying children to and from a centrally located school.

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[1] By Edward Erf, in the Arena, July, 1899. A compilation of the available information upon this subject was given in the Bureau's Report of 1894-95, Vol. 2, pp. 1469-82; also in the Report of 1895-96, Vol. 2, pp. 1853-58. The Massachusetts School Report of 1897-98 contains (pp. 437-459) a valuable report on "The consolidation of schools and the conveyance of children," made by G. T. Fletcher, agent of the Massachusetts Board of Education, This latter is also issued in pamphlet form.

While discussing the question of conveyance the idea of school consolidation took deeper root. A bill was passed in the Ohio State legislature which enacted that any board of education in any township which, by the census of 1890, had a population of not less than 1,710 nor more than 1,715, may, at their discretion, appropriate funds derived from the school tax for the conveyance of pupils in subdistricts from their homes to the high school of said township, provided such appropriation for any subdistrict shall not exceed the amount necessary, in the judgment of the board of directors, for the maintenance of a teacher in such subdistrict for the same period of time. The law was based specifically upon the rate of population for Kingsville Township, and was passed for the benefit of that township only, so as to gain the support of legislators from other sections of the State who were attached to the old plan, but who did not object to a trial of the plan, which they regarded as chimerical.

The system was put in operation in Kingsville Township with but litlte opposition, which came wholly from teachers and their friends, who saw that by the consolidation of the schools the number of positions open to them was lessened. Each subdistrict was admitted upon a written petition signed by the taxpayers of the school district. At first only three subdistricts availed themselves of the privilege. A fourth followed later. At present there are only two subdistricts which still maintain separate schools; but these, it is confidently expected, will follow within a year.

When the taxpayers of the subdistrict have by petition signified their willingness to abandon the school of the subdistrict, and send their children to the central school, the board of education employs a teamster to convey the pupils of the subdistrict thither—one teamster employed for each subdistrict. These teamsters work under a special contract, and agree to construct covered wagons, approved by the board of education, to be used in the conveyance of the pupils. These wagons are provided with side and end curtains, which may be raised or removed on warm days, and tightly closed in cold or stormy weather. They have steps in the rear by means of which the pupils enter or leave the coach. The seats are arranged lengthwise, and are provided with cushions, and suitable blankets for the covering and comfort of the pupils. Each coach carries from 18 to 24 persons.

The contracts for conveying the pupils from each subdistrict are let out to the lowest responsible bidder; the board, however, reserves the right to give the contracts to those whom they deem fit to be intrusted with the care of the pupils. The moral character of the bidder, as well as the lowness of the bid, is considered. The teamster enters into a written agreement that he will get the pupils at their homes, convey them to the central school, at a time set forth in the contract, and be ready to return them within a specified time after the school is out. He also agrees that no profane, immoral, or indecent language shall be used by himself or others, during the transportation of the pupils to and from the school building. He further agrees that he will allow no tobacco or spirituous liquors to be used by any person in the conveyance. Every morning, during the school year, the teamster drives to the homes of the pupils on his route, makes his presence known by ringing a bell or blowing a horn, to which the pupil responds by promptly entering the wagon. If he does not appear within a few minutes the wagon drives on, and the pupil is marked tardy. Thus far there have been very few cases of tardiness. The price per day for each wagon varies in the different districts. During the present school year the price per wagon for conveying the pupils from the four outlying subdistricts is $1.15 a day. Up to the present time, there have been more bidders than contracts to award. While the price is low, it offers fair and sure compensation to those who accept the contracts.

The experiment was watched with much interest by educators, and those inter-

ested in education, throughout Ohio. Some thought the plan impracticable, others championed it with ardor. The latter looked upon it as the most practicable and economical solution of the vexed "country school problem." This was specially true among educators of neighboring townships and counties. They saw realized in this plan their hope of giving to the country pupil all the advantages of education which the city boy or girl enjoys. And they urged the adoption of the plan in the localities in which they taught schools. Accordingly, two years later, a more general law was passed, which provided for the extension of the "Kingsville plan" to other townships. It has also been adopted in townships in New York, Pennsylvania, West Virginia, Kentucky, and other States of the West, since its trial in Kingsville, Ohio.

The residents of the subdistricts of Kingsville Township which have adopted this plan, would deem it retrogression to go back to the old subdistrict plan. It has given the school system of Kingsville an individuality which makes it unique and progressive. Pupils from every part of the township enjoy a graded school education, whether they live in the most remote corner of the township or at the very doors of the central school. The line between the country-bred and village-bred youth is blotted out. They study the same books, are competitors for the same honors, and engage in the same sports and pastimes. This mingling of the pupils from the subdistricts and the village has had a deepening and broadening influence upon the former, without any disadvantage to the latter. With the grading of the school and the larger number of pupils have come teachers of a more highly educated class. Higher branches of study are taught, the teachers are more conversant with the needs of their profession. The salaries are larger; the health of the pupils is preserved, because they are not compelled to walk to school in slush, snow, and rain, to sit with damp, and perhaps wet feet, in ill-ventilated buildings. Nor is there any lounging by the wayside. As the use of indecent and obscene language is prohibited in the wagons all opportunities for quarreling or for improper conduct on the way to and from school are removed. The attendance is larger, and in the subdistricts which have taken advantage of the plan it has increased from 50 to 150 per cent, in some cases; truancy is unknown. It has lengthened the school year for a number of the subdistricts; it has increased the demands for farms in those subdistricts which have adopted the plan, and real estate therein is reported more salable. The drivers act as daily mail carriers. All parts of the township have been brought into closer touch and sympathy.

The cost of maintenance is less than that of the schools under the subdistrict plan; the township has had no schoolhouses to build; it has paid less for repair and fuel. "Since the schools were consolidated, the incidental expenses have decreased from $800 to $1,100 per year to from $400 to $600 per year." In the first three years following its adoption, Kingsville Township has actually saved $1,000.

State Commissioner of Public Schools O. T. Corson, in his forty-third annual report to the governor of Ohio, referring to the Kingsville experiment, states that "the expense of schooling the children has been reduced nearly one-half, the daily attendance has been very largely increased, and the quality of the work done has been greatly improved." Prof. J. R. Adams, superintendent of schools of Madison Township, Lake County, says that "under the new plan the cost of tuition per pupil, on the basis of total enrollment, has been reduced from $16.00 to $10.48; on the basis of average daily attendance, from $26.66 to $16.07. The total expense will be about the same in this district as under the old plan, but the cost per pupil will be much less." This is because the school attendance has increased in Madison Township from 217 to 300 pupils, since the plan went into operation.

In the townships where the "Kingsville plan" has been adopted it has met with general favor, and has received the warmest support of educators, who regard it

as a long step forward toward placing the country schools upon a higher plane of efficiency. Superintendent Adams, referred to above, writes: "A trial of this plan of consolidating our schools has satisfied me that it is a step in the direction toward whatever advantages a well-graded and well-classified school of three or four teachers has over a school of one teacher with five or eight grades. I am more thoroughly convinced than ever that centralization is the true solution of the country school problem." Prof. F. E. Morrison, to whom its adoption by the board of education in Kingsville Township was in a great measure due, speaks of it as "a system of education superior to any in the State of Ohio, and one which is to be the system of the future." And in the forty-fifth report to the governor of Ohio, State Commissioner O. T. Corson, referring to the "Kingsville plan," says: "I anticipate none the less an increasing tendency in all parts of the State, year by year, to make the law serviceable in reducing school expenses, and in extending the benign influence of well-graded instruction. Incidental to the operation of this law, township high schools will be established, township libraries will be built up, and possibly it is no idle hope that the same wagons that carry the children to and from school may also carry, under Government contract, the mails, and distribute them free to our farming communities."

Prof. L. E. York, superintendent of Kingsville School, in writing concerning the system, says: "The best physical laboratory in America is the well-regulated American farm. Here the boys and girls study nature first-handed. Here they observe the growth and life of plants and animals. Here they breathe pure air, become familiar with the beauties and wonders of the natural world. Here they make character. To have added to all these opportunities the advantages of a high school education, without any of the disadvantages that attend the spending of evenings, without chores or home duties, in the town, is an educational condition that is almost ideal."

The pupils like the system, as do the teachers employed. It has gained the favor of parents, and in general is regarded by those who have studied it and understand its workings as a most practical advance in methods of rural education.

IX.—The New Requirements for Admission to the University of Illinois.[1]

By Stephen A. Forbes, Ph. D., dean of the College of Science, University of Illinois.

The relations and responsibilities of the State universities of America, as compared with those of other institutions of higher learning, are in some respects new and peculiar. At no earlier time and nowhere else in the world has there been so extensive and so homogeneous a university system standing in relations so immediate and so vital to a general system of public schools. If this State university system had been historically a direct outgrowth of the public school, proposed and promoted mainly by public school men, and organized with principal reference to the public school relationship; if it had been originally intended simply as an extension of the work of the public high school into other and higher fields, then the connection between these different parts of the educational systems of the States would have been primary and organic, and problems of relationship, interdependence, and mutual influence, direct and reflex, would have been taken up and solved in some fashion in the very beginning; but, as we all know, this was not the fact. The controlling motive to the establishment of the State universities, especially the newer ones in the Central and Western States of the Union, was a desire to provide for the mass of our youth a kind of higher

[1] Read at the Illinois High School Conference, held at the university May 19, 1893.

education not distinctly prepared for or even foreshadowed in either the public high school or the private academy of that day, and not at all contemplated in the plans or the courses of the collegiate institutions then in existence here. The leading and controlling motive, without the efficient operation of which the founding of the State universities would at least have been long postponed, was a desire for an industrial education of collegiate grade founded essentially on the physical, natural, and mathematical sciences and leading to the practice and teaching of industrial arts and employments as a calling or a career.

The State university movement was not more notable, however, for the novelty of its ends than for the generous breadth of its intentions. While first making sure, very naturally, that there should be no possible failure or miscarriage of this primary purpose, a way was made in the beginning for expansion in due time of the work of these new institutions over the whole field of liberal learning and even of scholastic study, at that time already occupied more or less efficiently, partly by endowed colleges and partly by colleges which were not even endowed.

Now, these preexisting private and sectarian colleges, the private academies, and the public high schools had grown up and gone along together, influenced in some measure by the same educational ideals and controlled to a great extent by the same classes of men, and hence what adjustment there was of high-school work to collegiate study was an adjustment of it to the work of what we now call, for short, the old-fashioned college. The high-school graduate, if he went to college at all, went of course to a college of the old school; the high-school teacher and principal, if college men at all, came from such purely literary colleges, and the high school itself, if it prepared for college at all, prepared for such a college of literature, as we should call it now. The education of the whole people, including that of the teaching class, was thus narrow and one-sided, and the new State universities found themselves largely in the air, with no stable foundation for preparatory work beneath them. Here was a foundation story, the public school, slowly and carefully built up, the work of experienced builders, and here was a house and lean-to over it, but the lean-to was on the foundation, and the main building was on stilts.

Two things were evidently necessary to the symmetry of this rather ridiculous educational edifice, one to be done immediately by the university and the other immediately by the public school, but each really requiring the intelligent and earnest cooperative effort of both; first, the building up and building out of the collegiate literary lean-to until it should form a strong, equal, and harmonious part of the whole educational structure; and, second, the enlargement of the public school foundation to take the place of the temporary braces and piles on which the scientific, engineering, and agricultural departments of the university were propped up in mid-air.

Fortunately, the natural tendency of the times has been favorable to both these constructive educational movements, and notable progress has been made in both. It is now some years since the University of Illinois ceased to be essentially an industrial institution; and its college of literature and arts has pushed rapidly outward and upward, strengthening its walls to support the added weight, and sending upward also a graceful and imposing tower whose aspiring apex sometimes seems to swing suspended in the upper air. And the public school has appreciably strengthened its work and enriched its courses in the scientific lines, and is beginning to afford in chemistry, physics, and biology some hopeful approximation, in its preparation for the corresponding college courses, to that which it now rightly affords in literature and in Latin, for example. But this adjustment of high school and university is of course, as yet, incomplete, especially here in Illinois, where, for various reasons, some of them obvious and oth-

ers occult, the task of coordination has been unusually difficult. It is because the faculty of the University of Illinois has made, during the past year and a half, a strong, persistent, and, as we think, highly successful effort to improve this adjustment materially in very important matters that I have been charged with the duty of explaining our recent action with respect to the university entrance requirements.

As you will readily see from the way in which I have approached my subject, I have not supposed it sufficient that I should give you a bare mechanical explanation of the meaning and application of our new requirements, but have thought it better that I should try to show what we have had principally in mind as the general ends to be met and as the controlling conditions present to limit and direct our action, and that I should then show you how these ends have actually been approached, if not altogether accomplished, and where and how these limiting conditions have affected our course.

Since this is the university of the State, and of the whole of the State, we have undertaken to come into immediate, vital, and helpful relations of some sort to every high school in Illinois, whatever its kind or grade, and have further deemed it our duty not to lose sight even of those parts of the State in which there are no true high schools. For our purpose the county is the educational unit of maximum size, this unit being in advanced and prosperous counties much subdivided into units of smaller size, but in some cases remaining substantially without division. We are looking in each such county for the best public school, for the highest firm educational standing ground, and from that foundation corner we intend shall start, some day, something by which the competent and aspiring student may climb into the university of his State. Paved pathway, carpeted stair, naked ladder or knotted rope—something should stand or swing within the reach of every fairly fortunate boy or girl in the State who has done the best he can in his county, by the aid of which he may make his way upward as far as the most favored child from any part of Illinois. Paraphrasing a striking remark of Professor Huxley, I would say that before our educational system can be fully worthy of the name there must be in every Illinois cornfield and country town the foot of a ladder, the upper end of which shall reach to the top of the State University.

We have also endeavored to keep clearly in mind the fact that university and high school and the whole educational system generally are not ends in themselves or immediately subordinate in any way to each other, but that all are subordinate, as a whole and in every part, to the general end of the public welfare in the broadest and highest sense of that term, and that the educational welfare of no part of the public should be sacrificed to that of any other part. The interests of the pupil who can not go beyond the primary school, beyond the grammar school, beyond the high school, should be just as carefully studied, just as fully taken into account in every part of the organization, its exactions and requirements, as if he were to go through the full course of undergraduate and graduate study provided at the university itself.

Especially we have endeavored to give full weight to the fact that the public high school does not exist for the university, was not organized primarily to prepare its pupils for college, and could not long be maintained in the average Illinois community of the present time if it permitted anything to take precedence of its main present object, that of preparing its graduates to enter immediately and to a certain advantage upon the business of life. We have, I think, fully realized, and have endeavored to reflect in our exactions and adjustments, the highly composite character of the people of this State, the great differences in the educational ideals of communities in different parts of it, and the great and necessary diversity, in the smaller schools especially, with respect to courses of high-school study—diversities due to differences of local sentiment and control, to

variations in the preparation and ability of the corps of instruction in such smaller schools, and to variations in the stage of development of one school as compared with another of its grade or class.

While the university should, of course, exercise a strengthening and elevating influence on the high school, it must not force an over-rapid and unhealthy growth into unstable conditions; it must not force an artificial differentiation or specialization within the high school; it must not force anything on or into or out of the high school or the high-school community, but should take all good work which the high school offers at its real value as a preparation for college, enabling the student from any such a school to move on readily at the university from any point at which his high-school teachers leave him.

It must not stimulate and reward unequally equally valuable elements of high-school work; it must not use its influence, and especially it must not exercise its power, to distort or to deform high-school courses or to perpetuate such distortion or deformation by laying special stress upon or attaching special value to subjects which happen to be for the time being best or most conveniently taught. It must assist rather to rectify wavering lines of growth, to strengthen weak places, to check excess; it must have, in short, as said before, a constant eye to the ultimate educational welfare of the whole public which it exists only to serve.

Hence it must not adhere stupidly or obstinately to traditions established in former times or under different conditions from those present, but must move with the progress of civilization, flexibly adapting itself to present conditions and present needs, anticipating indeed for its students, so far as possible, the future conditions under which they must live and work as men and women. It must look forward, and not merely back.

It must not be content merely to imitate anything or anybody; but must study carefully its own conditions, and shape its organization and its work intelligently to its legitimate ends as determined by its own situation and responsibilities.

If one takes a bird's-eye view of the public school system of this State, as he would look over the landscape from a balloon, he finds that its upper surface, formed by its leading city and county schools, may be described as a greatly diversified inclined plane, with its highest levels to the northeast. Thence it slopes irregularly westward and especially southward, with here and there a broadly based mound or hill whose top rises nearly or quite to the highest plane, and here and there a slender peak towering ambitiously upward, with no breadth of base to speak of, and its apex mostly Latin. The reasons for this slope and for the irregularity of it are partly geographical, partly ethnological, partly industrial, partly historical, partly personal, etc.; but whatever the causes, there are few States in America in which the term high school must be made to do duty over so wide a range of meaning, and it is to this picturesque but perplexing surface that the State university must adjust itself.

Our principal means of adjustment are four: First, our University Preparatory School, which is intended primarily to make good the deficiency of the public high schools in some places and their entire lack in others; second, our recently revised system of accrediting schools; third, our just-established policy of giving university credit for such accepted work of the highest secondary schools as laps over upon any of our college courses; and fourth, the revised system of entrance requirements which it is my special object to discuss here to-day.

The Preparatory School serves at least to conceal, if it does not now wholly level up, the inequalities of our foundation which I have already referred to. It seems now the firm intention of the University authorities to make this no longer a mere substitute for a good high school, but a really excellent high school itself, to the end that the student compelled to resort to it for his college preparation shall find himself at no disadvantage here in anything as compared to the one who gets his preparation at home.

By giving credit on our entrance conditions for all good high-school work, whether it covers the full admission requirement or much less than that, we establish vital relations with the lower and imperfectly developed high schools, and enable the student from such a school to know in advance just what he must do in our own preparatory school to fit himself for matriculation. We also, beyond doubt, by crediting the work of such schools in some departments only must stir the emulation of instructors in departments of the school not so credited, and thus, by recognizing the best, help to bring the poorer work up to the higher level.

By crediting students from the best high schools with work done there not needed for entrance here but substantially equivalent to elementary courses which the University still finds itself obliged to teach, we enable such students to enter upon a college course where their preliminary work ceases, and to continue in it without duplication of studies or loss of time.

By establishing our new entrance requirements we have virtually offered to accept, with certain important limitations which I will presently specify, any and all good high-school work as a preparation for any and all college courses, thus laying increased emphasis on training, and removing it in great measure from specific kinds of knowledge. We have practically said, "Send us capable pupils, well trained, with minds well stored with something, and we will not inquire too closely what that something is." We have begun to say, "Prepare your pupils carefully, conscientiously, thoroughly for active life, as best you can in your communities and in your conditions, and that preparation, if the work is well done, we will accept for college also; and so far as it is not so accepted the real defect is not in the high-school offering but in the college course." We have introduced, in short, the elective system in our entrance conditions, not as fully perhaps as we may do later, but still somewhat extensively, as I now proceed to explain to you by the aid of the accompanying tables of our requirements, old and new.

To make my discussion intelligible I shall have to say that by the term high-school credit, which I shall need to use repeatedly, we mean a full credit for one term's work in one subject, on the supposition that the school year of thirty-six weeks is divided into three terms, and that the subject credited is taken in daily class exercises of forty minutes each. More explicitly, a high-school credit in any subject represents a total of forty hours' work of sixty minutes each in the class-room, or equivalent work in laboratories and the like, a laboratory period being commonly twice as long as a recitation period. A full year's work in one subject would thus cover one hundred and twenty sixty-minute class-room hours, and a full year of high-school work on four subjects for a single pupil would cover four hundred and eighty such sixty-minute hours.

I must also explain what I mean by restricted and free electives, respectively, as used in Table I. A restricted elective study is one chosen within certain specific limits. We expect, for example, that every candidate for admission shall offer three credits in physical or biological science and six in foreign language, these elections being thus restricted by a specification of the general subjects from which they must be made. The free electives, on the other hand, may be chosen anywhere from the entire list of high-school electives shown by Table III.

TABLE I.—*Old and new entrance requirements.*

University colleges, etc.		Required studies.	Elective studies.			Total credits.
			Restricted.	Free.	Total.	
Agriculture	Old	20	2	0	2	22
	New	19	3	14	17	36
Science	Old	20	5	0	5	25
	New	20	9	7	16	36
Engineering	Old	21	5	0	5	26
	New	20	9	7	16	36
Literature and arts	Old	31	[1] 5 or 6	0	[1] 5 or 6	[1] 36 or 37
	New	19	12	5	17	36
Literature and arts, except classics	Old	34	2	0	2	36
	New	19	12	5	17	36
Latin	Old	34	2	0	2	36
	New	28	3	5	8	36
Greek	Old	36	0	0	0	36
	New	25	3	8	11	36

[1] Science or Greek.

TABLE II.—*Old and new entrance requirements.*

		Mathematics.	Engineering.	History.	Science.	Drawing.	Latin.	Greek.	Foreign languages.	Free electricity.	Total.
For all departments	Old	8	9	3	5	1	12	6	----	----	44
	New	8	9	3	3	0	9	6	----	----	38
For all but Greek	Old	8	9	3	5	1	12	0	----	----	38
	New	8	9	3	3	0	9	0	----	4	36
For all but classics	Old	8	9	3	5	1	12	0	----	----	38
	New	8	9	3	3	0	0	0	9	4	36
For literature and arts	Old	7	9	3	[1] 5	0	12	[2] 6	----	----	36–37
	New	7	9	3	3	0	0	0	9	5	36
For science and engineering	Old	8	6	3	5	1	0	0	3	----	26
	New	8	9	3	3	0	0	0	6	7	36
For agriculture	Old	8	6	3	5	0	0	0	0	----	22
	New	7	9	3	3	0	0	0	0	14	36

[1] Or Greek 6. [2] Or science 5.

TABLE III.—*Free electives.*

Subjects.	Credits.	Subjects.	Credits.
Geometry	1	Physiology	1- 3
Astronomy	1 -1.5	Manual training	1- 2
Chemistry	2 -3	Drawing	1- 3
Physics	3	Civics	1- 3
Physiography	1.5-3	History	3
Geology	2 -3	Latin	3-12
Botany	1.5-3	Greek	3- 7
Zoology	1.5-3	French	3- 9
Biology	3 -6	German	3- 9

You will be surprised, perhaps, after what I have said about our proposed elective system of requirements, to see by my Table I that 19 or 20 of the 36 high-school credits necessary to entrance here must be made from subjects unconditionally required, leaving only 16 or 17 credits to be earned from subjects elective in any degree. These required subjects are, however, all, or nearly all, those which are always expected, and almost always taught, in every good high school. The credits required are 9 in English (including both literature and composition), 3 in history, and 7 or 8 in algebra and geometry.

The restricted electives, on the other hand, vary in amount in the different colleges and departments from 3 credits in agriculture, in Latin, and in Greek, to 12 in literature and arts at large. They are all scientific and linguistic—3 of the former in each college and department, and 0, 6, or 9 of the latter.

The actual range of the free electives and the maximum and minimum amounts which may be offered in each may be seen by Table III. These free electives, which were unknown under our old admission system, vary now in number for the different colleges—as you will see by Table I—from 14 for agricultural courses to 5 for literature and arts. The total number of electives of both classes is, however, fairly uniform; 16 for science and engineering and 17 for agriculture, and for all of literature and arts excepting Latin and Greek, which departments are distinguished from all others in the university by a much larger unconditioned requirement and a correspondingly smaller elective list. Even in these departments, however, a considerable change has been made toward more liberal conditions, the Latin courses now requiring unconditionally 28 credits where they before required 34, and the courses in Greek requiring 25 credits in place of 36.

One leading original motive which led our faculty to consider anew the subject of entrance conditions was a desire to equalize and harmonize the requirements for entrance into the various colleges and departments of the university, and thus incidentally to equalize the value of the bachelor's degrees. The measure of success which we have had in this effort is shown by the column of "total credits" in Table I. Where formerly 22 credits would admit to the college of agriculture, 25 to that of science, 26 to that of engineering, and 36 or 37 to that of literature and arts—the latter number if university Greek was desired—36 credits are now required for each college and department, and no more than that for any, again excepting literature and arts with Greek, which still requires 37.

I think you will be pleased to see that this equalization has been accomplished by leveling up at all the lower points and not anywhere by leveling down, the standard of the university as a whole having been thus very materially raised. The requirement for the agricultural college, for example, has been increased not less than 63½ per cent, that for the college of science 44 per cent, and that for engineering 38½ per cent, while that for literature and arts remains unchanged. And this increase for the technical and scientific courses has not been made, as you will observe, by increasing the unconditioned requirements, which remain for these courses essentially as before, but by enlarging the elective list. The university standard has thus been raised without putting any considerable additional burden or strain on the public high school.

If you inquire how it came to pass that our standards were unequal before, I can only say that the entrance requirements have hitherto been fixed for the colleges separately, each asking from the high school whatever it could get which it regarded as definitely preparatory to its own college work; and organized and taught as the high school is, the literary departments could find much more such work in the high-school course than could those departments which rest immediately on a scientific rather than a linguistic preparation. In short, the floor sills of the technical and scientific departments of the university have sagged, as one may say, because the foundation under them was too low and slight; and they have now been hoisted up to the common level by using as additional props any good high-school timber that came to hand.

From the column of total credits in Table II we derive the fact that a three years' school can now, if it will, prepare for every department of the university, excepting only Greek. To enter for Greek also necessitates the presentation of 38 high-school credits instead of the 36 possible to a three years' school.

From the second line of Table II we see that to enter its students for any and all departments of the university unconditionally, a school must teach 8 terms of algebra and geometry, 9 of English (including composition), 3 of history, 3 of phys-

ical or biological science, 9 of Latin, and 6 of Greek—an amount impracticable, as already said, to a three years' school, but leaving for a four years' school 10 terms of work in subjects not required, and hence to be distributed at will.

I hope that no one will infer from the foregoing that this list of subjects and the number of credits in each is to be taken as indicative of the university ideal of a good high-school course for an Illinois community. Certainly few, if any, of us would say that the Illinois high-school boy should have as much Latin and Greek as history, science, and English combined, or that all his science work should amount to only half his Greek or one-third his Latin, or that he should do 15 terms' work in classics and none at all in German or French. The list just given is, in fact, made up not of matter deliberately chosen to make a course, but of the unconditioned requirements of all the various university colleges and departments combined; and those subjects preponderate, consequently, in preparation for which the least election is allowed. It may even be regarded, I think, as at least an open question whether any three years' school with a single course should attempt to prepare for all university work excepting Greek, since, as shown by the fourth line of Table II, this would require that it should teach 8 terms of mathematics, 9 of English, 3 of history, 3 of science, and 9 of Latin, leaving but 4 credits for studies elective in any sense—a number which must often prove too small to adapt the course to the more general ends of the school. If German be desired, for instance, only one year of it can be had, a single credit being then left for additional science or history. Such a three years' school may, however, it would seem, prepare fairly well for all except the classical work, since the 9 foreign-language credits may then be placed as desired, and 4 free electives will remain with which to raise the year of science work to 2, with a single credit still to spare.

If I were to summarize this matter according to my personal judgment in the premises, I should say that a three years' one-course school can not prepare for all the university courses, including Greek; that such a school can prepare for all excepting Greek, but commonly should not, since so to do would overload its courses on the language side and leave its science work extremely slight; but that it may very easily prepare for the three scientific colleges and can prepare at least fairly well for all university work except the classical. Or, putting the matter a little differently, a four years' school may meet all the university admission requirements and have 10 free elective credits left; but a three years' school should not attempt to prepare for Greek, and should make its choice, we will say, between a Latin-language course and a modern-language course, not attempting to cover both. The first of these, the Latin course, would prepare for all but Greek, but would be deficient on the scientific side at least; and the second, more liberal, or modern-language course, would prepare for all university work except the classical.

I must not omit to notice that preparation for the colleges of engineering and science now requires three years of English instead of two, as before, and two years of modern language instead of one. By a slight modification of the entrance requirement for the college of agriculture, however, it is now possible for a student to matriculate in the university without any foreign-language work at all, his entrance in that case being conditioned only by a requirement that he shall take French or German in his college course if a candidate for a degree.

Table III has been prepared merely to show the wide range of subjects and of credits in each which will be accepted as free electives in preparation for any university course whatsoever. We have consciously excluded only bookkeeping from this list of subjects usually taught in public high schools, and have fixed in all cases the minimum credit accepted at the lowest amount which it seems to us would have an appreciable value as a preparation for college work.

One useful result of the establishment of this open elective list of studies available in preparation for any college course will be to give to each collegiate department an immediate interest in the kind of work done in every study in the high-school course. If astronomy and biology may be offered as part of the preparation for Greek, and if Greek and civics may be offered as part of the preparation for biology, then the faculty Grecian and the faculty biologist each must hope that even these parts may be thorough and sound. We have now, in fact, the vertical piles and pillars of our preparatory foundation firmly bound and locked together by a veritable network of cross and diagonal braces running from every point of support to every point supported. What is a pillar for one is a brace for another, and weakness in any part affects the stability of the whole; that is to say, by leaving the high school as free as possible to do its own work for its own primary ends we have really strengthened it greatly as a university foundation, and have at the same time enlarged and unified the university interest in the whole of it and in every part.

Doubtless to more than one it has occurred to inquire whether the system here described and discussed is to be accepted as a finality, and doubtless to some at least the answer must have occurred that this can not possibly be. In the first place, it must be admitted that the several exceptions to the general principle and modifications of the main idea give to the new scheme something the aspect of a compromise between somewhat divergent views and partially inharmonious interests, and such compromises are rarely altogether stable; and in the second place, the whole is confessedly a means of adjustment between a developing university and a system of public schools as yet clearly incomplete. What we hope and believe is that we have here a means to a close but flexible articulation of the university and public high school, such that both may henceforth grow and develop together as interdependent parts of a unitary whole, each shaping the other, and at the same time yielding itself to the other's shaping. Then the university requirements will be advanced only as the average high school can normally and permanently improve its courses and its work; and these can be so improved only as the educational ideals and the financial resources of the average Illinois community may be improved upon.

When every county has at least one good high school and every high school has its four years' course; when the nature side of the high-school work is as full and strong as the language side; when a language is not revered by any of our teachers merely because it is relatively old, nor discredited by any because it is relatively new; when every American child receives the full benefit of his birthright as an heir to the current use and accumulated treasure of the English tongue; when, in short, the public high school has been thoroughly liberalized and modernized and rationalized, and hence unified throughout the State, then the entrance requirements to the University of Illinois will doubtless be materially different from those now proposed; but in the meantime we have here a working scheme, I hope, which, by hitching the horse and the cart together—whichever of the two you may call the horse and whichever the cart—may insure at once the efficiency of the horse and the forward movement of the cart.

X.—The Brookline Education Society and its Work.[1]

The Brookline Education Society was organized May 8, 1895. Its general character, aims, and methods may be gathered to some extent from the provisions of its constitution, which is as follows:

CONSTITUTION.

The Brookline Education Society is established to promote a broader knowledge of the science of education, a better understanding of methods now employed, and a closer sympathy and cooperation between the home and the school.

Officers.—The society shall elect by ballot, at the regular meeting in April, a president; a secretary, who shall also act as treasurer; and five other persons who, with the president and secretary, shall constitute an executive committee.

The president shall preside at the meetings of the society and of the executive committee.

The secretary shall keep a record of the proceedings of the society and of the executive committee; shall issue notices of all meetings; shall notify members of their election, and shall conduct the correspondence of the society. The secretary shall also be the custodian of the funds of the society, use them under the direction of the executive committee, and render an account of the same at the regular meeting in April.

The executive committee shall present for election to membership in the society such names as their judgment may determine, shall prepare programmes for all meetings, and shall have general charge and management of the business and affairs of the society.

Members.—Any persons of the age of 20 years, desiring to join the society, and sympathizing with its objects, may become members by signing the constitution, if nominated by the executive committee and elected at any meeting by a majority of the members present. Every member shall pay an annual fee of one dollar. The secretary shall send to all persons who are chosen members a notice of their election, with a copy of the constitution, calling attention to the provision for an annual fee.

Meetings.—Regular meetings of the society shall be held on the second Tuesday of October, December, February, and April. Special meetings may be called by the president whenever he shall deem it expedient. At all meetings of the society, after papers or addresses have been presented there shall be opportunity for free discussion of the same.

Standing committees.—The executive committee shall appoint the following standing committees: (1) Committee of not less than five persons on child study; (2) committee of not less than three on lectures; (3) committee of not less than five on art; (4) committee of not less than five on music; (5) committee of not less than six on science; (6) committee of not less than ten on physical training; (7) committee of not less than seven on school libraries; (8) committee of not less than five on history; (9) committee of three appointed by executive committee—from their own number—to act as finance committee, whose duties it shall be to obtain funds for the society and to act with reference thereto under direction of the executive committee.

Vacancies.—Any committee may fill vacancies in its number which occur after the annual meeting.

Amendments.—This constitution may be amended at any meeting of the society by a vote of two-thirds of the number present, if the proposed amendment has been stated in the notice of the meeting.

Quorum.—At all meetings of the society a quorum shall consist of 20 members.

Organization for 1897-98: President, Rev. William H. Lyon, D. D.; secretary and treasurer, Mrs. Alice N. George; additional members of the executive committee, Rev. Daniel Dulany Addison, Mr. Samuel T. Dutton (city school superintendent),[2] Mrs. Charles W. Kellogg, Mrs. Frederick S. Mead, and Mr. William H. Lincoln.

A statement of the meetings, lectures, committee work, etc., compiled mainly from the Third Yearbook of the society (1897-98), will serve to show the direction of its activities during the year, and in some measure the results attained.

MEETINGS AND LECTURES.

Meeting of October 19.—Subject, "Local history." Addresses by Rev. Edward Everett Hale, D. D., Mr. Osborne Howes, Principal Daniel S. Sanford, of the high school, and Miss Annie B. Tomlinson.

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[1] See also an account of the Public Education Association of Philadelphia, in the Rep. Comr. Education, 1894-95, vol. 2, pp. 1325-1326.

[2] The formation of the society is largely due to Superintendent Dutton's initiative.

Meeting of December 14.—Subject, "What should college do for our girls?" Such well-known experts in their lines of educational work as Dean Agnes Irwin, of Radcliffe College; Prof. Mary A. Jordan, of Smith College; Dr. Mary Webster, professor of philology at Wellesley College, and Prof. William T. Sedgwick, of the Institute of Technology, delivered addresses.

Meeting of February 8.—Subject, "Physical training in Brookline schools." The upper town hall was crowded with the members of the education society and parents and friends of the Brookline school children, the occasion being an open meeting under the direction of the committee on physical training of the society, with illustrations of games and gymnastics used in the public schools, all given by pupils of the various schools under the direction of their instructors. The exercises in general were examples of nearly every kind of exercise taught in the Brookline schools. The work of the higher grades was more finished than the simple games of the younger children. But the primary department romped with such vigor and with such vim that they captivated everyone present. The various drills and exercises by the girls of the high school attracted much attention, the marching calisthenics and æsthetic work being very pretty and very graceful. The programme was as follows:

1. Dumb-bells.....High-school girls, fourth class
2. Children's games.....Primary grades, Pierce School
   - *a.* Bean-bag race.....Second grade
   - *b.* Running jump.
   - *c.* Cat and rat.
   - *d.* Dodge ball.....Third grade
3. Swedish Day's order and game.....Fifth grade, Lincoln School
4. Vaulting, jumping, and balance beam.....Girls, high school
5. Fancy work with music.....Sixth grade, Lawrence School
6. Fancy step and wands.....Girls, high school
7. Land drill for swimming; push ball.....High-school boys, fourth class
8. Marching calisthenics and æsthetic work.....Upper-class girls, high school
9. Bean bags and games:
   - *a.* Three deep.
   - *b.* Fox and geese.
   - *c.* Teacher ball.
   - *d.* Jump the shot.
10. Swedish Day's order.....Ninth grade, Pierce School
11. Basket ball.....High-school girls

Meeting of March 22.—Subject: "The responsibility of the parent in the education of the child." Addresses by President Lyon, Rev. Reuen Thomas, and others.

Annual business meeting, April 25, 1898.—The membership rolls had upon them 572 names. The total expenditures for the year amounted to $589.

FROM REPORT OF THE COMMITTEE ON CHILD STUDY.

Child study demands a uniform and intelligent treatment of the child, and the most feasible method of accomplishing this thus far has been in the holding of mothers' meetings, where mothers are aroused, not only to a sense of their own responsibility in this matter, but to a sense of the necessity for every mother studying the problem of motherhood. At such meetings, teacher and mother can together discuss subjects of vital importance to the child. In this, so general a report, we may not give any detailed account of these meetings.

The mothers have met in the afternoon at the various school buildings; the special need of the mothers in each district determining the line of work. In

the Cabot School meetings have been held, giving the mothers an opportunity to know something of the methods in the primary grade. Talks were also given on "Home reading" and "The parents' responsibility to the school."

The mothers, while not largely attending these conferences, have shown an increased interest in the school by more frequent visits to the schoolroom and by starting an art fund for decorating the walls of the building. Sufficient money has already been collected to provide the building with a goodly number of pictures and casts.

In its work among the mothers the committee has come to feel, more strongly than ever, the necessity of giving our girls more of the training which shall fit them for home makers.

One mothers' meeting was held at the high school, when this subject was brought most forcibly to the mind of every mother present by a practical talk on the "Place of domestic science in the girl's education," by Mrs. Alice Freeman Palmer.

The meetings, commenced last year in the Winthrop and Sewall schools, have been continued in the same line of work. In each of these districts a course of cooking lectures has been given, showing simply and practically what kinds of food are the most nutritious for the child and the mode and cost of preparation.

However good our schools may be, what sort of development can we expect from children fed upon tea and the product of the bake shops. At four and five years of age we find inveterate tea drinkers, tea forming a large part of the breakfast and an essential portion of the other meals of the day. He who discovers the relation of the tea-drinking habit to many evils existing among our people has opened up a field that can not lightly be passed by.

Other talks have been given upon "Play," "Sickness," "Care of sick," "Proper clothing," etc. It has been the aim of the committee in all its work among the mothers, whenever an evil was found to exist, not only to point out its danger, but to show a means of correcting it practical to the mother's condition in life.

The interest and appreciation of the mothers attending these conferences has been maintained to the last. Many a mother, absent from a meeting on account of work, tells us of a visit to a neighbor to find out what was said. These mothers are eager for knowledge and responsive to suggestions.

The teachers who have so cordially cooperated, as a result of these meetings, tell of another spirit in the school, an occasional visit from a parent, a more willing response from the home in whatever they may wish to undertake.

These bands of mothers, meeting together once a month—without sectarianism, without caste, without fees; united in the sacred bond of motherhood, in a desire to do the best for their children—is a leaven to any community.

FROM REPORT OF THE LECTURE COMMITTEE.

The committee determined to try the experiment of a course of lectures to be given for the most part by residents of the town, for whose services no charge would be made. The lectures were to be given in the hall of the William H. Lincoln School, on Boylston street, in a thickly settled part of the town, where it was hoped there might be a good attendance; and the tickets were fixed at a nominal rate, in the hope of still further increasing the attendance. The committee regards the result of the experiment on the whole as being satisfactory, although in some cases the attendance was not so large as was anticipated, the average being from one hundred and fifty to two hundred, while in one case it exceeded three hundred. The subjects of the lectures were as follows: "Commerce;" "The water supply of some foreign cities;" "Picturesque Scotland;"

"Alfred Tennyson;" "What the workingman really wants;" "Impressions from a trip abroad;" "Evolution of the dynamo;" "Some points of law in common life;" "The art of Egypt and Greece;" "The consular service;" "The modern newspaper;" "Francis Parkman."

The financial results are shown by the following statement from Mr. Dutton:

Amount received from sale of tickets		$131.65
Expended	$56.25	
Cash deposited in Brookline National Bank	75.40	
		131.65

A suggestion has been made in the committee that it may be well another year to enlarge the influence of the society and the interest in these lectures by having a number of courses in different parts of the town, on topics which will be educational in their nature, and thus reach a larger number of people than can be reached by limiting the work to any one locality.

FROM REPORT OF THE ART COMMITTEE.

It has been a matter of regret that for various reasons the committee could not arrange during the past winter for another exhibition of works of art. The loan exhibition of last year was so successful in its influence, particularly on the minds of the young people of the town, that it is evident similar exhibitions—even though not on so extensive a scale—will be of value in the future.

An important addition to the resources of the high school, in the direction of art education, was made through the efforts of Miss Weir last summer, who, during a visit to Europe, succeeded in gathering and classi ying about 650 beautiful photographs of cathedrals, details of exquisite carvings, mosaics, Greek vases, mediæval ornaments, famous paintings, and frescoes. This collection is so arranged that different portions can be loaned to the schools of the town in the same way that books are loaned from a library.

We must never lose sight of the fact that the early impressions are the most lasting and the ones most easily influenced for good. We believe in art training for children, that they should be brought into contact with good pictures in order that their minds may be turned into the best channels.

The art committee of the Brookline Education Society have come to the conclusion that the legitimate field for their useful work in the future lies in the public schools. Some of these already bear abundant proof of the excellent and devoted work accomplished in this direction. The high school, the Longwood School, and the Edward Devotion School have been appropriately and generously supplied with pictures, and entirely outside of the school committee and the public appropriations. The school committee, while extending sympathetic encouragement toward any art work that may be undertaken, have wisely concluded that the decoration of the schools with works of art had best be undertaken by private enterprise.

In looking about for a school upon which to begin with some systematic art treatment, the committee have selected the Heath School. Although situated in the richest part of Brookline, this school is sadly lacking in many attractive features. With a moderate expenditure, say $200, we find that valuable educational art features can be introduced. The committee have already formulated plans, and when these are completed they will begin the task of raising the money to carry them into effect.

FROM REPORT OF THE MUSIC COMMITTEE.

The work actual or proposed for the year 1897-98 has been along several definite lines, as follows:

1. Weekly half hour of music in the schools.
2. Young people's concerts.
3. The organ recitals.
4. Band concerts on public common.
5. People's singing classes.

Weekly half hour of music in the schools.—Both through observation of the children and through testimony from the teachers, the members of the committee in special charge of this work have had proof of its value. Until recently the performers, who gave their services, were all ladies; but at the suggestion and with the aid of Mr. Cole of the committee, several gentlemen have been asked to sing to the pupils, with the wished-for result of arousing marked interest in the boys, who are apt to be more indifferent to musical effort and instruction than the girls. In this connection the purchase of two new pianos for the Devotion and Heath street schools is mentioned with pleasure, for the poor quality of the pianos in the schools is very noticeable.

Young people's concerts.—These concerts have not yielded so encouraging a result as had been hoped. At the first concert, given at 12.30 o'clock, the hall was filled, but at the other concerts, coming at 3.30 o'clock, the audiences were smaller, owing somewhat, undoubtedly, to the fact that a large proportion of the high-school pupils live at a distance from the schools, making it difficult for them to return in the afternoon. The concerts were devoted to—

I. A review of the concerts of 1897:
   a. Bach and Handel.
   b. Hayden and Mozart.
   c. Beethoven.
   d. Schubert.
II. Mendelssohn.
III. Chopin.
IV. Schumann.

They consisted of piano music and songs, with a short historical and biographical account of the composer and a few words explanatory of each musical number on the programme.

The organ recitals.—The committee essayed a new line of work in the free organ recitals, with such a gratifying result that a more extended series of this kind will undoubtedly be arranged for another winter. Two recitals were given, one at the Harvard Church and the other at the First Church. At both recitals practically all the seats were filled, there being not less than 1,700 people present on the two occasions. The audiences gave every evidence of appreciation and pleasure in the music. These recitals and the unmistakable popular interest in them have suggested to the committee the pleasure and advantage to the community if a good pipe organ were placed in Shailer Hall or in the town hall. In English town halls there is very generally an organ, the possession of which encourages the popular interest in music, the creation and perpetuation of local musical organizations, and the giving of concerts and other musical entertainments.

Open air band concerts.—The committee proposes to arrange for a series of band concerts in July and August similar to the very successful concerts of last summer. These concerts were made possible by the private subscription of a comparatively small number of citizens, and the committee wishes to urge upon the community the propriety and desirability of a more general support of them this year.

People's singing classes.—The committee has watched with interest the progress of the people's singing classes started in Boston recently, as this is a work that the committee took some steps toward inaugurating two years ago.

Music in the schools.—The committee wishes to call attention to the excellent work in music (singing) of the pupils of the primary and grammar schools, and also to the high-school orchestra, the study and work of which is done out of school hours, and not in connection with the school curriculum. The committee would be glad to see established in the high school an elective course in musical history and interpretation. There might be some question whether such a course should be supported from the public purse or through generous private endowment, but it is the opinion of the committee that it would be very desirable to have more attention given to music in the high school. At present the amount of time and money expended is small, and consequently meager results are produced.

FROM REPORT OF SCIENCE COMMITTEE.

A school index to the bound volumes of the Scientific American Supplement from 1876 to date, embracing the titles of somewhat over 1,000 interesting and valuable articles upon applied science, including only such papers as are especially adapted to the use of pupils and teachers of our public schools, is now in the hands of the publishers; a classified index to the electrical literature of our public library, with a brief outline of a course of reading on the subject of applied electricity for those interested in such matters; a list of references, for eighth grade in physics, already in the hands of the teachers; a most effective lecture upon "The protection of our birds," given under the auspices of this committee, before the pupils of the high school, by Mrs. Hornbrook, of Newton; and a vigorous attempt, not yet abandoned, to produce a relief map of Brookline, constitutes the sum total of our labors.

REPORT OF THE PHYSICAL TRAINING COMMITTEE.

The committee on physical training began the season with the intention of supplying some (as many as the funds to be collected would allow of) of the schools with apparatus to encourage the playing of the children at recess, and, if need be, of instructing them in the use of the apparatus. The object of this was to get a great number of children to take healthful exercise at the time apportioned for that purpose.

From the observations of this committee it would seem that the children lack direction as to how properly to use their recess. They are turned out of their rooms by the school regulations, but many of them, even when space is available, get none of the pleasurable, alertness-teaching, blood-circulating, health-giving exercises, which are the component parts of an interesting game of play.

The carrying out of this idea does not interfere with any of the school regulations, for the authorities make no attempt to govern the child at recess. In fact, after an explanation offered to a subcommittee of the school committee, their sanction was given to the plan and the hearty cooperation and advice of the director of physical training was also given us.

Your committee estimated that about $100 was needed in order to fairly try their scheme, and to raise this fund personal solicitations were made, and an appeal and explanation were put in the Brookline Chronicle early in January last. Only about $40 toward this fund of $100 has been collected, and not all of this has been expended, as it has been only recently received.

The game of basket ball is at present very popular. It is a game which both sexes may play, but is especially appropriate for the girls. Several outfits for this game have been provided. The committee is not yet ready to report upon the benefits of this plan.

On February 8, under the auspices of the society, this committee gave an

exhibition of the regular work in physical training which obtains in our schools. With the help of many of the teachers and nearly 200 of the scholars a series of exercises, tableaux vivants, representing the class work done in the different grades of the schools in physical training were successfully shown.

The clumsy, though unconscious, interested play of the primary children—kindergartners—the more complicated movements of the grammar grades, the gymnastic games and apparatus work, and, finally, the graceful, rhythmic drill of the high-school girls each had a squad to present them. Such exhibitions of what actually goes on in our schools can not fail to be appreciated by the parents of the scholars. When, in addition, this is helped out by a syllabus on the programme explaining the part of each exercise in developing the muscular symmetry of the body, the lesson to eye and understanding is one never to be forgotten, and it would seem an invaluable method of instructing present-day parents in present-day practices.

The committee have attempted no other work, but hope next year to report fully on their plan for recess play, for which funds are still needed.

REPORT OF SCHOOL LIBRARIES COMMITTEE.

The committee on school libraries have come to the conclusion that the most effective work which they can do, and that will be of the most lasting value, is to devise some thoroughly practical plan for bringing the schools and the public library into closer relations, the one with the other.

With this object in view, we propose that our school children be taught in a thorough and systematic way how to use a public library—such instruction to be followed by examination. Our intention is to bring the children from year to year during their school life constantly and naturally into touch, not only with good books, but more especially with such books as are best suited to their age and mental development, with such books as will really appeal to them and interest them, thus causing them to form the habit first of using a library; and second, of seeking the best that it affords. We may hope in this way to cultivate the taste, and to bring our children gradually to realize and appreciate the resources of such an institution. To this end we recommend that the town be asked to make a special appropriation to the trustees of the public library, of which a portion shall be used for the salary of a school librarian, a portion for the expense of fitting up and maintaining a room in the library building for the issue of books to school children, and for the exhibition of such books as may be from time to time especially set apart for the inspection of pupils, and the balance for the purchase of such books as the school committee shall recommend to the trustees of the public library. The school librarian shall be employed by the trustees of the library, and shall be under the general direction of the librarian.

The duties of the school librarian shall be: First, to have general charge of the schoolroom in the library building; second, to issue books to pupils and to exhibit such books as shall be especially set apart for their inspection; third, to instruct pupils in the method of cataloguing, in the use of reference books, to otherwise assist and advise pupils, and generally to reveal to the pupils the resources of the library; fourth, to come in contact with the teachers, learn the needs of the school and, with the assistance of the teachers, under the supervision of the librarian and of the superintendent of schools, to draw up lists of books to be submitted to the school committee with the recommendation that they be added to the library. On the principle of the traveling library, books especially adapted to throw light on certain subjects may be sent from the schoolroom in the library building to classes engaged in the study of such subjects.

We therefore recommend that for the first year the town be requested to make a special appropriation to the trustees of the public library of $2,000, $700 to be

expended for the salary of the school librarian, $300 for fitting up the schoolroom in the library building, and $1,000 for books to be bought by the trustees of the public library, at the suggestion of the school committee.

FROM REPORT OF THE HISTORY COMMITTEE.

The work of the history committee has been continued along the lines indicated in the last report. In addition to the large wall map prepared under its direction, a small outline desk map has been issued for use in the schools in connection with the guide published a year ago.

The committee feels that the time has come to devote its attention to some of the larger aspects of history. In writing what it is most profitable for a person to learn, John Ruskin declares that a man ought to know three things: First, where he is; second, where he is going; and third, what he had better do under the circumstances.

During the time this committee has been in existence it has had for its object the solution of the first of these problems, and has tried to see Brookline as it is and to learn what it has been during a not very remote past. It would now seem to be the duty of the history committee to try to discover whither we are going. This seems an impossibility; and yet, if we believe that history repeats itself, can we not find the general direction of our course by looking backward over the great field of universal history? The transition from local to general history need not be sudden or violent. As in ancient days all roads led to Rome, so in modern times all roads lead from the home out into the remote corners of this busy world. The Seven Hills of Rome may be found right here in Brookline, and the earliest settlers of the town find their prototypes in the Patricians of the little city on the Palatine.

The schools have received many benefits from the town through the school committee and at the hands of generous private citizens. There is, however, much to be done to render the department of history in the schools more efficient than it is at present, and the committee on history will offer several specific suggestions by means of which the study of history may be placed on a firm basis. Laboratories there are for science—zoology, botany, physics, chemistry, and the domestic branch of the work; but you will look in vain if you try to discover a laboratory for historical research in Brookline. By and by, when patience shall have had its perfect work, perhaps the dreams of the instructors in history will be realized. But even under present conditions much may be done. There are in the town several clubs devoted to study. By the members of these clubs, papers are read, bibliographies are prepared, pictures and maps are collected. But why should not these clubs be given a wider field of usefulness? And, on the other hand, would not the clubs be glad to avail themselves of the resources which the schools could furnish? For instance, several of the schools now own stereopticons; one of these could be placed at the service of a club wishing to illustrate a subject graphically. The club would, perhaps, buy some lantern slides, which would in their turn be placed at the service of the schools. Is there not in this idea a chance for wide usefulness, and at the same time economy of effort and of substance? Again, the subjects of the papers read in the clubs are often the same as those which are being studied in the schools. Here is another opportunity for cooperation.

It has been the good fortune of pupils in the high school to listen to two papers written and read by members of the Thursday Club, one on "Greek life as shown in the poems of Homer;" the other on "Scottish life and character as seen in the literature of Scotland." The interest and enthusiasm which these lectures excited prove that they meet a want, that of merging the life of the school in the great community life of the world to which it belongs.

Maps, pictures, books, models, like those of the Parthenon and the Acropolis at

the art museum, are indispensable to the proper study of history, which must, of course, include the kindred subjects—art, literature, sociology, and political economy. Pictures illustrating different events in history are often to be found in the periodicals of the day. These would prove welcome gifts in many schoolrooms. There is a series of historical plates illustrating different phases of life in ancient and mediæval times which the schools ought to own, because seeing goes a long way toward believing and realizing a past in which, at first, the child feels that he has no share.

Every school should have a good working historical library, and every schoolroom should possess a small library of its own to which reference could be made without loss of time. The map habit is one that should be cultivated very early in a child's education. Maps on a plane surface, globes, and relief maps are the necessary accompaniments of general reading.

It must be understood that all these aids and appliances are the common property of those who need them. Culture for its own sake is valueless; culture for service is the dearest possession of the enlightened man of to-day.

XI.—OUR SCHOOL WORK.

[From an address delivered by Superintendent Edwin P. Seaver to the teachers of the primary and grammar schools of Boston, November 12, 1897.]

* * * For one, I am not ready to admit there is not a science of education. Nor am I ready, with the writer of an article in a recent number of the Atlantic Monthly, to throw aside all the psychology hitherto known as being antiquated rubbish handed down to us from mediæval scholasticism and to wait in suspense until a whole new foundation for educational science shall have been built by the physiological psychologists. Undoubtedly we may expect valuable contributions to our pedagogical knowledge from the psychological laboratory, but the older introspective psychology has given us much that we are not yet ready to throw away. We may even admit that the mediæval scholastics had some good knowledge of the human mind, puerile and empty as were many of their speculations and disputations.

But the true basis of educational science is found in neither of these remote regions—neither in mediæval scholasticism nor yet in the psychological laboratory; it is found in the familiar psychic history of childhood and adolescence, more especially in that part of it which records and discusses the phenomena of the growing mind while undergoing the processes of instruction. This is no new science; but its true relation to general psychology has been very properly emphasized lately by bestowing on it a new name—child study. For the study of this psychology of childhood and adolescence, each of us has a laboratory well filled with specimens—many of them very live specimens—no two of which are exactly alike, while some are quite abnormal, but all interesting. Here we test our principles, extend our observations, and occasionally, perhaps, make a new discovery. In this way we learn all we really know of educational science. The principles of education imparted to us at a normal school or acquired by reading have for us no validity or significance until we have applied them to the practical exigencies of the schoolroom. For in education, as in other matters, the science and the art go hand in hand, and are indeed so intimately connected that neither is valuable without the other. The mere theorist, unacquainted with practice, and the mere practitioner, ignorant of theoretical principles, are alike incompetent to do good educational work.

Coming now to the particulars of our school work, let us consider, first, what

our established course of study requires of us in the use of school time. The general purpose of a course of study is twofold: First, to enumerate the matters to which attention may be given grade by grade in the schools; and secondly, to apportion the school time among these various matters. In a large system of schools an established course of study with a uniform apportionment of school time is an admitted necessity; and a faithful observance of its requirements is the best way of making satisfactory progress under it. The matters contained in the present course of study or the apportionment of time among them may not, in your opinion or in mine, be the best conceivable. Arithmetic, or drawing, or grammar, or manual training, or any other branch, may have more or less time than its relative importance, in our judgment, warrants. If so, we have interesting matter for discussion, and possible improvements to suggest. Discussion of proposed improvements is always helpful. But until the existing courses shall have been changed by the proper authority, you and I are bound to obey their requirements.

One good reason for insisting on a strict observance of the time apportionment in a course of study is the need of preventing favorite studies from robbing the others of their due share of time and attention. There have been times in the history of our schools when this kind of robbery went on more freely than it does now. For example, drawing, years ago, was the favorite study in many schools. * * *

Perhaps there is hardly a branch of study in the whole course which does not at times betray predatory tendencies that need to be restrained. And the duty of applying the proper restraint falls on each individual teacher. It is not merely a matter of supervision, nor does it pertain only to a master's management of his school; it is and must be, under our free system of administration, an element in the daily work of every teacher.

Every teacher ought to work by a daily time-table. If carefully prepared by the teacher who is to use it and strictly followed, it is an effectual economizer of time. It prevents waste and compels prudence in the use of school hours. "There are more matters in the course of study than I can find time to attend to," I hear some teacher say. "Let me see your daily time-table," I ask. "Oh, I can not tie myself down to a time-table; I must be free to teach as the spirit moves; I have no time-table." "Well," I remark, "you are probably a spendthrift of your time, and your difficulty in finding time for all the things you are required to teach is like the difficulty experienced by another class of spendthrifts in meeting their obligations." Redeem all time from waste by using a daily time-table, and there will be time enough for all matters set down in the course of study. And the time-table will make your work more systematic, more concentrated and effective. All observers of teachers' work will agree that the teachers who do the most work, with the best results, and the most easily withal, are those who plan their daily work beforehand, make a careful appropriation of time, and then adhere steadily to their scheme. They have time enough for everything by attending to everything in its time. It is because the use of daily time-tables makes each teacher personally more effective that my appeal is made primarily to you as individuals. But the whole school is made more effective in the same way. It is therefore a matter of wise management for the principal of a school to see that all the teachers are using their school hours without waste and in accordance with the general appropriation of time made in the established course of study.

And here I will turn aside for a moment to say a few words on the nature and extent of the authority vested in the principal of a school or district. The need of a right understanding on this point has more than once been brought to my attention by unfortunate difficulties that seem to arise out of a misconception of the proper relations between the principal and the assistant teachers of a school.

Broadly speaking, the authority of a principal in his school is absolute. It is like that of a captain aboard ship, or that of a military leader in campaign. His orders must be obeyed promptly and fully; his plans are to be executed loyally and faithfully, no matter whether the assistants think them wise or unwise, agreeable or disagreeable, just or unjust. There is no other theory upon which a school can be managed successfully. "But must I submit," I have sometimes been asked, "when the orders I receive from my principal are clearly unwise or disagreeable, or even unjust? Is there no remedy for such wrongs?" Yes; there is a remedy for every wrong. If an assistant teacher feels aggrieved by the duties put upon her by the principal, there lies an appeal to superior authority. But before an appeal can be taken there must be obedience on the part of the appellant. First obey, and then appeal. The common mistake is to refuse obedience and then to appeal to higher authority for support. But the ears of higher authority are closed—ought to be closed—to one who is in the attitude of disobedience. Listening to disobedient appellants would soon bring on a state of anarchy. Moreover, a grievance can not be said to have arisen until the alleged unwise or unjust order has been obeyed; and even then the question whether the order was in fact unwise or unjust must be considered an open one, which the authority appealed to will not decide without hearing both parties. Disobedience, therefore, implies a premature decision of the very question at issue by one of the parties, and an appeal under such circumstances amounts to no more than a demand to be sustained in insubordination.

But a wise captain advises with his officers, and the ablest general would not dispense with councils of war. So will the wise and able principal of a school hold consultations with his assistant teachers. Teachers' meetings presided over by him have for their purpose the free discussion of all matters pertaining to the conduct of school business. No principal was ever so wise that he could gain no useful suggestions from meetings of this kind; no corps of teachers was ever so strong but that the mutual good understanding and sympathy arising from free interchange of experiences and opinions would make it stronger. Therefore should discussion in teachers' meetings proceed until all possible good has accrued therefrom. But at last the time comes when discussion must cease and action begin. Then orders must be given and obeyed. Then no longer can subordinates stand out on their differences of opinion with the chief. He has considered these, given his directions, and has the right to expect prompt and full obedience. A member of a certain executive board was once observed to be carrying on efficiently a course of action not in accord with his well-known opinions and votes in the board. On being asked why he did so, he replied, "I vote as I think, but I do as I am told." So I would advise all teachers to speak as they think on all proper occasions, but to do as they are told, and do so cheerfully and efficiently. This is the true principle on which to reconcile a free expression of opinion, which is wholesome, with due respect for authority, which is necessary. * * *

Formerly our reading in school was confined to the school reading books. Now we make large use of "supplementary reading," partly for the purpose of gathering information and partly for the purpose of making pupils acquainted with literary compositions as wholes, and not through extracts. More important, however, than either of these excellent purposes is the expression of thought and sentiment by oral reading. Perhaps oral reading receives less attention now than formerly. If so, there is need of a reform. We should restore oral reading to all the prominence it ever had, believing that it makes more both for culture and for growth than any other single school exercise. The older the children the more marked is their improvement through oral reading rightly taught. * * *

A word may be fitly spoken here about the reading matter used in the primary schools. There seems to be a tendency in many quarters to make an inordinate

use of the primer for the production of a high degree of mechanical facility in reading easy matter. When first-grade children have read through one primer the teacher gives them another primer, then another, and another, and another. One teacher I heard of who boasted of having read eight primers with her class.

Now, the language of primers is wholly artificial. It is selected and put together, not for the thought expressed, but to meet, in an assumed best order of succession, certain difficulties of spelling and pronunciation. Hence, "*The fat cat that sat on the mat, The rat that ran from the cat*," and other equally thrilling stories. The whole training in the language of primers is a purely mechanical process, no doubt a necessary process for a while, but, nevertheless, unrelieved by a gleam of human interest, and to be got through with at the earliest time possible. Who of you can remember anything of the primer you read in school? Of my own primer I remember it had a yellow cover; it had a picture representing sunrise, highly conventionalized, with the legend, "The sun is up;" and it had another picture of a cat with arching back standing on top of a stone wall just out of reach of a dog that was striving in vain to reach her; but what tragic story may have been printed under this lively picture I am utterly unable to recall. On the other hand, I easily remember the pages, both picture and text, of the book from which I first read some fables of Æsop. These are real literature. For more than two thousand years they have interested children, as well as their elders. Therefore do I say, Let the children pass as early as possible out of the empty primer language into real literature. I pity children who are required by the mistaken zeal of their teachers to read eight primers, or four, or any more than are absolutely necessary to overcome the preliminary difficulties of reading; and I beg you all to let your children reach reading matter of enduring interest at the earliest time possible.

Under the head of writing, in the modern use of the term, is included the whole use of that art in the expression of thought in composition. The mere mechanical ability to produce fair manuscript is hardly of enough importance in itself to rank as one of the main parts of elementary instruction. The great amount of drill given for the sole purpose of producing fine penmanship takes much time that could be spent otherwise to greater advantage. The act of writing, as a school exercise, should usually have for its object the expression of thought. Neatness and legibility, though important, are incidental, and are quite as likely to be secured when so regarded as when made the sole purpose of the writing exercise. It would be well, I think, if pupils in grammar grades were seldom allowed to take the pen unless to write what they wished to express, or record what they wished to remember. Copy books I would not use, save occasionally for teaching the best forms of letters. Practice enough could be had by writing for preservation, in a commonplace book, matter worth the time spent upon it, as poems or fine prose extracts. We have in our city one grammar school in which no copy books have been used for many years past; and yet I doubt if its graduates could be distinguished from those of other schools by the inferior appearance of their manuscripts. Less uniformity in the mass and more individuality their manuscripts may indeed show; but these graduates carry to the high school each a handwriting which is his own, and which, for that reason, is less likely to be broken up by the influences of high-school work. And so I leave the copy-book question for your further consideration in this form: Can time be saved for better uses, and yet without material loss to penmanship, either by discarding copy books altogether or by very much restricting their use?

In the primary schools it may be a question how far it is wise to go in the effort to use writing for the expression of the pupil's original thought. Children sometimes display charming originality when by a happy arrangement of circumstances the teacher leads them to describe what they have themselves observed,

or to relate what they have done. But the teacher's effort to control circumstances often fails, and children supply the lack of observation and thought by a remembrance of mere words and phrases. The performance of a little boy, in whom I had a personal interest at the time, illustrated this point to my mind in a striking way. He was a pupil in a modern primary school, where the first steps of reading and of writing were taught simultaneously; and the writing was taught, not only as a mechanical art, but also for the supposed expression of thought. It occurred to me that I would test his acquired power in this respect; and I proposed that he write a letter to his great-grandmother, of whom the boy was very fond. I first taught him how to write the words "Dear Grandmother" and "Your affectionate grandson," at the beginning and at the end of his letter, supposing these words too difficult for him at his stage of advancement. His own name he could write. I then told him to write his letter and show it to me before sending it. This is what the little boy wrote:

"DEAR GRANDMOTHER: Can you run to the hill? I can run. Run, boy; run!"

There may have been a touch of original thought in the youngster's application of his familiar primer language to the case of his venerable relative, but it was rather unexpected. * * *

Let us turn now from school studies to school discipline. There are a few things that need to be said, and some questions which may repay your further investigation.

In the first place, I note with much pleasure one sure indication of improvement in our discipline. There is much less corporal punishment than there was a few years ago; and I hear that good order is even more prevalent. My statistics at the office show that reported cases of corporal punishment have diminished over one-half. In the primary schools they have diminished fully two-thirds; in the grammar schools nearly two-fifths. Now, if this movement could go on with some acceleration, it is possible that the schools of Boston might pass into the twentieth century practically free from corporal punishment. I doubt not that we are all agreed that such a consummation is devoutly to be wished. Is it not, then, worth working for?

I have called corporal punishment a means of school discipline; but I must at once qualify by assigning it the lowest rank among the means at the teacher's command. The aim of school discipline is not merely the outer one of good order in class room or yard, but much more the inner one of moral improvement in the scholars; it is right conduct from free choice, not from compulsion; it is the development of character toward good citizenship, through the formative influences of school life. Now, corporal punishment has about the same relation to the development of moral character in school children that the police force has to the moral elevation of a community. Both apply outward restraints to conduct; both secure obedience through fear of the consequences of disobedience; but neither seeks to touch the higher springs of action; neither is profitable for edification. The boy who gauges his conduct so as just to escape a whipping in school is likely enough to become the man whose moral sense will be satisfied by keeping himself out of jail. True moral culture seeks the development of character through systematic efforts to bring into habitual action the higher motives. It is at once the most essential and the most difficult part of the teacher's work. But in so far as this difficult work is done, do the occasions for the use of forcible means of discipline diminish and disappear. And it is because I feel sure that work of this kind in our schools is now supplanting corporal punishment that I hail the reported diminution of it as a welcome sign of improvement.

But I must not fail to point out some particulars in which still further improvement seems immediately possible. For this purpose let me ask your attention to some matters of record. Last summer I sent for the records of the corporal pun-

ishments that had been inflicted during the months of March and April, that I might learn the causes for which this form of punishment had been used. In two-thirds of these records the cause assigned was "disobedience" or "disorderly conduct." How flagrant these offenses might have been was not stated in most cases. But it would seem probable that in schools where boys are whipped for "tardiness," for "truancy," for "inattention," and for "neglect of work"—offenses which involve no branch of "good order"—the same punishment would likely enough be given for comparatively mild cases of "disobedience" and "disorderly conduct"—as, for example, disorder in the lines, or disturbance of the filing reported by the monitors.

It may be—indeed, I am strongly inclined to believe—that a closer observance of the spirit of our regulations, which require us to avoid corporal punishment "in all cases where good order can be preserved by milder measures," would result in a diminution of the corporal punishment scores for "disobedience" and "disorderly conduct." However this may be, our regulations can hardly be held to warrant the infliction of corporal punishment for the other causes already named—"tardiness." "truancy," "inattention," and "neglect of work;" nor for most of the rest mentioned in the reports—"leaving school without permission," "impudence," "use of bad language," "stealing," "ill-temper," "telling falsehoods," "bad behavior on the street," "destroying note sent to parents," and "untidiness." Is it for the correction of miscellaneous faults like these that the defenders of corporal punishment wish it retained in the schools? I think not. Let me quote, from the report of one very eminent defender of corporal punishment, language used by him thirty years ago, but still profitable to consider:

"There would be no good purpose accomplished," he says, "by concealing the fact that the prejudice which exists with regard to corporal punishment is due largely to its indiscriminate, unwise, and excessive use by some teachers. The constant infliction of it for trifling offenses, if not an abuse, is an unwise use of it, not only because it takes the place of those moral and ennobling influences that teach the pupil to govern himself, but because it destroys the principal power of this kind of punishment, which should be found, not in the infliction of bodily pain, but in the disgrace and shame associated with it."

"Nothing looks more suspicious," he says, further on in the same report, "than the constant occurrence of such reasons for corporal punishment as impertinence, inattention, disorder, restlessness, disturbance, playing, tardiness, not one of which, unless aggravated in its character, is worthy of it, but should be met by some other form of punishment. The kind, sympathetic teacher rarely reports impertinence as a cause for punishment, for it is generally the reflection in the pupil of anger, undeserved reproof, or bitter sarcasm on the part of the teacher. Children would be more than human to sit quietly under the taunts and jokes which we have known some teachers to indulge in. Inattention and restlessness too often originate in the teacher's lack of ability to make the studies interesting; disorder, disturbance, playing, in a want of that quiet power which makes itself constantly felt as a check upon the pupils, or, it may be, in a most foolish waste of power by attempting to enforce too strict discipline."

Earlier in the same report the writer had said:

"We feel that only in cases of gross impropriety, of willful, determined disobedience, and persistent defiance of the regulations or of the authority of the teacher, is corporal punishment justifiable."

This language, used by a defender of corporal punishment, has my hearty approval. My own position on the corporal punishment question ought to be well known, for this is not my first utterance upon the matter; but I have found myself extensively misrepresented. I am not in favor of taking away the right to use corporal punishment; but I am in favor of the teachers trying to reduce

the use of it to less than one-tenth of the present amount. Nine-tenths of it as now used I believe to be wholly unwise and unnecessary. * * *

Children's offenses against morality, their lies, their thefts, their oaths are not usually best treated with harshness and severity. Children are often more ignorant than wicked. They are not adults. They need enlightenment more than punishment. The elements of right and wrong in their conduct need to be pointed out and explained to them with a tender earnestness that should touch their better feelings and win them over from the wrong to the right. One child so persuaded should rejoice the teacher's heart more than ninety and nine children restrained from wrong conduct by the mere dread of punishment.

XII.—Address by Hon. Abram S. Hewitt, LL. D.,

At the Dedication of the New Site of Columbia University, New York City, May 2, 1896.

* * * This occasion has a significance which demands and justifies an explanation, familiar as it must necessarily be to the students of history and to the friends of education, but necessary in order to comprehend the genesis and the mission of the new university, destined to radiate its influence for good in all time to come from these buildings which we are here to dedicate to the service of God and man. Let it be remembered, however, that we are here not to dedicate buildings alone, but also to dedicate to the responsibilities and duties of advancing civilization the wealth, the energies, and the potentialities of the millions of men who will in the ages to come constitute the population gathered around this center of light and learning.

It is well that these ceremonies have been inaugurated by unfurling the national flag, which is the emblem of the sovereignty of the people. In every clime and under every form of government the flag represents the principle of loyalty to the constituted authority. Patriotism is not peculiar to any land nor to any people, but is the property of humanity wherever organized society exists. But with us the flag has a special significance. It represents not merely love of country, but something more. It is not only the ensign of the whole people, but it is the evidence of the liberty of the citizen, without which the Stars and Stripes would be for him but a badge of slavery. We are accustomed to speak of our Government as an "indestructible union of indestructible States," and in one sense this is a true definition, but in a larger spirit the Republic is rather to be regarded as an aggregation of units, every one of which is an independent citizen with equal rights and correlative duties.

But whence is the citizen to derive his knowledge of the nature of his rights, and how is he to rise to the full measure of the performance of his duties? Political knowledge is not a natural endowment. It is the growth of painful experience, and the outcome of training through ages of effort and sacrifice. The history of the world is the record of its acquisition. In its range are included the lessons of every age and every nation. Heroes and saints, statesmen and demagogues, tyrants and traitors, have alike made their contributions to its evolution. The silent masses of the people have suffered and died in order that humanity might at length achieve freedom. There is not a region on this great globe which has not made its mark upon the final record which we call civilization.

But among all the peoples of the world to none has the opportunity been so propitious for waging the conflict between right and wrong, for carrying on the struggle between ignorance and knowledge, as in this land of ours, which seems to have been reserved under the providence of God for settlement by men who

were dominated by a single idea, for which they were prepared to sacrifice home and comfort and wealth and all that men usually hold dear. The idea of personal liberty, which elsewhere was an abstraction, was made a reality in a new land, and the only land in which no aristocracy had ever existed and privilege was unknown. They were enthusiasts who came to a region where there were no prejudices to encounter, no abuses to overcome, no traditions to fetter the free spirit of man. While they claimed the right to worship God according to the dictates of conscience, they held this right always subordinated to the individual liberty of the citizen. In whatever else they may have differed among themselves or with their neighbors, civil liberty was never in question, and its rights were asserted whenever and wherever assailed by kings, governors, or parliaments. They regarded liberty as an end, and not as a means. "To secure it, to enjoy it, and to diffuse it was the main object of all their social arrangements and of all their political struggles. They held it to be the inalienable prerogative of man, which he had no right to barter away for himself, and still less for his children. It was a sacred deposit, and the love of it was the main instinct engraven in their hearts." These pioneers of freedom understood that without education liberty would perish from the land in which they had sought refuge. They were not numerous, but they were as prolific as they were earnest, self-reliant, and independent. It is estimated that the three millions who inhabited the British colonies which joined in the Revolution were descended from less than one hundred thousand immigrants, nearly all of whom could read and write, and some of whom were very learned men and statesmen of the highest order. They realized the value and necessity of education in order to preserve the liberty which they sought in a new world, and which they were prepared to defend at the peril of life and fortune. Hence they founded schools and colleges, even before they had acquired the primary comforts of civilization. Whatever else their children might lack, they were to be instructed in the knowledge of their political rights and their religious duties. Hence from the first religion and education were the inseparable guardians of liberty, equality, and property. These three primary elements of the social organization were never separated, and indeed never separable in the minds of the exceptional men who laid the foundations of the Republic upon the inalienable rights of man. They justly held that private property was the concrete expression of liberty, and that any interference with property was an attack upon individual liberty. They believed that all men had an equal right to acquire and hold property, but they recognized that this very equality of opportunity would necessarily involve inequalities of possession, due to capacity, thrift, and energy. Thus were developed communities of freemen, in which each man was master of himself, equal to every other man before the law, and recognizing no claim upon his property to which he had not assented as the price of the maintenance of order and the dispensation of justice.

While the love of liberty, and its dependence upon education were recognized in all of the thirteen colonies, Massachusetts founded Harvard College one hundred years, Connecticut founded Yale fifty years, and Virginia founded William and Mary sixty years before New York had made any provision for higher education. Her youth were thus forced (reluctantly, perhaps, but probably to their gain) to resort for education to these institutions, which were afterwards denounced by the enemies of freedom as "nests of sedition." It is provided in the will of the father of a patriot whose fame constitutes one of the chief glories of our college that his son should never "be sent to the colony of Connecticut for his education, lest he should imbibe in his youth that low craft and cunning which they disguise under the sanctified garb of religion."

And yet, to the cadet of a New York family, graduated at Yale, we owe the fundamental condition in the charter of King's College, granted in 1754, that no

tests shall "exclude any person of any religious denomination whatever from equal liberty and advantages of education." Moreover, in the long and bitter controversy which preceded the granting of the charter, the principle was laid down for the first time in the colonies that it was the duty of the State to provide for the education of all its children, free from the control of sectarian religious influence. The ideas thus propounded by William Livingston, the statesman and patriot, have all been incorporated into the legislation of the several States of the Union, and at length in the new constitution of the State of New York it is made a fundamental provision that no public money shall ever be appropriated to any educational institution under the control of any religious denomination.

The delay in the establishment of an institution for higher learning in New York was due, however, not so much to indifference or to opposition, as to the extraordinary variety in the nationality and religious belief of its inhabitants. Unlike New England, it was not homogeneous in creed or in race. It is said that eighteen different languages were spoken in the colony, and there were certainly thirteen different churches in the City of New York prior to the Revolution. When, however, at length the college came to be chartered, the leading denominations were all represented in the Board of Trustees, and, so far as instruction was concerned, unlike the colleges of New England, it was absolutely unsectarian. Nevertheless, King's College was the special care of the Church of England, and its site was the gift of Trinity Church upon condition that its president should always be a communicant of the Church of England. If, however, it were thus expected that its graduates would be less devoted to the principles of individual liberty and the right of self-government, its promoters made a grievous mistake, for in the controversies which were soon to ensue between the colonies and the mother country there were no more earnest advocates of the doctrine inherited from their Dutch, as well as from their English ancestry, that taxation should not be imposed without consent and without representation. * * *

The first president of the college, Samuel Johnson, was a man of great piety and learning, the friend and companion of Berkeley, and the correspondent of his illustrious namesake, the lexicographer. In view of what our college is now doing and what it hopes to accomplish, it may be well to put on record here the aims which Dr. Johnson proposed to himself in the conduct of the institution which he had undertaken to organize: "A serious, virtuous, and industrious course of life being first provided for, it is further the design of this college to instruct and perfect the youth in the learned languages and in the arts of reasoning exactly, of writing correctly, and speaking eloquently; and in the arts of numbering and measuring, of surveying and navigation, of geography and history, of husbandry, commerce and government; and in the knowledge of all nature in the heavens above us and in the air, water, and earth around us, and the various kinds of meteors, stones, mines, and minerals, plants and animals, and of everything useful for the comfort, the convenience, and elegance of life in the chief manufactures relating to any of these things. And finally to lead them from the study of nature to the knowledge of themselves and of the God of Nature and their duty to Him, themselves and one another, and everything that can contribute to their true happiness both here and hereafter." I think it will be conceded that if our university shall be able to cover this ground and to accomplish the results expected to be produced by the college course, no just criticism or complaint will ever be made by the most ardent friend of education.

Certain it is that the scheme outlined in the original circular was carefully followed for more than one hundred years, during which the standard of scholarship was always of a high order, and the cultivation of morality and honor was maintained as the primary object of education.

If the leaders in the struggle for independence were college-bred men, the

foundation of the Government and the formation of the Constitution was pre-eminently their work. Of the 55 members of the Constitutional Convention of 1787, 9 were graduates of Princeton, 4 of Yale, 3 of Harvard, 2 of Columbia, 1 of Pennsylvania, 7 of William and Mary, and 6 of foreign colleges. The small number from Columbia was due to the fact that New York sent but three delegates to the convention, but its two sons, Alexander Hamilton and Gouverneur Morris, were with Madison, and afterwards with Jay, in the "Federalist," the very bulwarks of that instrument which is acknowledged to be the most wonderful and successful political achievement ever devised by the wit of man. * * *

If the construction of the Constitution was thus a triumph of patriotism over what appeared to be insuperable difficulties, its ratification by the States was only achieved by memorable efforts of wisdom and statesmanship. The battle was really fought out in the State of New York, where Hamilton, Jay, Morris, and Livingston, who were the sons of our alma mater, overcame the opposition of Clinton, whose sturdy patriotism and great services to the cause of liberty made him a formidable foe. While the decision was still in doubt the impatient people of this city determined to celebrate the ratification of the Constitution, which was secured by the adhesion of the State of New Hampshire before the New York convention could be induced to act. In the procession, which was the first of many memorable celebrations of a similar character, the professors and students of Columbia College took a conspicuous part. On the banner under which they marched were inscribed the words: "Science and liberty mutually support and adorn each other." The author of this legend (certainly not remarkable for classic grace) could by no possibility have anticipated the potentialities for New York which were involved in these simple words. Liberty was indeed secured by the Constitution just ratified, but science was in its cradle. The principle of gravitation had been discovered, and the composition of air and water had recently been disclosed, but the application of this knowledge had not yet been made in America. Not a single steam engine had been erected on the continent, and beyond the rude application of a few water powers, all forms of industry were still carried on by hand. But the country was a land of unbounded resources, and its inhabitants, animated by individual energy and protected by law, were well prepared to undertake the conquest of a continent, and to develop its possibilities of wealth. The free spirit of the nation was thus loosened at the very juncture when science entered upon the career of discovery and development which has crowded the nineteenth century with great achievements and produced a sum of wealth far exceeding all the results of the eighteen preceding centuries of the Christian era. No pen can describe, no imagination can conceive the material triumphs of which this generation has been the witness and the partaker.

The favorable geographical position of New York gave it the natural primacy in this development, and its sons were not slow to see and to take advantage of its opportunity. De Witt Clinton, the first graduate of Columbia College after the Revolution, created the Erie Canal, by which the wealth of the great West was opened up and poured into the lap of New York. Robert R. Livingston (another graduate), the great chancellor who administered to Washington the oath of office, recognizing the genius of Fulton, supplied the means which made steam navigation a success. John Stevens, an alumnus of Columbia College, gave us the railway and the screw propeller, which have revolutionized transportation by land and by sea and enabled us to feed the teeming millions of Europe. Thus were supplied the stimulus which has made the century now closing a very carnival of enterprise, and an uninterrupted triumph of science and industry.

But in order that the result of genius and energy may be made beneficial to

society, the protection afforded by government and by law must be assured. This work fell to the lot of James Kent, appointed in 1793 professor of law in Columbia College. His lectures to the students—afterwards expanded into his Commentaries on American Law—have had a deeper and more lasting influence in the formation of the national character than any secular book of the century. The rapid growth of wealth tends to undermine that respect for the rights of property which were embedded in the Constitution, and hence the timely exposition of the great chancellor, followed, as it was, by the exhaustive commentaries of Mr. Justice Story, became the inspiration of the conservative legislation which has characterized all the States of the Union, and produced that respect for law which is the most striking trait of our people, and which preserved the Federal Union in its time of peril.

Enough has been said to show not only that Columbia College has thus contributed its full share to the creation of the free Government, which is our chief glory, but that in the marvellous material development which has taken place under its influence and protection, the achievements of her sons have been of transcendent value. They have certainly made New York the largest and richest city on the Western Continent, with possibilities of progress which promise to make it the metropolis of the world. With this conclusion we might rest the case of Columbia College in the consciousness that her past is at least secure. But this occasion takes note of the past only as the pioneer of the present, and the promise of the future.

A nation is not great because it is rich, any more than a man is a hero because he is a millionaire. The question is not how much riches we have accumulated but what we are doing with them. Is this great store of wealth being used merely for the acquisition of more wealth, and for the satisfaction of material wants and pleasures, or does a fair share of it go to the gratification of the spiritual needs of humanity and for its elevation into a higher and purer atmosphere?

These questions can not be answered without a few words upon the nature and origin of the wealth which we find concentrated in the City of New York. Broadly it may be stated to be of two kinds—the one altogether material, in the form of commodities, houses, and other visible property in which the value is due to the expenditure of labor and skill upon raw material; the other element of wealth is invisible and conventional, but none the less possessing commercial value, because the world is willing to pay for genius, taste, beauty, and potential utility. The most important form of this invisible value resides in that increment in the selling price of land, which comes from the mere presence and aggregation of population. * * * This increase in value, not due to any effort on the part of the owner, inures under our system of property solely to his benefit. It could not be otherwise without violating the principle of individual liberty on which our political system is based. The law imposes no obligation upon this form of property except the payment of taxes according to a general and uniform rate upon all property. And yet there is a feeling in the public mind that value created by the general effort has in morals attached to it certain obligations of trust, which do not inhere in other property produced by the labor and capital employed in the walks of industry and of commerce. * * *

Columbia College is perhaps the most prominent example of the beneficent operation of the natural tendency by which the unearned increment sooner or later is devoted to the public welfare. Its original buildings were erected by the proceeds of two lotteries authorized by the State, and by modest contributions from the enlightened friends of education at home and abroad. Its site consisted of about 6 acres of land, the gift of Trinity Church, which held the King's farm in trust for the promotion of religion and learning. Its value in 1754 was esti-

mated by President Johnson at $16,000. In 1814 the State of New York, desirous to rid itself of the burden of the botanic garden (which had been founded by Dr. Hosack, one of the most enlightened sons of Columbia) transferred to the latter the fee of about 16 acres of unproductive land in the vicinity of what is now Fiftieth street and Fifth avenue, estimated at the time to be worth about $20,000. These parcels of land now constitute the source from which the permanent revenue of the institution is derived. They are estimated to be worth $12,000,000, and yield at the present time an annual revenue of $400,000. This property practically enables higher education to be supplied at about one-half the actual cost of its provision. Thus Columbia College is not merely a great educational agency in which New York takes special pride because it is the product and evidence of its growth, but it is also a standing monument to the wisdom of our political system, founded on individual liberty and the security of property.

While this process of incrementation was thus slowly but surely progressing, it must be conceded that Columbia College, in common with the other institutions of learning throughout the country, fell into a condition of comparative stagnation, in marked contrast with the activity in the material and industrial world. It continued, indeed, to perform its original work of educating Christian gentlemen—men who, as Herodotus says, "could ride and shoot and tell the truth," and whose influence in the community tended to promote conservative action and to mitigate the demoralizing influence of the mere pursuit of wealth. The trustees of the college, upon whose roll for a century appear the names of the foremost citizens of this State, were at no time insensible to the desirability of extending its educational advantages so as to bear some adequate proportion to the growth of the city in population and enterprise. In 1810, in accordance with an able report presented by Rufus King, in which the primary principle of all sound education was declared to be "the evolution of faculty and the formation of habit," changes were made in the curriculum and in the discipline of the institution, which, however, failed to enlarge the demand for its privileges. In 1854, when the old college site became available for revenue, a comprehensive university scheme was devised by a committee of the trustees, chief among whom was Dr. Henry James Anderson (of sweet and precious memory to the alumni of his time), which was justly regarded as the beginning of a new era in the educational history of the United States. Although this scheme was not at the time made operative, it resulted in securing for Columbia College the services of President Barnard, under whose enlightened administration the initial steps leading to the present university development were taken. There is nothing more touching in the long history of the college than the devotion by President Barnard of his modest fortune to the execution of the plans which he had never ceased to urge for university extension, and to which he had consecrated his life and given the results of his ripe experience and vast resources of learning.

But the efforts of the colleges everywhere, even if they had been endowed (as they were not) with ample means, would have failed in view of the fact that the demand for instruction in the liberal arts had actually fallen off in this country, in consequence of the diversion into industrial pursuits of the most promising and intelligent young men to whom the rewards of business were more attractive than the delights of learning. It is a remarkable fact that from the beginning of the century down to the conclusion of the late civil war, there was an actual decline in the number of students who graduated at the various colleges in proportion to the whole population. In other words, while the country was growing in wealth the conservative influence of sound learning was steadily diminishing, with the depressing results which are manifest to-day in every department of public life, in the halls of legislation, and in the sensational character of the public press.

The natural balance between the ethical and material elements of civilization

has thus been deranged, and in the City of New York this dislocation is far greater than in any other portion of the land, because there is a greater disparity of wealth on the one side and poverty on the other, due largely to the vast influx of foreigners, many of them illiterate, who have been landed chiefly in this port. While the general average of wealth has more than doubled in fifty years, indicating a vast improvement in the condition of the people at large, there has been a differentiation between the two extremes of the scale—the very poor and the very rich—without a precedent in the history of society, and accompanied by an accumulation of disturbing questions which, unless wisely dealt with, threaten an aggravation of discontent dangerous to social order. * * *

The feeling is rapidly spreading that the time has come for a new and nobler civilization. A spiritual wave like that which produced the Crusades, erected the cathedrals and the universities in the Middle Ages, or the later movement which culminated in the Renaissance and in the Reformation, is plainly in sight and ready to usher in the advent of the next century, when the question will be, not as in the eighteenth century, "What are the rights of man," or in the nineteenth century, "How these rights are to be made available for the production of wealth," but rather What is the duty of society in regard to use of wealth which has thus been created.

Already we can see the effect of this coming movement. In the present generation there has been a sudden and wonderful outbreak among rich men to endow higher institutions of learning, which they instinctively recognize as the true saviors of society. Not only have large benefactions been made to the existing colleges by which Harvard and Yale and Princeton and Columbia have been converted into true universities, but new universities have been munificently endowed by Cornell, Johns Hopkins, Rockefeller, and Stanford, thus perfecting the chain of higher learning from the Atlantic to the Pacific Ocean. The smaller colleges and the technical schools have not been overlooked in this avalanche of munificence, but its characteristic feature is the recognition that something higher and nobler is needed in order to save the coming century from the materializing influence of the great increase of wealth in the nineteenth century. It is a confession that the mere knowledge of facts is not sufficient for the elevation of character, but that the ethical and spiritual side of man's nature needs the nutriment which can only be supplied by scholars and teachers who devote their lives to the pursuit of truth without regard to its material rewards.

These considerations, which are true of the country at large, apply with peculiar force to Columbia College, which in the nature of things must become the foremost university of the foremost city of the foremost State of the foremost country in the world. What opportunity, what possibility, what duty is implied in these simple words? How the souls of its faculty and its trustees must be inspired by the greatness of the undertaking! Confided to their hands is a vast fund, contributed not by individuals, but the product solely of the growth of New York. They must and do recognize, therefore, that its first duty is to the city by whose progress it has been thus enriched.

A city is not great because it contains many dwellings and covers much territory. Its greatness does not consist in mere numbers and in commerce. Its eminence is determined by the character of its civilization and by its provision for the material, intellectual, and spiritual wants of its citizens. Life, liberty, and property must be secured, order maintained, and the law enforced. The best system and appliances of education must be provided for its children; there must be adequate means of recreation from infancy to old age; the young must be trained to habits of obedience and diligence; outlets must be provided for their physical energies, and the spectacle of young men growing up without occupation must be removed from the conscience of the community, which is

violated when there is no opportunity to learn mechanical trades—the natural outlet for their physical and mental powers. The population must be properly housed, perfect sanitary conditions must prevail, the standard of living must be raised, and parks and pleasure grounds provided on a scale which will enable every dweller in the city to exclaim:

> I care not, Fortune, what you me deny,
> You can not rob me of free Nature's grace.

Schools for commercial and technical education must be provided at night, so that artisans of talent and ambition may have the opportunity to develop natural capacity to its full extent; the evil influence of demoralizing resorts must be counteracted by the opening of museums of art, science, and industry, so that the population may become familiar with the highest types of beauty and the results of genius; free libraries and reading rooms must be provided on a scale demanded by the intellectual wants of an intelligent population; such provision should be made for the sick and poor that there will be no excuse for the presence in its avenues of tramps and beggars; its streets should be well paved and clean; transit should be speedy and cheap, and, above all, the churches should be conducted in a spirit so liberal as not merely to cultivate the religious instincts of men, but to exert a spiritual influence upon the rising generation through social organizations intended to amuse, instruct, and refine.

Such will be the great city of the future, and such a city New York will be if the Columbia University, whose new birth we celebrate to-day, shall be enabled to perform its mission as the teacher and exponent of the best results of civilization. It is evident, however, that New York is in a formative condition, and has not yet attained to the ideals of municipal excellence. It seemed to realize its imperial destiny when, in 1837, it introduced an adequate water supply. In 1854 it recognized its coming greatness by the creation of the Central Park; it was an inspiration of municipal genius when the museums of art and natural history were founded upon a basis which secured the cooperation of enlightened and munificent citizens in providing admirable collections in the buildings erected by the city. The same policy will now give to New York the great free library which has been rendered possible by the private beneficence of Astor, Lenox, and Tilden, whose endowments should be devoted solely to the increase of its collections and the expenses of administration. In fulfillment of the great ideals which have thus been slowly developed, the city is now preparing to expend vast sums on speedways, docks, new means of transit, new and better schools, small parks and playgrounds in the older and more crowded portions of the city, and in diversions of a healthful kind demanded for the comfort, recreation, and elevation of the masses of the people. It need not be feared that too much money will be invested in this direction if the works are wisely planned and honestly executed. The lessons of the civil war taught the people of this country that its resources are practically exhaustless when expenditures are made for the benefit of the whole community.

I have been moved to make this plea for individual liberty and private property because Columbia College by its origin, its history, and its traditions stands, and ought to stand for them as a sure defense; and from the unique manner in which its endowment has been provided should be a perpetual inspiration for the highest development of municipal spirit, as lofty as that which, in the days of Pericles, made Athens "the eye of Greece," and by a sublime exhibition of civic genius crowned its Acropolis with the peerless temple of the goddess of wisdom, before which the world still bows with admiring recognition. To educate the citizen, to place before him the highest ideals of duty, and to stimulate him to the stern performance of the obligations which rest upon him as a partaker in mind, body, and estate of the inestimable benefits of good government ought to be the chief

aim of the university, which from this day will be the most conspicuous and powerful institution in this great city. Here will be treasured the best memories of unselfish sacrifice and heroic achievement; here will be recorded all the failures as well as the triumphs of civic statesmanship; here social problems will be discussed and solved through its affiliated institutions, which will reach every household and every citizen. The children in the kindergartens, the boys and girls in the schools, the workmen in the shops, the clerks in the marts of commerce, the merchants and the manufacturers in their offices, the professional men in their studies, all will come under its influence. The efforts of the community will thus be coordinated for progress and for evolution into a higher and better environment. Every agency for instruction, for culture, and for refinement will be systematically employed in the development of a nobler civic life; and, above all, the wealth which has accumulated in this city by the joint association of its people, and to which every human being contributes by his industry, will come to be regarded as a sacred trust to be administered in the public interest for works of beneficence to all. The petty jealousies between the classes will steadily disappear, and it will be demonstrated that democracy and liberty are coexisting and inseparable factors in the largest and best development of civilization.

The trustees of the college have shown themselves to be fully conscious at all times of the obligation which rests upon them in the administration of the great trust confided to their keeping. From the humble beginning in 1754 with seven students and two instructors, with an income so modest for nearly a century as to limit the instruction of the college to such branches as were necessary to educate Christian gentlemen, the college, under the wise guidance of President Barnard and President Low, has been developed into a university, which, during the last year, gave instruction to 1,973 students, enlisted the services of 265 teachers, and expended a revenue of over $750,000. It now undertakes to provide instruction in all departments of human learning required for the highest development of modern life. The old academic training is preserved for those who wish to lay the foundations of a scholarly education, fitting them for the study of the learned professions or for the pursuit of a literary career. Its schools of science qualify the engineers who are to become the captains of modern industry, or to pass their lives in the study of natural phenomena; its school of medicine, with its affiliated hospitals, in connection with which the names of Sloane, Vanderbilt, and Kissam will ever be held in grateful remembrance, provides the best instruction for alleviating the physical sufferings of the race, and the sanitary knowledge necessary to prevent the spread of disease; its school of law graduates the men who are to protect, enlarge, and defend the civil rights of a free people, and to develop jurists who will have the knowledge, courage, and honesty to maintain the law and administer justice without fear and without favor.

But, above all, and crowning all, is the school of political science, whose province it is to investigate the principles of justice, the elementary conditions and customs of the social organization, and the history and results of their influence in the development of civilization, and the progress of man from a state of barbarism to the infinite refinements and culture of modern life. Herein Columbia College has realized the ideals of Jefferson for the university to which he gave the ripe experience and the affectionate devotion of his old age. It has given effect to the hopes of Washington, who in his first message delivered to Congress in this city, in his correspondence, and in his last will, gave voice to the purpose which was near his heart, of founding an institution in which the principles of free government might be taught to specially selected students who would thus be qualified for public office in the same manner as the Academy at West Point educated officers for the military service of the country. Already in issues of

great moment the influence of Columbia University has done much to dispel error, to promote a better understanding between nations, and to avoid complications which might otherwise have resulted in actual hostilities.

Such is the university which the legislature of New York in 1784 foreshadowed when it declared that Columbia College was to be the mother under whose fostering care the educational system of the State would be made worthy of the great people who had pledged every dollar of its property for the education of every child within its domain.

But, as it is with the city which has given birth and wealth to this chief monument of its prosperity and glory, so the university stands only upon the threshold of a great career. Already it has outgrown the provision which a decade ago was supposed to be adequate for all possible requirements. By the general concurrence of its trustees, its faculty, and its alumni, and with the approval of the city and of the State, it is to be transferred to these historic heights, surrounded by a vision of beauty which satisfies the ideals of the poet, the patriot, and the scholar. Here, then, is to be forever the center of the intellectual life of the city—the citadel of last defense against the perils of ignorance, of superstition, and of false doctrine. Here, buttressed by the noblest cathedral of our age, by institutions of charity and learning, and especially by Barnard College, in which, if the rich people of New York do their duty, the women of the future will be admitted to equal educational privileges with their brothers, the university buildings will forever, under the flag of freedom, be an unassailable bulwark of sound learning and the gateway to universal knowledge.

If, then, the university has a duty to the city which it is striving to perform, have the citizens of New York no corresponding duty to discharge in providing it with the halls and buildings in which this beneficent work is henceforth to be carried on? If its vast endowment is to be sacredly applied, as it should be, to defray the cost of instruction and administration, ought not the rich citizens of New York, whose wealth has been derived from the same source and by virtue of the same law of increment which has given to Columbia College this endowment, be emulous to apply their surplus riches to the building of the structures and to the provision of the appliances for higher education on a scale adequate to meet the ever-increasing demands of modern civilization? Large gifts have already been made by the alumni, by the Fayerweather estate, and by public-spirited citizens for the purchase of the new site. Seth Low, its honored president, inspired by filial piety and by public spirit, has given the great sum of money required for the construction of the library, around which all the other departments of the university must necessarily be grouped. William C. Schermerhorn, chairman of its board of trustees, whose long life of usefulness in this city has only been equaled by his modesty, has set the example of appropriating a portion of one of the large fortunes which have been created by the growth of the city to the erection of a hall of physical science, whose developments day by day are awakening an astonished world to new possibilities of discovery tending to the prevention and cure of disease, the increase of the general welfare, and to the final triumph of mind over matter.

While these lines are being penned, another family, among whose members are distinguished graduates from Columbia, have provided the means for erecting the great building devoted to chemical science and art, which will for all time commemorate the source from which the prosperity of the descendants of Frederick Christian Havemeyer has been derived. For the naming of the remaining halls to be constructed, there will undoubtedly be a generous rivalry among the families whose names are connected with the early history of New York, and whose descendants have been enriched by its growth. In this country patents of nobility are wisely prohibited, but a title to immortality is surely

within the reach of those to whom the trustees may finally award the privilege and the glory of erecting any one of these buildings. One college hall, however, the trustees have wisely reserved for the alumni to build by contributions, large or small, as a memorial to the living and dead sons of Columbia, whose names shall be inscribed upon tablets to be placed in the great hall of the building. In the entire history of Columbia College the number of its graduates has not been large, but in point of character, ability, and achievement the roll of honor is illustrious. Hereafter, when the university shall number its sons by hundreds of thousands, every one of these early names will have an interest for future generations, especially when they suggest the ties of family and excite the pride of an honorable ancestry. In the coming competition which I foresee, it is to be hoped that the trustees will be very cautious in admitting to the company of the immortals, whose names these great halls shall bear, any one which may not hereafter revive the memory of an honorable and useful career in the acquisition of fortune. Thus Columbia will stand not only for what is pure in thought and action, but will be a perpetual incentive to virtue, public spirit, noble aspirations, and successful achievement. * * *

Social reforms never come from below. They originate in the trained intellect of scholars and in the inspirations of genius in an atmosphere favorable to their reception. Slowly but surely great ideas descend and penetrate the mass of the people. The current belief of to-day was the scientific discovery of yesterday, while the evil of one age is very often due to reforms instituted in a previous age, and yet the underlying principles of truth and justice never change. The guardianship of these principles reside in the higher instructions of learning, and their application to the changing conditions of society depends upon teachers and scholars who devote their lives to the investigation of truth, regardless of the material results of their labor.

In this country the democracy, whose power will never grow less, will tolerate no violation of its ideals. But these ideals may be either true or false. They may lead to the ruin of society, as they did in the French Revolution, or they may raise it to new standards of justice and happiness. The outcome will depend on how far the public will is guided by the knowledge of sound principles. This knowledge can not be acquired in the common schools. Even if every child is instructed in the rudiments of education, the limitations of age and of the time which can be devoted to elementary learning do not admit of the intellectual and moral training necessary in dealing with great questions of public policy. It is true that in rare instances men like Benjamin Franklin, Roger Sherman, and George Washington, who were not college bred, appear upon the stage of public life and take their place among the leaders of thought and action. But they were men of great natural powers which had been developed by extraordinary opportunities and responsibilities in early life, serving thus to prove the rule that thorough training and large experience in public affairs are prerequisites to successful administration. * * *

XIII.—Speech of Hon. J. L. M. Curry before the Legislature of Georgia, November 29, 1897.

Mr. Speaker: This generous and sympathetic welcome to a Lincoln boy is very encouraging. Our distinguished friend, who has demonstrated in our hearing this morning his great fitness for the position which he fills, spoke of his presence here before the legislature as being a "red-letter day." It is of course an honor which any one might appreciate to have the privilege of standing before those whom the honest and unpurchasable constituents of 137 counties have sent here to do the

great and solemn and, I might say, sublime work of making laws for the government of the people.

A few years ago, in my ministry of education, I visited the Girls' Normal School at Milledgeville, which is abundantly worthy of your confidence and support, and I went into the hall of the capitol, which now no longer exists, and I remembered (and it is among my earliest recollections) the fact of my own father leaving the dear old county of Lincoln and going down to Milledgeville—not once, but twice—as a legislator; and also an uncle of mine, who has held the position which you so honorably fill to-day as speaker of the house of representatives of Georgia—I mean Thomas W. Murray, for whom a county is named—and another uncle of mine, Peter Lamar, who was for years a representative and a senator from the same county of Lincoln.

In addition to my nativity and bearing a diploma from the university, I feel that I have some right of speech before a Georgia legislature. As I stood in that old hall there came thrilling memories; and as I walked through those historic scenes where Georgia history had been made so luminous, I imagined I could see coming out from the walls into the aisles the images of those who had made Georgia so conspicuous, and I do not now hesitate to say that, in my humble judgment, there is no State in this Union—not even Massachusetts, Ohio, Pennsylvania, or Virginia—which has contributed to jurisprudence and to politics and to higher civilization more distinguished men than the State of Georgia. [Applause.] * * *

Politics is a science of government that has too often been degraded into mere spoils of office, our citizens forgetful that public trust is not for individual aggrandizement but for the public good. I do not know that there has ever been a time when there was a greater need for wise and discriminating and courageous legislators or broad statesmanship. I have in the past known men who, taking their lives in their hands, would march with unblanched cheek in the presence of a strong battery or encounter the discharge of a whole field of artillery, and I have sometimes seen those same men in the legislature quake and shiver in a dastardly manner lest what they did would incur the ill will of Tom Jones or Jack Brown, of "Possum Trot," in his county. [Applause.]

The legislature is not here to ascertain what the people want, but what they ought to want, and I have sometimes thought that there was a failure to apprehend what were the just limits of legislation, distinguishing subjects for legislation from those that should be left to courts or to moral agencies of society, and also the art of framing appropriate and effective laws.

In these days of political corruption there is a new beatitude, "Blessed are the strong, for they shall prey on the weak." Government is perverted into partnership with monopolies, helping the few, the rich, to grow richer. The maxims and methods of government should be exalted and citizenship should be raised into a partnership with every virtue, giving predominance to justice, right, veraciousness, equality before the law. Ordinarily in looking over the calendar of a legislature you will find it is filled with bills numerous and experimental, and sometimes of local character and of doubtful justice. I came to-day to plead with you, my friends, for an object general and universal—one that applies to every neighborhood, to every family, and to every citizen in the State of Georgia, from Dade to Camden or from Rabun to Decatur—one of universal concern, which lies at the foundation of civilization and good government and of material as well as mental prosperity. The good book says that the "king himself is served by the field," and that is the text of the most excellent speech of our distinguished friend this morning, the Secretary of Agriculture, and it means that the people, the government represented by the king, are served by the field, and that wealth comes from the field, and that agriculture is the basis of our real wealth and prosperity.

There are some things of general and permanent concern which, it seems to me, should attract the attention of a legislator, and they are closely connected with the question of schools. One of the most important things is to provide for good roads. An agricultural journal estimates that farmers pay the enormous sum of $600,000,000 for transporation of produce to nearest market. The heaviest tax a citizen pays in this country is the cost of transporting crops to market, and if that cost could be put down in dollars and cents instead of wear of machinery and live stock, loss of time and temper, and violation of the good rule which prohibits us from swearing, there is not a community in Georgia that would not rebel against the impoverishment. Wagon transportation over the average road costs from 15 to 20 cents per ton for each mile. When roads are impassable in winter, more than a million draft horses are kept in unproductive idleness. I have seen a woman and a dog hauling, over a good road in Germany, more produce than could be hauled by a wagon and two mules over some roads in Virginia and Alabama.

Those who manage railway companies sometimes incur the ill will and prejudice of unthinking people. Those who manage the railroads of this country, amounting to a capital of twelve thousand millions, with 180,000 miles of railway—and generally, in my judgment, good men, many of them surely so—I take it that those who manage railroads are on an average about as good and nice people as the merchants and lawyers, and doctors, and, if some of my friends before me will excuse me, the preachers and legislators of the country. [Applause.]

Another, a great measure, is prison reform. I have before me a pamphlet which I picked up for railroad reading just as I left home, "The Fifth International Prison Congress Proceedings in Paris." It is a Government publication, and full of valuable information and instruction on this subject.

Nearly every man I met a few weeks ago was talking about the convicts. Well, I shall not take up your valuable time in saying what I think about them, but I will say that the prisons, generally, in this country might be called normal schools for criminals. The juvenile offenders are under the tuition of the criminal classes. We want better penal legislation, improved administration of the prisons. We want to strengthen the prevention of crime and introduce humanity into law, rehabilitate the offender, and put better elements into the present condition of prison life. [Cheers.]

We want better education, intellectual, moral, industrial, practical, and home training, and inducements to self-exertion instead of State-supported pauperism. What is saved in withholding proper education from children is lost in criminal jurisprudence, jails, police, almshouses. Perhaps you will laugh at me when I say that as prisons are normal schools for prisoners, it would be a good thing if we had a school for the training of wardens of the penitentiaries, so that they might understand their business and the science of penitentiaries. [Applause.]

We are told that agriculture is the great basis of civilization, and we know that the farms of this country aggregate over $13,000,000,000 and are the most important economic interest of our people. It is natural that they should be interested in the improvement of agriculture. Agriculture is very unremunerative. Men can not grow cotton profitably at 4½ cents a pound. Some of the depression is the result of culpable negligence, of bad farming. The Commissioner of Agriculture, in his last report, says that 98 per cent of farms sold under mortgages were those in which the one-crop system was followed,

Your main duty now as legislators, as Georgia statesmen, is to enlarge the power and worth of Georgia citizenship. The chief wealth of civilization is man, his freedom in individual conduct and belief, his right to the possession and enjoyment of all his faculties, capacities, and activities in such full measure as is consistent with the enjoyment of like rights of other people. Does the sun shine less

bright, the flowers have less fragrance, does sleep come less sweetly to the children of the poor than to the children of the rich?

When I was a boy I heard Orestes A. Brownson define democracy as "the supremacy of man over his accidents." Democracy is a form of government and of political science which gives a man superiority over the accidents of birth, fortune, race, and blood. Every American is entitled to the full development of his powers. Some people say that does not do for the mudsills; it does for the aristocracy, and priesthood, and kings, etc., but not for the common people. Government no longer represents a clique or privileged class, but is the organized expression of the whole people. As a form of government democracy is not inherently nor necessarily good. There is a deal of ignorance and crime that masquerades under the name of democracy, which shows itself in popular prejudices, election frauds, bribery and falsehood, and blatant demagogism. Hereditary privileges have been abolished, but corporate power, confiscating taxes, legislation in the interest of the few, beyond even the dreams of avarice, unfortunately exist.

Our history does not show our democratic institutions to be infallible or inerrable. Newspapers and politicians talk flippantly of war, of the rights of insurgents, of colossal schemes of territorial acquisition, fighting navies, armies on a war footing, immense expenditures, while apparently indifferent to our own affairs, the enforcement of law and justice, and the suppression of crime. We had 11,000 murders in the United States last year, when there were only 163 in England and Wales. The reclamations of cities from misrule and bribery and the use of offices and contracts as rewards for deadbeats are of pressing need, for in our experiment of self-government there has been no such failure as in municipal government. Universal suffrage is not a panacea. Giving management to greed, ignorance, avoirdupois of number does not increase the wisdom or virtue of those possessed of these gifts. "The virtue of human wit is not greater than the virtue of human character." Representative government, a constitutional republic, is a condition of freedom under moral and intellectual control, requiring patriotism, intelligence, integrity. Absolutism is easy. Liberty is a high prize to be won, a reward for the best, and is difficult to be preserved.

A man capable of development has the right to be educated, and the State or the family which deprives the boy or girl of that inalienable right for the fullest development of his moral, intellectual, and spiritual nature is doing a grievous wrong to that child and committing treason against the State in which he lives. [Applause.] Democracy demands a larger and larger number to enjoy mental improvement. I know some people say it is not safe to educate the masses. I am not afraid of the educated masses. I would rather trust the masses than kings, priests, aristocracy, or established churches. [Cheers.] There is not an instance in the history of mankind where a church establishment has ever relaxed voluntarily its hold on the people. This separation of state and church comes from the uprising of the masses. Reforms have never come from the church or rulers, from above downward. Every social, political, religious revolution has come from the deep-settled convictions of the masses, determined to proclaim and assert their rights and their privileges, and that is the essence of democracy and is the essence of the New Testament. Despotic governments make men thin-blooded and low-browed; all back head and no forehead. No nation can realize its full possibilities unless it builds upon the education of the whole people. A wicked, stupid government, a penny-wise and pound-foolish legislator, can brutalize a race, and, reaching forward, can fetter generations unborn.

You can predestinate the condition of children by adverse and illiberal school legislation. The largest wastes are through ignorance, which paralyzes or misdirects the best forces. Knowledge saves. Wealth is not in iron ore, or water power, or marble, nor in the soil, but in the brain that organizes. We ought to

broaden our ideas on education, consider it in a more rational light, for it is character translated into action. "Common sense, sound judgment, wisdom acquired by observation and tempered by experience, with genius and power to help oneself to plan and execute, entitles a man to a diploma from the world at large, even if he never gets it at a university."

Men who are to increase the wealth of the country by any industrial pursuit will be successful in proportion to industry, intelligence, and integrity. Wages are regulated by mental capacity and not by muscular strength. The free public school is the highest evidence of statesmanship, the most economical measure that can be adopted. These public schools have come to stay. Those who oppose them may go, but the schools for the education of the children, if we would perpetuate institutions and if we value the Magna Charta of human liberties, the New Testament, are to continue and to be preserved.

What kind of schools do you want? I am an American, and I want American schools for American citizens. I do not want any of your hyphened citizenship—German-Americans, or Irish-Americans, or Swedish-Americans, but full-blooded, true-hearted, patriotic Americans. I went into a Boston school the other day, numbering 2,400 children. Every single one of them was of foreign parents, and 97 per cent of them, when they came into the school, could not speak the English language. I do not believe in giving public money to the schools that are managed by denominations or that are under sectarian influence and control. [Applause.] I believe in all kinds of schools, from the university up to the kindergarten. [Laughter.] I would support a university from public revenues. I would give moral support and influence to denominational schools. I would have institutions of technology. I would introduce manual training into every school established by the State, every one of them, but I would not give one cent of money to any schools or institutions for charitable purposes when those schools and institutions were not under State control, and when there was not an effective audit of every cent received by them. [Applause.]

The South has expended more than about $250,000,000 for schools, and then foolishly impoverished herself by tributes to foreign peoples. I have seen on the streets of Asheville, N. C., wagons for sale that were made in Kansas City, and our friend tells us this morning that our cotton seed, instead of being used at home, is sent abroad to enrich other people. Instead of using our products and living at home, there is a constant sum being sent away. An enormous sum, a constant outflow of profit, is sent out from the State each year in the way of life and other insurances, with only a very small return.

With slave labor the South lost sight of the need of diversified employment, of multiplied utilities, of finding varied sources for wealth and prosperity. A crying need is industrial education, so as to give skilled labor, and take away our dependence on the one-crop system. In many countries are trade schools to fit for particular employments. What has been lately done in the multiplication of manual schools is something absolutely unknown in the previous history of the world. I can name over 100 towns and cities in the United States which have incorporated manual training along with their public-school system and elementary education. It ought to be done more and more. It is not to teach men to be blacksmiths and carpenters or shoemakers, but the principles that underlie trade and industries ought to be made a part of the instruction in our schools, so as to give something that has some bearing on everyday life—an education that will enable the children to do something that man wants done. Heretofore education has been for the literary, leisured, professional classes to an unfair extent compared to the breadwinners. This is applicable to girls as well as boys. For the girls we can have cooking, sewing, and domestic economy. Upon the education

of the American girl depends the future of the American home. Good housekeeping and good cooking are very important factors in a nation's prosperity.

I have before me a report made by a committee of Irishmen appointed to ascertain what was needed for the restoration of Ireland's prosperity. These gentlemen visited France, Germany, Switzerland, Denmark, Sweden, and other countries, and they went through the whole question of how far education was necessary for the prosperity and comfort and advancement of the nation. Their report showed that wherever they had gone in those countries they found that prosperity and education went hand in hand with industry, and that absence of education meant lapse of prosperity. And that is more and more the case with every country in the world; and it is as necessary to agriculture as to manufactures. It is even more necessary, if possible, for agriculture than for other industries. Taking the case of Switzerland, the report said: It would be impossible to enumerate the institutions in Switzerland devoted either directly or indirectly to technical instruction. The Canton of Zurich spends one-third of its budget on schools, and the other cantons more or less in the same ratio; for it is an axiom with these people, that in order to secure the permanent prosperity of the State it is indispensable to educate the masses, and thus enable the artisan to excel in his work. It was the same of Denmark, which did not ask for protection, but for education. Denmark was one of the countries which by intelligence had made agriculture prosperous with free trade, and to such an extent that last year it sent £9,000,000, or £4 per head of its population, including women and children, of products to England alone after supplying themselves. In Wurttemburg there was not a pauper to be found, and that was a country that was miserably poverty stricken half a century ago. I could go through all the nations visited and show that education went hand in hand with industry, and that without education industry did not flourish.

The lesson to be derived from all this activity in matters pertaining to education is clearly this, that our foreign rivals are determined to keep ahead in the matter of facilities for instruction, and not only in those institutions wherein the highest branches of scientific instruction are pursued. The committee were convinced that the nation that has the best schools is the best prepared for the industrial warfare which lies ahead, and no money appears to be grudged for the erection, equipment, and maintenance of educational institutions of all grades, and especially of the science laboratories, which are being multiplied in Germany. The great industries of to-day depend more and more upon the successful application of recent discoveries to ordinary manufacturing processes and less and less upon the presence of coal, iron, and raw materials.

Everything that occurs in Georgia, that I see in the newspapers in reference to her future, interests me beyond expression. I never forget my nativity, nor the same State with whose history I became familiar in my early life and from whose university I was graduated. I love every foot of Georgia soil. I love every breeze that blows from mountain to the seacoast, and I read with interest and joy everything that is for her prosperity and usefulness. The other day I saw what this legislature had done in reference to education. When you go home and think over the past and your honorable career here, it will be a consolation to you. It will be a happy reflection that whatever else you may fail to do you did march up boldly, almost unanimously, and declare that, let failures come, let disasters multiply, let discord arise in different portions of the State, for one thing there shall be no question as to our conduct, and that is that we will vote as one man to preserve and sustain the common-school system of Georgia. [Applause.]

I am brought into close and intimate relation with the superintendents of education of the different States. Every one of them, so far as I know, as the result

of our official intercourse, which was at first between strangers, has become my friend, and official acquaintance has ripened into sincere friendship. Among all those superintendents none purer, none more patriotic, none more devoted to his work, none more successful in the administration of his office, none safer or wiser in counsel, than my beloved friend, your admirable superintendent of schools, the Hon. G. R. Glenn. [Applause.]

Take care of the teachers. Pay them well. Train them for their work. The great need in the pulpit, in the Sunday schools, in public schools and universities everywhere is better teaching. Honor the profession, train for the work, dignifying it by your conduct and your appreciation of their services. Recognize teachers as among the chief factors of your civilization, and do what you can to make the schools equal to any in the whole country.

I spoke a while ago of the dignity of the office of the statesman and the legislator. It is the chief duty of the statesman to watch over the outward interest of the people, and of the educator to quicken their souls. The statesman must study and manage the passions and prejudices of the community; the teacher must study the essentials, the deepest principles, of human nature. The statesman works with coarse instruments; the teacher works on that delicate, ethereal essence, the immortal soul.

The golden age is in the future, and we must grasp it by diligent effort and by wise conduct. The children and patriots on whom we are to depend for future glory are committed to you. Arouse yourselves for the broadest statesmanship. Jefferson said: "If we educate the children aright, our descendants will be wiser than we, and many things impossible for us to do will be easy for them."

I am here to-day to plead for the children; not for the grown-up men, not for the banks nor railroads, nor even for agriculture; but I am here to plead for the children. They are all over your State. They are to be the guardians of your interests, the protectors of your lives and homes, and to them are to be committed all the destinies of the future.

As a native Georgian, as an American, loving our institutions, let me beg you, in the name of my country, in the name of humanity, in the name of these children, whatever else may be done, to see to it that the children of Georgia, your children, the children of your constituents, have the same rights and the same privileges and the same opportunities as the children of Massachusetts, or New York, or of any country of the world. [Great applause.]

XIV.—Hubert Anson Newton.

Dr. Hubert Anson Newton, the celebrated mathematician and astronomer, was born March 19, 1830, at Sherburne, N. Y., and died at New Haven, Conn., August 12, 1893. The following particulars of his life are condensed from a paper by Mr. J. Willard Gibbs, presented before the National Academy of Sciences in April, 1897. The special quality of Dr. Newton's abilities was early manifested and was evidently inherited. His father, William Newton, was in charge of the construction of the Buffalo section of the Erie Canal and other similar constructions in New York and Pennsylvania, and showed original power in the solution of problems involved in this work; his mother was also noted among her neighbors for her mathematical ability. The son—

fitted for college at the schools of Sherburne, and at the age of 16 entered Yale College in the class graduating in 1850. After graduation he pursued his mathematical studies at New Haven and at home, and became tutor at Yale in January, 1853, when, on account of the sickness and death of Professor Stanley, the whole charge of the mathematical department devolved on him from the first.

In 1855 he was appointed professor of mathematics at the early age of 25, * * * almost the only instance in which the Yale corporation has conferred the dignity of a full professorship on so young a man.

The appointment was accompanied with leave of absence for a year in order that he might continue his studies in Europe. He was naturally attracted to Paris—

where Chasles was expounding at the Sorbonne the modern higher geometry, of which he was to so large an extent the creator. * * * The effect of this year's study on Professor Newton is seen in several contributions to the Mathematical Monthly during its brief existence in the years 1858–1861. One of these was a problem which attracted at once the attention of Cayley, who sent a solution. Another was a discussion of the problem "to draw a circle tangent to three given circles," remarkable for his use of the principle of inversion. A third was a very elaborate memoir on the construction of curves by the straightedge and compasses and by the straightedge alone. These early essays in geometry show a mind thoroughly imbued with the spirit of modern geometry, skillful in the use of its methods, and eager to extend the bounds of our knowledge.

Nevertheless, although for many years the higher geometry was with him a favorite subject of instruction for his more advanced students, either his own preferences or, perhaps, rather the influence of his environment was destined to lead him into a very different field of research. * * * When Professor Newton was entering upon his professorship the study of the higher geometry was less consonant with the spirit of the age in this country than the pursuit of astronomical knowledge, and the latter sphere of activity soon engrossed his best efforts. * * *

It was doubtless not by chance that he turned his attention to the subject of shooting stars. The interest awakened in this country by the stupendous spectacle of 1833, which was not seen in Europe, had not died out, as is abundantly shown by inspection of the indexes of this journal. This was especially true at New Haven, where Mr. Edward C. Herrick was distinguished for his indefatigable industry, both in personal observation and in the search for records of former showers. A rich accumulation of material was thus awaiting development. In 1861 the Connecticut Academy of Arts and Sciences appointed a committee "to communicate with observers in various localities for combined and systematic observations upon the August and November meteors." In this committee Professor Newton was preeminently active. He entered zealously upon the work of collecting material for personal observation and correspondence and by organizing corps of observers of students and others, and at the same time set himself to utilize the material thus obtained by the most careful study. The value of the observations collected was greatly increased by a map of the heavens for platting meteor paths, which was prepared by Professor Newton and printed at the expense of the Connecticut academy for distribution among observers. * * *

The results of these investigations appeared in an elaborate memoir "On shooting stars," which was read to the National Academy in 1864 and appeared two years later in the memoirs of the academy. * * *

In an elaborate memoir in the *Comptes Rendus*, M. Faye says, with reference to our knowledge of shooting stars and their orbits: "We may find in the works of M. Newton, of the United States, the most advanced expression of the state of science on this subject, and even the germ, I think, of the very remarkable ideas brought forward in these last days by M. Schiaparelli and M. Le Verrier."

The first fruit of Professor Newton's statistical studies on comets appeared in 1878 in a paper "On the origin of comets." * * *

The very interesting case of the comets of short periods and small inclinations, which was treated rather briefly in this paper, was discussed more fully by Professor Newton at the meeting of the British Association in the following year. Many years later Professor Newton returned to the same general subject in a very interesting memoir "On the capture of comets by planets, especially their capture by Jupiter," which was read before the National Academy in 1891 and appeared in the memoirs of the Academy two years later.

Meanwhile Professor Newton had attracted great attention by a series of papers embodying the results of important studies on the orbits of the meteors.

Most interesting and instructive to the general reader are his utterances on occasions when he has given a résumé of our knowledge on these subjects or some branch of them, as in the address "On the meteorites, the meteors, and the shooting stars," which he delivered in 1886 as retiring president of the American Association for the Advancement of Science, or in certain lectures in the public courses

of the Sheffield Scientific School of Yale University, entitled "The story of Biela's comet" (1874), "The relation of meteorites to comets" (1876), "The worship of meteorites" (1889), or in the articles on meteors in the Encyclopædia Britannica and Johnson's Cyclopædia. * * *

The value of Professor Newton's work was recognized by learned societies and institutions both at home and abroad. He received the honorary degree of doctor of laws from the University of Michigan in 1868. He was president of the section of mathematics and astronomy in the American Association for the Advancement of Science in 1875, and president of the association in 1888. On the first occasion he delivered an address entitled "A plea for study of pure mathematics;" on the second, an address on meteorites. Of the American Mathematical Society he was vice-president at the time of his death. In 1888 the J. Lawrence Smith gold medal was awarded to him by the National Academy for his investigations on the orbits of meteoroids. We may quote a sentence or two from his reply to the address of presentation, so characteristic are they of the man who uttered them: "To discover some new truth in nature," he said, "even though it concerns the small things in the world, gives one of the purest pleasures in human experience. It gives joy to tell others of the treasure found."

Besides the various learned societies in our own country of which he was a member, including the American Academy of Arts and Sciences from 1862, the National Academy of Sciences from its foundation in 1863, the American Philosophical Society from 1867, he was elected in 1872 associate of the Royal Astronomical Society of London, in 1886 foreign fellow of the Royal Society of Edinburgh, and in 1892 foreign member of the Royal Society of London.

Of Professor Newton's relations to the university, Mr. Gibbs says:

If from all those who have come under his instruction we should seek to learn their personal recollections of Professor Newton, we should probably find that the most universal impression made on his students was his enthusiastic love of the subject which he was teaching.

A department of the university in which he took an especial interest was the observatory. This was placed under his direction at its organization, and although he subsequently resigned the nominal directorship, the institution remained virtually under his charge, and may be said to owe its existence in large measure to his untiring efforts and personal sacrifice in its behalf. * * *

He was much interested in the collection of meteorites, and the fine collection of stones and irons in the Peabody Museum of Yale University owes much to his efforts in this direction.

Professor Newton was a member of the American Metrological Society from the first, and was conspicuously active in the agitation which resulted in the enactment of the law of 1866 legalizing the use of the metric system. He prepared the table of the metric equivalents of the customary units of weights and measures which was incorporated in the act and by which the relations of the fundamental units were defined. But he did not stop here. Appreciating the weakness of legislative enactment compared with popular sentiment, and feeling that the real battle was to be won in familiarizing the people with the metric system, he took pains to interest the makers of scales and rulers and other devices for measurement in adopting the units and graduations of the metric system, and to have the proper tables introduced into school arithmetics.

He was an active member of the Connecticut Academy of Arts and Sciences. He was associate editor of the American Journal of Science from 1864, having special charge of the department of astronomy. His notes on observations of meteors and on the progress of meteoric science, often very brief, sometimes more extended, but always well considered, were especially valuable.

In spite of his studious tastes and love of a quiet life, he did not shirk the duties of citizenship, serving a term as alderman in the city council, being elected, we may observe, in a ward of politics strongly opposed to his own.

XV.—Memorial Service at the Oswego Normal School in Honor of Dr. E. A. Sheldon; Born, October, 1823; Died, August, 1897.

The memorial service in honor of Dr. E. A. Sheldon, arranged by the faculty of the Oswego Normal School, of which he was the founder and inspirer, was held at the Normal Hall Friday, October 22, 1897. The exercises consisted of music and addresses by those who had known Dr. Sheldon most intimately in his varied

relations. The extracts from these addresses here given cover the chief points of his remarkable career, the inception and development of his educational work, and those personal characteristics which made him a sustaining power and endeared him to all friends and associates.

[From an address of Prof. I. B. Poucher.]

Our beloved principal, Dr. Sheldon, was born at Perry Center, N. Y., in a small, unpainted house containing one room. He attended the district school for ten years, but his energetic nature rebelled against the dreary round of this school life, and when the school day's work was completed he hastened to the more agreeable work of the farm.

This monotonous life was suddenly interrupted by the acquaintance of a college graduate and teacher, who inspired him with the desire to prepare for college. He borrowed some Latin books and commenced preparation with that energy, faithfulness, and industry which were ever after exemplified in his life. He entered Hamilton College, New York, at the age of 21, intending to fit himself for the profession of law. At the close of the junior year his health became impaired, and he severed his connection with the college; but he had left his impress upon the faculty of the institution. How well they had measured the young man's ability and character you who knew him may judge from their testimony, as follows: "Diligent and capable in business, distinguished by regular and studious habits, as well as by great excellence in character and scholarship, a young man of intelligence, ability, the firmest integrity, and a warm heart."

While in search of health, his active, energetic spirit sought varied employment. Working in a nursery in Oswego, N. Y., visiting the families of the poor in the vicinity, occupied his time. One who believed that heaven is a place of the greatest activity could not be idle on earth. These visits to the dwellings of the poor, his observations of the miseries surrounding them, and the ignorance of the children, led to the logical question, "How can these conditions be bettered?" The answer to this question led to the formation of an "Orphan and Free School Association," the first free school in the city of Oswego.

In the winter of 1848-49 about 120 children of the poor, many of whom had never before entered a schoolroom, assembled in the old tabernacle on the spot where the Vulcan Foundry now stands. Dr. Sheldon was their teacher at the lucrative salary of $300 per annum, to be paid by citizens who felt liberally inclined. The school prospered, and soon a Sunday school was organized, in the belief that "to educate the mental man alone is but to educate the skeptic, to educate the spiritual man alone is but to educate the puny Christian, to educate the physical man alone is but to educate the savage; but to educate a man in whom all these powers are developed is to educate one who is worthy of Him after whose image he is formed."

These schools were the initiatory steps toward the organization of the free-school system of Oswego, which organization was secured in May, 1853, under the able supervision of Dr. Sheldon as secretary of the board of education and superintendent of schools. He was called to this position from the city of Syracuse, N. Y., where he had spent the preceding two years as superintendent of schools.

We can now form some estimate of the great amount of labor performed by Dr. Sheldon at this time. He invariably rose at 5 a. m. and wrote and studied until 7 a. m. After breakfast he immediately repaired to the office of the board of education, where he was occupied with the accounts of the board, meeting teachers and supplying their wants, visiting schools daily, and returning home only in time for the 6 o'clock dinner. In the evening it was his habit to study two hours.

The years of 1853 to 1859, so full of labor, were also filled with rich experiences. Evidences had accumulated which impressed him that neither the present methods of instruction nor the subjects pursued were best adapted to the development of the human soul.

One day on his round of visits to the schools he plucked from the wayside plants, shrubs, wild flowers, and seeds, and with his hands and arms full inquired of the children what they knew of these things. He found them absolutely ignorant of the things of profound interest round about them. In a meeting of teachers one asked him, "What is education?" His quick and reverent reply was, "To know God and obey him." But how are we to know God except by studying his works—animals, vegetables, minerals, and human souls? Two opposing views have been held as to the products of human understanding. The first claims that there is nothing in the intellect that has not been in the senses. Sense knowledge is the beginning of all knowledge and all our knowledge is measured by sense experience.

Since the senses furnish us with the elements of knowledge, we know what we have experienced, and that only can we know. Opposed to this is the conception that man possesses ideas that could in no wise have been derived from the circle of sense experience, however wide; such, for example, are ideas of God, of immortality, of universality, of first cause. Conceptions of this character are derived directly by rational intuition and are superior to sense experience. The latter was Dr. Sheldon's belief. But nevertheless he felt that children should begin by studying the material works of creation. He believed that this was the best means of developing the child's higher nature as well as of preparing him for the practical affairs of life.

While meditating upon these things he visited Toronto, in the Province of Ontario. Here, in the National Museum, he saw the appliances for instruction used in the Home and Colonial Training School in London, England. He came home laden with colored balls and cards, bright-colored pictures of animals, building blocks, silk worms and cocoons in boxes, cotton bolls, samples of grain, specimens of pottery and glass. "Here," said he, "are the subjects of thought and study." Where are the teachers to instruct? was the question raised on all sides, but unanswered. This turned his thoughts in a new direction. Miss M. E. M. Jones, of the Home and Colonial School of London, England, was engaged by the board of education of the city of Oswego as instructor, and the Oswego Training School was opened May 1, 1861.

Dr. Sheldon was not only principal of this school but student also, his name being enrolled with the first graduating class of 1862, numbering 39, many of whom were teachers in the city schools, who assembled daily from 4 to 6 p. m. for instruction. In the summer of 1862 Miss Jones returned to England to be gratefully remembered by all who came under her instruction. The city training school was continued under a corps of instructors, Dr. Sheldon still acting as principal. During the dark period of the rebellion, 1863 and 1864, the State of New York appropriated $3,000 per annum for the support of a training school for teachers in the city of Oswego. Notwithstanding large sums of money were being expended for the suppression of the rebellion and the perpetuation of the Union "one, indivisible and forever," the State of New York was not unmindful of the intellectual and moral welfare of her children. These important educational movements followed in quick succession under the guidance of Dr. Sheldon, one of the strongest points of his character being the power of organization.

Let it not be thought that all was harmonious during these laborious years, 1860 to 1864. The Oswego system was named The New Education, and was severely attacked in the State teachers' convention of New York in 1862 and in the national convention of teachers in 1864. But in 1865 the Oswego principles and methods were formally approved by the national convention of teachers as being based upon sound psychological principles.

One would think that the labors of superintendent of schools of the city of Oswego and the principalship of the Oswego Training School would have furnished sufficient labor for Dr. Sheldon. Not so, for during this period he wrote and published many papers and addresses, a graduated course of object lessons covering 407 pages, and a manual of elementary instruction for teachers covering 471 pages. He subsequently published a set of reading charts, a complete set of reading books, and in addition to this taught in the Sabbath school and faithfully discharged all church duties.

These years of laborious duty were also years of honor. The degree of A. M. was conferred on Dr. Sheldon by Hamilton College, the degree of Ph. D. by the regents of the University of New York, also by Hamilton College. The board of education in the city of Troy in 1862 elected him superintendent of schools; in 1857 the University of Missouri invited him to take charge of its pedagogical department. These offers of positions were quickly declined, but were followed by another more honorable, more remunerative, and more congenial to his tastes, namely, the principalship of the Albany Normal School. Meanwhile the Oswego Training School had been adopted by the State of New York as a normal school, and assembled for the first time as a State institution (February, 1866) in the old United States Hotel, purchased by the city of Oswego in 1865 and presented to the State of New York to be used for the purposes of a normal school, with Dr. Sheldon as principal. I remember well Dr. Sheldon's announcement at one of the faculty meetings of this Albany offer. The thought that the Oswego Normal School in the first year of its existence was to lose its principal struck dumb every member of the faculty. The expression upon every countenance was one of amazement and distress. But the suspense was short. Here is Dr. Sheldon's answer, given soon after to the Albany officials: "I have endeavored to put myself in the position of willingness to pursue the line of duty, without any reference to

personal inclinations, seeking simply to know my Father's will, and then do it. * * * I am told positively that if I should leave, all further effort for the Oswego Normal School will be abandoned, and it can not be sustained. I know much yet remains to be done and that there are many obstacles to be overcome in the accomplishment of what we wish to secure for this school. There are others who can do this as well as I, but this makes little difference so long as the feeling is such as it is. * * * It would not be right for me to jeopardize the educational interests here, unless a greater good could be accomplished elsewhere. So far as Albany is concerned, there are many who can do the work there better than I can. * * * I can assure you that this has not been a hasty conclusion. I have carefully and prayerfully weighed the whole matter, and after a severe conflict between inclination and a sense of duty I am led to decline your flattering offer."

So in Oswego he stayed. The Normal School continued to grow in numbers and reputation under its able principal, and it soon became evident that the old United States Hotel building on this lot would not accommodate those who came hither for instruction. So this new building which we occupy to-day, with its ample recitation rooms and well-equipped laboratories, was commenced in 1879 and completed in 1886. Its plan was essentially Dr. Sheldon's. Thus under his leadership the little school that was opened in 1861 with a faculty of one and nine pupils, with no funds, with no building that could be called its own, with one course of instruction, has grown into the present Oswego State Normal and Training School, with its botanical, chemical, physical, zoological, mechanical, and geological laboratories, with four courses of study, English, scientific, kindergarten primary and kindergarten training department, under the instruction of a faculty of 16 teachers, and an income of $25,000 per annum. Many thousands of pupils have received instructions within its walls, and 1,978 honored graduates have gone forth from it. * * * If you should ask me what thought most fully occupied the mind of Dr. Sheldon, what principle was the dayspring of all his actions, the foundation stone which was the basis of all the habits of this just and good man, I would answer in one short, comprehensive word, love—"the love that suffereth long and is kind; the love that envieth not; the love which vaunteth not itself, behaveth not itself unseemly, is not easily provoked, thinketh no evil." He loved God; he loved his school; he loved his family; he loved little children; he loved his fellow-men; he loved his country.

When this building we now occupy was being constructed, one who had long observed the many interruptions to which he was subject, said to him, "Set apart one room where you can go and be alone by yourself, without interruption by scholars or teachers, and do your correspondence there. It will save you much time and annoyance." He did so. The room was named the private office. Notice was given to the students and faculty that they would be invited there when their company was desired. Instead of this being a relief to him, it became a great annoyance. It placed between him and his school a barrier against which his unselfish, generous nature rebelled. He desired to be approachable at all times by those whom he loved, and the private office soon became a thing of the past.

Dr. Sheldon was the most patient man I ever knew. The shortcomings of others did not irritate him or impress him; they only made him ask himself, "What can I do to eradicate the cause of these traits of character?" He always met his pupils with the greatest kindness and courtesy. These qualities in his character were not spasmodic in their action, but were continuous, because they came from the heart. His kindness was proverbial. It attracted others to him. The young delighted to be in his presence. His childlike simplicity in conversation pleased them. He was never "weary of well doing." * * * Humility was ever exhibited in his daily walk and conversation. If others spoke of the importance of his educational work, if they referred to the fact that to him, more than any other, was due the great improvement in the methods of primary instruction in the United States, he would smile happily and probably felt conscious of the truth of the statement, yet pride was foreign to his nature.

Another commendable element ever observable in Dr. Sheldon was sincerity. He was transparent as a statue of glass. He was in every respect just what he appeared to be. His sentiments were never disguised. On all questions in which he was interested he held definite views and expressed them with fearlessness, and yet he was generous to a fault with those who differed from him. He was tenacious of his own opinions, which were formed after the most mature deliberation, yet he was most respectful and tolerant of the opinions of others. * * *

Dr. Sheldon was merciful and generous to a fault. The needy never left his door empty handed. If a student met with misfortune his ear was always turned in sympathy and his purse was opened to relieve his wants. I have known him to borrow funds by hypothecating valuable securities to loan to those who

could give no security but a promise to pay. He was unselfish, disinterested, and ever true to his conscience, a noble specimen of both a man and a Christian, whose deeds and example should be the best inheritance of his children and his students. Conscience was the arbiter of all his acts. I do not believe he ever considered any great undertaking without profound study and humble prayer. If upon mature reflection, after consultation with his friends, an action seemed right, then he favored it, no matter what the result.

Miss Serita L. Stewart, a member of the Oswego school, dwelt upon Dr. Sheldon's influence as a teacher. Recalling her first interview with him when she entered the school, she said:

No student ever came away from that first interview without feeling that Dr. Sheldon was interested in his welfare and that he had one friend in the school. And a friend Dr. Sheldon certainly was to each of us, a friend who was never too busy to listen to our requests or attend to our needs. * * * Many of our memories center about merry times at "Shady Shore." At the time of the ingathering of the fruits the whole school was made welcome to his home, and again in the spring for the planting of the trees on Arbor Day. His cordial greeting, "I am glad to see you here; I hope you will come often," gave its assurance of our welcome. Not the least of our enjoyment came from our surroundings there—the blue lake stretching off into the distance, and the great trees that gave the place its appropriate name, "Shady Shore." The trees were Dr. Sheldon's pride and delight. He had planted many of them and had watched them grow from slender saplings to stately and beautiful proportions. He told us that he always felt like taking off his hat in reverence to a grand old tree.

The influence Dr. Sheldon exerted over his students illustrates in a striking manner the silent force of character:

In the class room [says Miss Stewart] Dr. Sheldon was always the same courteous gentleman, ready to listen to the slowest, dullest student, and so drawing out the best that was in him. It could not but make an impression on everyone—the teacher known and honored throughout the country, with years of experience and thought behind him, listening attentively to the young man or woman expressing more or less crude ideas, and always finding something in the thought expressed that would be helpful to the class; so that when one day he said, "A teacher has need of the greatest patience—yes, infinite patience," we felt that he was the embodiment of that patience. And we knew that all our teaching would be better for having seen this patience in concrete form. * * * Another trait of his character that was shown in the class room was his simplicity. He put himself on a level with his class as a learner with them. Yet he was most truly a teacher and thoroughly impressed on us a sense of the dignity of the profession of teaching. He taught us, too, that all our work should be based on general principles and gave us many such principles learned from his own experience and study. These teachings had an added weight coming from him, for we felt that he knew whereof he spoke.

One lesson that Dr. Sheldon strove to impress upon us was that of faith in the ultimate result of our work, if we were willing to be guided by a higher power than our own. More than once he has spoken of feeling on his shoulder a hand that turned him from the path he was pursuing and directed his feet into another road. Every time in obeying that guiding hand he had found himself in fields of greater usefulness. So he begged us to heed such guidance; not to be fretted or worried when our plans were spoiled and our lives seemingly thrown into confusion. Perhaps this very wrecking of our plans would be but an opportunity for better things.

He taught us, by precept and by example, to have courage in time of trouble and to go on with our work faithfully whatever difficulties came to us. Dr. Sheldon's own serenity and freedom from worry have often been spoken of. That this was not attained without effort we know, for he said more than once that his prayer had always been "Calm me, my God, and keep me calm." In speaking one day with a student he said that he had found it would not do to worry and that he had overcome the tendency to do so. His serenity, then, was the result of victory over himself, and this fact gives us encouragement to persevere in that direction. * * *

Thoughtfulness for others was shown in every action of Dr. Sheldon's, a thoughtfulness that had its root in his sense of justice as well as in love. We knew that he would listen to all sides of a story before giving judgment and that we were safe to have full justice done us at his hands. He did not hesitate to blame him-

self if he thought he had the least occasion to do so. One day he said to his class that he felt that he was to blame for the poor work they had done in a recent examination, for he knew that he had not reviewed them enough. * * *

In his last morning talk to the graduating class last June his theme was love. "Love is the chief requisite for the success of the teacher's work." As he spoke we felt that back of all he said was the man himself, giving depth of meaning to his words. We knew that for each one of us he had the love that "never faileth," that "suffereth long and is kind," and we loved him.

Superintendent Skinner followed with an address on Dr. Sheldon's influence on education in New York State. This influence was exerted through the principles which were embodied in the Oswego School and in his educational works. With reference to these principles, Superintendent Skinner said:

The central thought which moves us now is that he was the first great advocate in this country of the proposition that children should be taught according to certain fixed natural laws which always have and always will govern the development of children and determine their possibilities. Believing in the doctrines of Pestalozzi and Froebel, he was their most distinguished representative in this country and the first to point out the necessity of observing in the training of children certain unchangeable laws of nature which could not be violated without spoiling life. * * * He believed that every child represented nature as much as a tree or flower, and should be studied and taught by natural methods. He believed that education is a growth—a natural development—not adding to but bringing out by proper method that children are not all to be measured by one standard or governed by one law, or their character and usefulness in life determined by the arbitrary rules of per centum calculations and estimates.

He said of his work many years ago: "In this plan of studies the object is not so much to impart information as to educate the senses and awaken a spirit of inquiry. To this end the pupils must be encouraged to do most of their talking and acting." In 1873 he said in an address to the students at the Genesee Normal School: "I may judge your work by a standard which you do not recognize. I can not determine the education of a child by its ability to answer questions in a given way. These answers may be learned from books. Rather let me ask a question to which they have not learned an answer from the text-book and let them give an answer in their own language from their own thought."

Was this the new education? Whether new or old, it worked a revolution in educational methods—in the proper treatment of the children. When the world became convinced that object teaching was related to the happiness of its children, when it was certain that it could not be laughed down nor stamped out, this school and Dr. Sheldon's efforts became centers of observation. They were the Mecca to all teachers who had been led to believe there was a simpler, better way to teach children. His work led educators to give attention, and when they began to think, conviction came. It was not a momentary flash—a passing thought or fancy—but a settled conviction. He was always in earnest, and because he was in earnest he convinced the thoughtful and won victories. He bravely defended the convictions of his own conscience on intellectual battlefields which he never left except as conqueror. Through his work and his influence in first attracting attention to this new principle in the education of children he helped to lay broad and deep the foundations of a system which will never again be questioned or attacked, but which to-day recognizes the power and scope and the possibilities of the kindergarten as a living, vital force in education, and places it within reach of millions of our children. It is no longer an experiment, but a settled fact, and the State now knows what it means to lead children early to think and do for themselves.

Beyond this, the influence which he exerted through all these years has led our educators into other avenues of thought, and the principles which he advocated have developed well-organized plans of investigation. As a result, whatever is practical or valuable in child study and nature study as we find them comes largely through his teaching.

If his influence was felt in the proper education of children from a child's standpoint, so it has been exerted for more than a generation over those who taught the children. In all his teachings he believed that in the development of the true teacher there must be not only broad scholarship and professional training, but behind and beyond all this must be the true spirit of the teacher. He taught his teachers to be independent and self-reliant—to work out questions for themselves and not depend upon text-books. In this way his teachers learned to teach independence and self-reliance to their pupils.

We claim to-day that we have in the common schools of the State better knowledge of real educational methods, a better knowledge of correct educational principles, more teaching with heart and soul in it and less form. If this claim is well founded, we owe much of the excellence of our schools, the spirit of our teachers, improved methods of instruction, to the influence of Dr. Sheldon, exerted upon the men and women whom he taught in this school and whom he led to higher ideals. * * *

He breathed his sympathetic spirit into his books and the influence of his thought and personality went wherever his words were read, and who can tell the power of a written word, conceived in the hope of helping others? Through the printed page he multiplied his influence over teachers and pupils and perpetuated his power. His advanced thought, his clear statement, his mastery of the subject and his conscientious purpose made him as successful in touching the lives of his readers as in personal contact with those he taught. * * *

In the educational associations of the State and country he was always welcome, and took a deep interest not only in promoting their objects but in the discussions which they furnished. Even if his associates differed with him they admired his rugged sincerity, his earnestness of purpose, and the courteous bravery of his gentle speech. He was everybody's friend; he had no enemies in the educational field, and was never provoked in debate beyond the bounds of kindly firmness. The influence which he exerted in these associations was always in the direction of higher standards. His last educational visit was at Milwaukee, where his face, like a loving benediction, smiled upon those who gathered in the National Educational Association, a most familiar figure, and my last look upon my friend was as he mingled happily with the vast concourse of educators which gathered there.

We speak of great centers of light and heat and their influences upon what they touch, upon nature, upon man, and field and flower. Dr. Sheldon was one of these great centers. The light of his life penetrated the atmosphere of many a life which touched his own, and this light will shine on for years and ages and be transmitted to bless generations which he will never see. * * *

His last days were occupied with plans and hopes for further usefulness to the institution with which he had long been identified. If a personal allusion may be pardoned here, let me say that these hopes formed the subject of my last conference with Dr. Sheldon. He discussed plans for raising the standards of admission and establishing a higher course of study with all the zeal of a man who still had faith in the future, and his good heart was full of hope in anticipation of still grander achievements and greater usefulness in his profession. The fifty years which lay behind him were an inspiration rather than a memory. His face was always toward the rising sun.

The place of Dr. Sheldon in the educational world was the subject of an address by Supt. L. A. Jones, of Cleveland, Ohio. He recognized the difficulty of separating the professional from the personal side of his subject, since "Dr. Sheldon's success as an educator was the direct result of his greatness of soul and capability as a man and citizen." Of the philosophical spirit which formed the basis of his work Superintendent Jones said:

Dr. Sheldon cared little for popular crazes in education, but sought that which is permanent. His good sense saved him from the mistakes of erratic enthusiasts.

Froebel founded his theory to a certain extent on a study of infancy: Pestalozzi, upon childhood; Herbart, on youth; Rosenkranz, on the study of the mature man. Dr. Sheldon included in the psychology on which he founded this school the study of man throughout his development from infancy to manhood; and throughout life the best elements of all these systems have been embodied in the philosophy of education practiced in this institution.

A further marked element of strength in Dr. Sheldon's work is found in the fact that in the midst of his educational work he lived an upright life in harmony with the best phases of all the institutions which civilized man has originated for the uplifting of humanity. He believed in the substantial progress of the race and never doubted the high destiny of man. Rousseau, in his fierce fight for the rights of the individual, violated the conscience of his time and broke faith with all the institutions of civilization, in order that he might emphasize the tenets of individualism and the return to nature. Dr. Sheldon recognized what Rousseau never saw, that a return to nature is in fact to be a return to nature under law and order; and that the institutions of civilized life are the most natural things of which anyone can conceive when the nature of man is thoroughly understood. It was the great strength of Dr. Sheldon that he allied himself with all the forces of nature and spirit that make for righteousness and civilization. His great religious nature

came to his rescue at this point. He thoroughly believed that one with God is a working majority. So he planted himself squarely on the double foundation of faith in man and faith in God. He was never afraid that the study of psychology would lead him into untruth, on the one hand. On the other, he never hesitated in his reliance on God's power to lead him to a successful issue and His wisdom to guide to a worthy goal.

A feature of the occasion was the reading of letters and telegrams from all parts of the country and from men in all departments of educational work. In the course of the exercises a pupil of the normal school sang Dr. Sheldon's favorite hymn, "Calm me, my God, and keep me calm," and the ceremony was concluded by a tribute from his pastor, Rev. Mr. Wills, who summed up the lesson of Dr. Sheldon's life in these words:

More than all, he was a loving church member. His love was the very crown jewel of his life. He loved all mankind, following the commandment of God to love his Lord with his whole heart, soul, and mind, and his neighbor as himself. His worship, his religion, was a passion, not a proposition nor a theory. He was a loving member, and that is my message to you.

XVI.—Rev. Samuel Knox.

[By Bernard C. Steiner, Ph. D., Librarian of the Enoch Pratt Free Library, of Baltimore, author of the History of Education in Maryland and in Connecticut.]

Before the Revolution, Frederick County, the far west of provincial Maryland, had resolved to have its county school or academy, but the school's charter, obtained in 1763, was not used for many years. The pressure of frontier life; the presence in the county of so many Germans, alien in race and language to the English, who were dominant in the province; the death of that true friend to education the Manx clergyman, Rev. Thomas Bacon; the coming of the Revolution; the struggles during the period of the Confederation—all kept the project back. At last, in 1797, the plan was revived, a "large and commodious" building was erected on the schoolhouse lot, and on April 5 of that year the trustees advertised for teachers in the new school. They wished to employ "three masters—one of them to teach Latin and Greek, another English, including the mathematics, and a third to teach the German language." "In making choice of masters, the visitors will pay great attention to the credentials which the applicants may produce, respecting their literary talents, mode of teaching, and other necessary qualifications." A month was given to file applications, and, having made choice of masters, the visitors hoped to open the school on July 1.

These sanguine expectations were not quite carried out to the letter. Delays put off the opening until Monday, the 2d day of October, 1797, which is the true birthday of the school. In their announcement of the opening of the new "seminary," the visitors tell us they design "to comprehend a general course of polite and liberal education." They now plan to have four masters, when the school shall be complete, but as yet have engaged only one. This is "Rev. Samuel Knox, A. M., principal and professing tutor for the classical department." The teacher of English opened his department a month later and the teacher of mathematics came in due time, but, as far as I can discover, the academy had been in operation for a large number of years before a teacher of the German language was employed.

The school was not only for the residents of Fredericktown. In the opening announcement we are informed that "Mr. Knox proposes to accommodate a few young gentlemen in his own family." The "few young gentlemen" soon came, and Mr. Knox could boast that he had under him "a greater number of students from the different counties of Maryland, and some from the adjacent counties of

Virginia, than were at that time in the State College at Annapolis," though the latter was "endowed with an annuity of £1,700 and conducted by a faculty of considerable reputation as to literary acquirements." During the first year of the school's activity Mr. Knox held a "public examination of the youth in the Seminary in presence of the trustees and such friends to literature as may honor it with their attendance on the occasion." In addition to the examination, the principal promised those who should attend the pleasure of hearing "a variety of exercises in Elocution" from the students in the classical department.

Let us now turn aside from this flourishing young academy and see who the principal was and why his life is worthy of record. Samuel Knox, the eldest son of a farmer of the same name, was born in the parish and county of Armagh, in Ireland, in 1756. We know nothing of his early life, but I imagine it was a hard struggle with poverty, for he was 33 years of age when he matriculated at the University of Glasgow. He was of Presbyterian stock, doubtless, and had resolved to become a preacher. He was a faithful and diligent scholar, and in the first year of his university course won second prizes for translations from the Greek dramatist, Aristophanes, and "for the best specimens of composition on various subjects of reasoning and taste." In his second year he obtained first prizes for the subjects in which he won seconds in the previous year, and also second prizes for "ethic exercises in Latin," and translations in verse from the Latin poet Lucan. Of his third year's work we know nothing save that on April 10, 1792, Samuel Knox, "Hibernus," received the degree of A. M.

After leaving the university he studied for the ministry and was licensed to preach by the Belfast Presbytery. His restless disposition probably drew him toward the United States as a newer country. For this or some other reason he came to America, probably in the winter of 1794 and 1795. We first catch sight of him in the United States on April 29, 1795, when he produced his testimonials to the Presbytery of Baltimore. The congregation at Bladensburg was then in a distracted condition, and he was appointed to preach there until June. His ministry was evidently successful, for on October 7 he was tendered a call to that pulpit. A minority in the church opposed this step, but the Presbytery thought the call should be presented to Knox. He accepted the call, preached trial discourses acceptable to the Presbytery, and was ordained to the ministry and installed pastor of the church at Bladensburg on November 15, 1795. His ministry there was not a long one, for on April 19, 1797, he applied to the Presbytery for leave to resign his pastoral charge.[1] This was granted, and on May 3 he was dismissed from the church. He may have entered into negotiations with the trustees of the Frederick Academy before this.

Of Knox's activity at Bladensburg we have two evidences—one religious, the other educational. Joseph Priestley had recently come to America, and a discourse delivered by him in the Universalist Church in Philadelphia was printed in 1796. This discourse was entitled "Unitarianism explained and defended," and it aroused Knox's polemic fire. He prepared and preached a carefully reasoned sermon, vindicating "the Scriptural doctrine of future punishment," and prefixed to it "Some prefatory strictures on the lately avowed religious principles of Joseph Priestley." The pamphlet was published at Georgetown, D. C. The "prefatory strictures" are decidedly controversial and thoroughly orthodox, but are not abusive. During his residence at Bladensburg Knox composed his great work, "An essay on the best system of liberal education adapted to the genius of the Government of the United States, comprehending also an uniform general

[1] The Federal Gazette of October 30, 1802, suggests that there was some difficulty between Knox and his congregation.

I desire to express my thanks to Rev. Dr. J. H. M. Knox for searching the records of the Presbytery, and to Prof. Lucian S. Tilton for numerous services.

plan for instituting and conducting public schools in this country on principles of the most extensive utility." (Baltimore, 1799, 173 pages.) He was aroused to the composition of this book by the offer of a premium of $100 from the American Philosophical Society. This prize was offered in 1796 for the best work bearing the title under which Knox's appeared. On December 15, 1797, the society proceeded to adjudge the premium. Feeling perfectly satisfied with none of the essays, the society did not award the full premium, but gave premiums of $50 to the best two essays presented to them. One of these was that written by Knox. In it he claimed that he presented "an entire, general, uniform, national plan, accommodated not only to future improvement in the sciences, but also preserving what hath already been so liberally done in behalf of public education by the United States of America." To the essay he prefixed a memorial he had sent to the legislature of Maryland, and had the book published at Baltimore in 1799. A list of subscribers in the back of the book shows that most of the members of the legislature of Maryland took copies, and that Georgetown, Winchester, Bladensburg, Baltimore, and Alexandria each furnished a number of persons who purchased the book, in addition to a large number of subscribers in Fredericktown. (There were a few subscribers in Hagerstown, Annapolis, Prince George County, etc.) Among the owners of copies of the book we find the name of George Washington. Knox kept some copies of it himself and presented them as prizes to his scholars.

My own copy bears this inscription: "Franciscus Mantz Fredericiensis Academia Alumnus Hoc Præmium, merito, Consecutus est. Die vigessimo quarto Decembris 1800. S. Knox." This work was the first pedagogic work written or printed in Maryland, and in its broad scope had few predecessors in America. It is divided into eleven sections, to which a conclusion is appended. These sections treat, respectively, of the definition of education; of the comparative merits of public and private education; of the importance of establishing a system of national education; of the proper extent of a plan of national education; of the establishment of the various schools necessary to complete a system of national education; of the advantage of introducing the same uniform system of school books into a plan of public education; of the establishment and conduct of the parish or primary schools; of the country academies; of exercises of amusement during the terms of relaxation from study; of the State colleges; and of the national university. His idea was, in brief, that of a national system of public education, with a primary school in every district or township, an academy in every county, a college in every State, and one university near the national capital.

Let us now examine how Knox worked out his great plan. "Education" he defines as "the training up of the human mind by the acquisition of sciences calculated to extend its knowledge and promote its improvement." The advantages of education are self-apparent; without it men "degenerate to a state of deplorable ignorance." The human mind is so formed by its Creator as to be adapted to "a progressive course of improvement." The faculties of the mind without exercise can not become "eminently conspicuous or serviceable." This enlargement, which promotes man's best interests, can only be obtained by education. Education "is not merely the acquisition of a few useful or ornamental arts and sciences." It also "enlarges the stock of man's ideas," causes him to acquire habits of attention and gives the mind "constant exercise in invention, reasoning, memory, and reflection." To sum up the matter, it is "the design of a liberal course of education to call forth all the latent powers of the human mind, to give exertion to natural genius, to direct the powers of taste and criticism, and to refine and polish, as well as exercise, strengthen, and direct, the whole economy of the mental system."

The central feature of any true system of education is the study of language, not only "as it is the great bond of human society, but more especially as the vehicle of instruction and mutual communication." Indeed, it is doubtful whether men would have attained their present stage of enlightenment had there been but one language. Among languages, those should be chosen for purposes of instruction "to which the vernacular is most indebted and in which also the most renowned philosophers, historians, poets, and men of letters have written." In other words, the Greek and Latin languages should be studied next after our own. For those who do not expect to attain to "the highest degree of literary erudition, the mother tongue may be sufficient." To reach the highest degree, it is essential to train the mind by contrasting two languages and by exercising its powers by "translating from one language to another." In the latter task "taste, memory, and reflection are all employed." This study of language should be pursued early in life. "During the childhood of life the faculties of the mind have not attained sufficient vigor or maturity for the acquisition of the higher departments of literature or a close investigation of the more abstruse sciences." These may follow later. Such is his idea of education, but, he adds, there must be both "proper seminaries of instruction" and cooperation from parents, or there will be no success.

He next turns to the comparison of public and private education. "Throughout history nations have supported public education in proportion to their improvement in the arts of civilization and refinement." History shows that public education has produced the best results. From the greater number of pupils under such a system the spirit of emulation is more excited and there is more opportunity for the cementing of friendships. Association with others of all classes of society will prevent a man from becoming conceited. There are more temptations to vice "in the private and retired shades of bad example and domestic indulgence, than in the social scene, bustling crowd, or public assembly." The fact that each teacher has a greater number of students need be no drawback to their advancement. By public education "the best means would be furnished for distinguishing literary genius and merit." This public education should be national. Here is where most nations have failed in the past. Most treatises on education have been theoretical in their character. The actual aid given by the public to education has been devoted to the founding of universities or colleges. "The poor and such as most wanted literary instruction have been left almost totally neglected." A few, indeed, "whom wealth and leisure enabled, might drink deep of the Pierian spring, while the diffusion of its salutary streams through every department of the Commonwealth has been either neglected or considered as of inferior importance."

It is difficult to have a uniform national system, as the United States has a "wide extent of territory, inhabited by citizens blending together almost all the various manners and customs of every country in Europe." The difficulty is only another proof of the importance of the task. No influence would "have a better effect toward harmonizing the whole" in the "combined cause of public virtue and literary improvement" than a "uniform system of national education." This national system ought to have two objects and only two. These are "the improvement of the mind and the attainment of those arts on which the welfare, prosperity, and happiness of society depend." The scope of the system of national education will, therefore, include "every science or branch of knowledge that is indispensably necessary to these important objects." Neither arts nor sciences should be neglected. "Those sciences that tend to enlarge the sphere of worldly interest and prosperity, and without which the various and complicated business of human life can not be transacted," are to be taught, as is also "that refined and sublime knowledge on which the improvement of genius, science, and taste, rather than worldly circumstances, depends." A false and utilitarian taste in

education must be guarded against. Education is not merely "the handmaid of industry;" and a great and prosperous nation such as the United States should encourage polite learning. "Seminaries of learning are the salutary springs of society, and their streams ought to flow not only to an extent, but also with a copiousness proportioned to the circumstances and situation of those to whom their course is directed." Therefore, "ornamental" branches of learning are entitled to patronage. The national educational system "should be adapted to youth in general, whether they be intended for civil or commercial life, or for the learned professions," that of theology alone excepted. Knox would include in his system of public education "a classical knowledge of the English, French, Latin, and Greek languages; Greek and Roman antiquities; ancient and modern geography; universal grammar; belles-lettres; rhetoric and composition; chronology and history; the principles of ethics, law, and government; the various branches of the mathematicks and the sciences founded on them; astronomy, natural and experimental; philosophy in all their various departments;" to which course also, at proper stages, ought to be added "the ornamental accomplishments—drawing, painting, fencing, and musick."

This broad-minded clergyman excluded theology from his national system, as Jefferson later excluded it from his university, and it is possible that Jefferson may have been influenced by Knox here as elsewhere. Knox proposed that each denomination provide its own institution for the instruction of its would-be ministers "in Hebrew, a critical knowledge of the Scriptures, ecclesiastical history, and theology." The exclusion of theology from the national system he justified by the separation of church and state and the existence of different denominations. The separation of theological seminaries from universities would be a benefit to the former, by providing professors and places of instruction possessing "such a solemnity of character as would impress 'the divinity students' with a just sense of their having set themselves apart to be the sacred instructors and pious example of society."

As we have now seen, Knox's ideas of the extent of the national educational system were that it should be "solid and extensive, and that neither should bounds be set 'to the advancement of human knowledge or science,' nor should 'the means of acquiring it' be contracted or circumscribed." All the schools in the system should be regarded as part of one scheme, "no part of which could be neglected without injuring materially the whole fabric." The elementary schools are those in which the education of the majority of the people must begin and end, so these schools, most of all, should receive "the fostering hand of public bounty." To administer the national system, Knox proposes the incorporation of a board of education "under the sanction of the united authority of the States." One or two members should represent each State, and might be chosen either by the national or by State authorities. These members should be chosen "on account of their distinguished literary merit," and should not receive large salaries, as the "honor of being chosen to such an office by an enlightened society" ought to engage the services of able men. This board should be styled the "presidents of literary instruction and members of the board of national education." Their duty "should not only be to preside over the general interests of literary instruction, to digest, direct, and arrange a uniform system in all its parts, and to correspond in such a manner as to support the general and united interests of education, but more especially in their individual capacity to preside with regard to it in those States in which they were resident." At the annual meeting of the board each member should report the state of all the primary or parish schools, the county academies, and State college of his State. He should also preside at the public examination in the last institution.

In each county a county rector should be appointed to assist the State presi-

dent. The rector, who should have a liberal salary and should devote his entire time to the duties of his office, should assist in procuring proper teachers, visit every school once a quarter, and report semiannually its condition and the number of scholars to the State president. Knox thinks it would also be desirable to have the county rectors act as principals of the academies.

To secure good teachers they should be given liberal salaries, provided with commodious and comfortable houses, and promoted from primary to academic schools, whenever deserving such promotion.

In these schools there should be one uniform system of school books, printed by the State printers, under the direction of the national board of education. The selection of these text-books should be one of the most important functions of the national board and they should examine any new ones recommended to them. The national university might well be excepted from this uniformity and the selection of its text-books left to its professors, but this should be the only exception.

The first schools to be established are the parish, or primary ones, to be placed "at a suitable distance from each other and endowed with a few acres of land and a proper house, sufficiently large to accommodate the teacher and the taught." Each school should have provision for 100 scholars and should have a teacher for every 30 or 35 scholars. Knox prefers that the girls be educated separately, under the instruction of the teacher's wife, but acknowledges that this may not be always possible. He thought it "almost indispensable that the head master of every school should be a married man." He should choose his own assistants, but should not fix their salaries. He gives minute directions for the arrangement of the schoolrooms and of the curriculum. "In the primary schools the course of instruction should be confined to a proper knowledge of the English language, writing, arithmetic, and practical mathematics, completed by some approved compend of history and geography." In addition to these, youth should early be impressed "with the principles of religion and morality," but this must be done with due regard to liberty of conscience. A brief prayer at the opening and close of each day's session and the use of a "well-digested, concise, moral catechism may be permitted." Knox's ideas of this last are peculiar and very interesting.

"In the first part of this catechism should be inculcated natural theology, or the proofs of the existence of the Deity from His works. It might, on this head, even extend so far as to show the insufficiency of the light of nature in communicating the knowledge of God, and consequently the necessity of a more express revelation. The second part might properly consist of the first principles of ethics; the nature and consequence of virtue and vice, and also a concise view of œconomicks and the relative duties. The third and last part should inculcate concisely the principles of jurisprudence, the nature of civil government, containing a short historical view of the rise and progress of its various species, and particularly that of the Federal Government of these States."

The interweaving of these subjects, treated in "the most concise and most simple and perspicuous style," into the "most early and general principles of education" is stoutly defended by Knox.

In addition to the prayer and catechism, he recommends that each morning a pupil act as "orator for the day" and read a short essay on some subject calculated "to impress on the tender mind a reverence for the Deity, a sense of His government of the world, and a regard for morals." For this purpose he suggests, not the Bible, but Sturm's "Reflections," then lately translated into English.

Three promising boys at the least, sons of poor parents, should be received free of tuition in each school and educated that they might become teachers.

The next stage in education was "county schools or academies." Their buildings should contain apartments for two masters and their families, two teaching

halls, two dining rooms, and two dormitories. The dormitories and dining halls should be used by the junior and senior students; the teaching halls by the classical and mathematical pupils. At the age of 12 children should be ready for the academies, having previously spent four years in the primary schools, though no one should be admitted without examination. No pupil should be received if over 14 years of age, which fact would spur parents to attend to the early education of youth. In the academy the students should study Latin, Greek, French, mathematics, ancient history, and Greek and Roman antiquities. In the three years' course of the academy the scholars should accomplish what would even now be esteemed a sufficient amount of work to entitle them to admission to a college. Such students as were to discontinue their education as soon as the academic course were completed might continue a year longer at the academy. The rector should give a weekly lecture "on natural, and afterwards on literary and civil, history; on ancient and modern manners, and the conduct of life," and he "should occasionally exhibit that connection which subsists between the several departments of knowledge and the dependence which the highest or most useful arts have on the elementary branches of science."

Public examinations should be held thrice yearly, and prizes should be conferred at these times. Elocutionary exercises should be given at the times of examination. It is interesting to note that no mention is made of educating girls above the primary grade. Of the free pupils in the primary schools, five at least should be admitted into the academy and still further instructed at the entire expense of the State.

In the academy attention should be paid to physical education. In the primary school it may be "most proper to leave youth to the choice of such diversions as were most agreeable to them." But in the academy "even their amusements should discover some marks of their improvement and progress in knowledge." Knox's chapter on physical education is full of common sense. He realizes the use of such vigorous recreations as tend "even to fatigue." The only definite suggestions he makes are that the youth be taught how to swim and instructed in military tactics and the manual of arms.

The third stage of education was to consist of a college in each State, pursuing a uniform plan of education. The existing colleges should be used as a part of the system as far as possible, but the plan must be uniform. Knox also thinks entrance requirements and "prices of boarding and tuition should be perfectly the same throughout the different colleges." Of course, "the claims of natural liberty" demand that the youth have the privilege of "attending any State college the parents might prefer." If, however, the State legislatures were sufficiently jealous of their literary character and sufficiently endowed their respective colleges, Knox thinks that "it would be seldom, except on account of health, that parents would incline to place their sons at the seminary of a different State." The entrance requirements should be as follows:

First. The applicants "should have previously gone through the course of education prescribed by the primary school and county academy, or if instructed by private tuition, that their progress should be equal to and on the same plan with such as were taught at those seminaries.

"Secondly. That none educated either publickly or privately should be admitted but such as on publick examination should give satisfaction, both in their classical and mathematical proficiency.

"Thirdly. That all students in the State college should at least be intended for a triennial course, which, as nearly as possible, ought to be from the close of the fifteenth till the expiration of the eighteenth year of their age."

In the first year of the course the student's attention should chiefly be directed to the Greek, Latin, and French languages, and mathematics. In addition, either

the principal or the professor of classical learning or belles-lettres should lecture "on the history of literature, the manners and customs of the Greeks and Romans, and toward the end of the session on taste, criticism, and composition."

In the second collegiate year the students should continue the subjects mentioned above and "be introduced to a concise view of rhetoric, logic, and moral philosophy." These last he does not count worthy of much attention. The student's time is too precious to be spent in acquiring a knowledge of all the logical laws or forms of the syllogism. A thorough knowledge of Euclid's Elements is preferable to the best system of logic that ever was taught. He thinks scarcely more of the importance of moral philosophy, under which he includes "natural theology, economics, and jurisprudence." This would "afford much entertainment and instruction; but it does not appear that in a seminary of literary education any farther attention to it is necessary than what should inculcate a scientific view of it in all its parts. The study of the various most approved systems of moral philosophy may be more properly assigned to the shades of domestic reading and retirement."

In the second year of the course the students should continue the study of mathematics, especially geography by the use of globes, the laws of motion, the mechanical powers, and principles of astronomy. In the first part of this year the course in "classical reading and criticism" should be completed. Lectures should increase in number and importance as the course progressed. Essays should be written on all the different subjects of study and criticised by the principal and professors. Essays in competition for a prize should be prepared at the close of each session, and the essay obtaining the prize should be "spoken or read in public, before the literary characters of the State, the patrons of the college, and what other audience might be assembled." This would promote emulation.

In the third year, while other branches should be continued, the student should devote his chief attention to natural philosophy. This should be taught experimentally, with suitable apparatus. In connection with this course there should be an observatory and "proper apparatus for making astronomical observations." The emphasis on these things is noteworthy.

For all the students there should be on Saturdays a lecture from the principal in "the common or most spacious hall" on "morals and conduct, illustrating the effects which education ought to have on them." At this time also he should question some of the students as to the work done by them during the past week.

Vacations should not only be for four weeks in the year, as in the county academies, but should continue for the two summer months of July and August, with the addition of two weeks in January. These longer times of relaxation are to be allowed "in order that the students in the State colleges should have time to mix a little in society, see their friends, and know something of the world as well as books." This Presbyterian minister had a remarkable breadth of view in his educational outlook. When we look at the rules of Yale, Harvard, or other contemporary American colleges and see how they have restricted the amusements of the students, we are the more amazed at what Knox has to propose in this matter of amusements. "As the youth advance in years their amusements should proportionally become more manly and dignified," writes Knox, "so that while at this seminary I would have the recreative hours of their first session spent in learning to dance and in acquiring a polished address in conversation and manners." This should include "the proper attitudes, gestures, and actions in elocution." Not only did Knox favor dancing, but also he thought "that the profession of teaching dancing might be extended to a much more important degree of dignity as well as advantage at a seminary of public instruction than it commonly is in the domestic scenes of society." The hours of recreation in the second year should be spent in learning music, and in the third year in learning music and fencing. With such a broad curriculum and competent instructors, Knox "presumed that the student

would, at the expiration of this course, be properly qualified either for pursuing his literary course to the very highest stage of improvement at the National University or to commence his intercourse with the world as a scholar, a man of business, or a gentleman." At the end of three years there should be an "impartial and strict examination in the classics and various sciences," which, having been successfully passed by the candidate, the degree of bachelor of arts should be conferred upon him. No higher degree should be given by the State college.

The capstone of Knox's whole system is the "national university," to be called the "University of the United States." A careful examination of Jefferson's plan for his University of Virginia proves almost conclusively that he was familiar with this chapter and borrowed many features of Knox's plan. He may have owned a copy of Knox's essay. If so, the copy is not in the part of his library contained in the Library of Congress. The idea of a national university may have been suggested to Knox by Washington's desire for such an institution, but the way he worked out that idea was peculiar to himself, as far as I can learn.

Knox mentions that "A great, extensive, and enlightened Commonwealth" can find no better object on which to "exhibit, even to some degree of excess, its munificence than in founding, endowing, and supporting a suitable seat of national improvement in literature and erudition." Attention to this end is more necessary than to "objects of public prosperity in manufactures, commerce, and inland navigation," inasmuch as "the mental powers of man" are "superior to mere bodily endowments and the means of pampering these." But a national university, established without a system of subordinate institutions leading up to it, would have its advantages circumscribed, and the "effects of sending youth to such a seminary without due preparation" would be "vain." This defect has much injured the university system in Europe.

A national university, placed at the head "of a system of national education" such as Knox advocates, and "connected with every branch or seminary of the general system, would tend not only to finish or consummate the whole literary course, but also to confer upon it that national dignity and importance which such a combination of public patronage and interest would justly expect and merit. It would thus constitute the fountain head of science, that center to which all the literary genius of the Commonwealth would tend; and from which, when matured by its instructive influence, would diffuse the rays of knowledge and science to the remotest situations of the United States."

The first point discussed by Knox is the situation of the proposed university. The location should be "centrical and well chosen with regard to healthiness and convenience," at a few miles distance from a great city and "contiguous to the seat of government, in order that the youth, having an opportunity of occasionally seeing the grand council of the nation, should be animated by that patriotism which they in their turn might on a future day be called upon to exercise for their country." It should not be in a great city, for there "abound too many scenes of seduction, too many examples of profligacy, and too many opportunities of vicious corruption." The second subject discussed with reference to the university is its buildings, and here we can see Knox's influence on Jefferson's ideas most clearly. "The university buildings," Knox wrote, "in magnitude and style of architecture, ought to be suitable in every respect to the important purposes for which they were designed and also to the character and dignity of the nation." He enumerates as the principal buildings that will be needed under the general plan: "Proper apartments for the president and vice-president of the university, and contiguous to these a great room or hall for the faculty of professors to assemble in on the business of the university, in which also the students should be matriculated and the several degrees conferred after the proper examination by the faculty."

"There ought to be also a very large and spacious public hall, sufficiently capa-

cious to contain, on proper occasions, all the students of the university, the faculty of professors, and also any respectable assemblage of spectators or audience that might occasionally be introduced."

For each professor there should be provided "a commodious, well designed and fitted out class room, with desk and benches and such bookshelves and other apparatus as would be necessary "during hours of instruction." It will be noticed that Knox seems to have anticipated the seminary library.

"Convenient houses or apartments should also be provided for all the various professors in the arts and sciences, and it might be most eligible that each of their class rooms should be contiguous to or adjoining their private apartments." A steward's house, with kitchens, dining rooms, and lodging rooms, should provide accommodations for the students. Under the steward, who himself was to be "subject to the authority and government of the faculty," there should be a chamberlain, who, "by the aid of his servants," should "keep all the halls, class rooms, and lodging rooms clean, in good order, and supplied in the winter with fire, candles, or whatever else should be necessary."

"The buildings should also comprehend a house for a public library, a museum, and also proper apartments for those who taught the ornamental arts; especially a hall for painting, another for music, and a third for statuary." Knox is inclined to think that it might also be useful to introduce some of the most ingenious of the mechanical arts. He insists on the necessity of employing a university "printer of the very first abilities and reputation," and plans that he should "keep a bookshop, well supplied" with the needful books and stationery. This was the first suggestion in America of connecting a printing press with a university as part of its permanent equipment. He advises the disposition of these buildings according to the following plan: "The front, or elevation, of the university" should contain accommodations for the president and vice-president, the large hall for the faculty, and the great public or common hall. From this front should "extend rearward," "in the manner of wings," the "several professors' houses, with their respective class rooms." They should be at right angles with the main building, and together with it should form three sides of a quadrangle. The fourth side was to be occupied by the library, museum, etc. Within the quadrangle, and "at the breadth of 100 feet from each range of that square," a second "square," or quadrangle, should be constructed "for the accommodation of the steward and chamberlain, the necessary kitchens, dining rooms, and lodging rooms for the students." Jefferson reversed this arrangement. Within this second "square" should be yet a third, "for the accommodation of the teachers of the ornamental arts, with their respective halls, and also for the printing office and bookshop."

"On the most central part of the buildings," either as a part of the third square or at its center, "a magnificent steeple should be erected, with a proper bell. On the top should be a cupola or dome fit for an observatory and sufficiently large to admit of an astronomical apparatus in the first style of improvement." Knox quaintly adds that if the smoke from the surrounding buildings interferes with the central observatory, "the steeple might terminate with a spire" and an observatory might be erected "somewhere contiguous to the university." In the middle of each side of each square Knox would place "a public or common entrance, arched over so as not to intercept the range, and on each entrance an iron gate, to be shut precisely at a certain fixed hour at night." The outside square should have a front gate, "ornamented in a magnificent style, having on the upper part of the gate on each side in basso relievo the arms of the United States." "In the rear of the building" Knox plans for an athletic ground an "ample inclosure for walks and place of recreation for the students." Here also should be a botanical garden, containing a house for the gardener and a "summerhouse hall" for botanical lectures. Near by should be the "chemical laboratory and lecturing hall," which would be

"better secured against accidents" if detached, "than if connected with the university buildings." Knox evidently did not trust the skill of chemical professors. The professors' houses were placed by Jefferson on the inner range of buildings, by Knox on the outer one, so that they might be "most advantageously and comfortably situated," with "respect to gardens and other conveniences," and order could the better be preserved, as these houses would "form an inclosure round the youth lodged in the inner squares of the buildings." No students should be lodged in the professors' houses, that there be no jealousy among the students.

Knox next discusses the university faculty. It should be an "incorporated body," with power "to make laws and regulations respecting the government of the university and for preserving peace and order in all its departments." The professors are to be "amenable to the board of education," and all their regulations subject to the sanction of this board. The professors should receive fixed salaries, that their support might not depend on the "precarious attendance" of many or few students upon their courses. It was obviously just that the principle of a payment to teachers of a sum proportioned to the number of their scholars should not be extended into an institution where it might be necessary to have a competent man lecturing on an unpopular subject. It could be justified, if anywhere, only where attendance on all courses was required.

"The respectable faculty" should be composed of the following officers: A president and a vice-president (Knox does not say whether these might also fill professorial chairs); "a professor of classical learning or belles-lettres and composition; a professor of Latin and Roman antiquities; a professor of Greek and Grecian antiquities; a professor of Hebrew and oriental languages; a professor of rhetoric, logic, and moral philosophy; a professor and assistant professor of natural philosophy; a professor of mathematics; a professor of astronomy; a professor of history and chronology; a professor of law and the principles of government; a professor of elocution and oratory;" the "various professors in the medical department, and also the professors of the various ornamental arts." None of the faculty should be clergymen, or if they were, "they should suspend every clerical function during their being members of that body and devote themselves solely to their office."

In addition to the professors, two chaplains should be appointed annually to officiate alternately on Sundays at services in the public hall. These chaplains should be chosen from the different Protestant denominations (Knox's anti-Romanist proclivities appear here), and Knox suggests that it would be well to appoint young clergymen without any parochial charge, to whom residence at the university "on account of improvement" would be an attraction. "The whole faculty should, with the utmost solemnity, attend on divine service in a body."

Knox now takes up the question of the students. The course of study should be one of three years, leading up to the degree of master of arts. A few free scholarships should be open to deserving and poor graduates of the State colleges. All university students must be graduates of State colleges, except foreigners, who must show "a proficiency on strict examination" equal to that of the college graduates.

In respect to the curriculum, Knox was disposed to allow large liberty of choice. At the beginning of the university career of each student, he or his parents or guardians should give the president some information of his "professional views in life and, agreeably to such information," the course of his studies at the university should be directed. "The useful sciences should occupy the most serious hours of study and the ornamental be attended for the purpose of relaxation." The only particular direction given by Knox with reference to the course of study is that on every Saturday, when the faculty and all the students are assembled in the public hall, and the list of students' names is examined "with regard to con-

duct through the week, three of the students, who had been, in their turn, nominated orators for the day, should deliver alternately from the rostrum, an oration not exceeding twenty minutes in length each, on some literary or philosophical subject of their own choosing." Prizes should be conferred annually on the writers of the best orations. After listening to the orations the students "may be dismissed by the principal," Knox adds, "with an exhortation to good behavior and with prayer."

As to the law school, Knox is silent, and as to the medical school, his only remark is with reference to the requirements for admission. He doubtless felt that his knowledge of these branches of knowledge was not sufficient for him to be as dogmatic as he felt himself able to be in other subjects. Medical students, he advised, should be admitted without requiring a college diploma from them. Students whose views are directed "to the highest attainment in literary knowledge" may be required to have passed through a more "comprehensive and scientific course" than those whose views are directed to a "particular profession." In addition to this consideration, most of the medical students of that day were expected to spend part of their time, before attending lectures, in attending "some practicing physician." Though a diploma might be waived in the case of medical students, Knox was firmly of the opinion that they should not be received if "in any degree deficient in useful or polite literature." Theology should not be taught in the university, and consequently no theological degrees would be given.

This was the plan of a system of national education as developed by Samuel Knox a century ago. He claimed that "under proper patronage and the direction of a well-chosen literary board it would amply provide for the proper instruction of youth in every possible circumstance of life, and also for any particular business or profession." Many details were omitted, but the ground plan was complete. Four features of the system seemed to Knox of especial importance: "An incorporated board of presidents of education," to develop the details of the plan and to "watch over and add dignity to it by their virtue and talent;" the uniformity of the plan, which would produce "not only harmony of sentiments, unity of taste and manners, but also the patriotic principles of genuine Federalism among the scattered and variegated citizens of this extensive Republic;" the institution of a State printer "for supplying the seminaries with the proper authors in each science," and the education of selected youth "at the public expense." Knox calls attention also to the unusual emphasis given by him to mathematics and the sciences. This is indeed noteworthy.

He acknowledges that his plan is not final, and that, if adopted, it will doubtless be found to need certain improvements; but he feels sure that he has elaborated a system "generally suited to the citizens" and one comprehending "every description of situation and circumstance uncircumscribed by partial endowments, local prejudices, or personal attachments."

In referring to Knox's essay, Mr. Sollers sums up the important features of the plan as being: "Schools uniformly graded from the primary to the university, uniform text-books, adequate supervision, fair emoluments for teachers, promotion for merit, and provision for their professional training. To his contemporaries it must have appeared visionary indeed, but along these lines all improvement in public education has advanced from that time to the present date, and on these same lines there is little reason to doubt that future advances will be made."[1]

Outside of its probable influence on Jefferson and on the legislature of Maryland in diverting the public grant from the State colleges to the county academies, we can trace no direct effect of Knox's essay. It seems in some respects singular to

[1] Steiner's History of Education in Maryland, p. 47. Mr. Soller's account, pp. 43-49, was the first to call attention to Knox.

us at the end of the nineteenth century, but it was far in advance of the ideas of the end of the eighteenth century. He was an educational pioneer, crying his message and prophecy into the deaf ears of a careless generation.

The only publications of Knox during his principalship of the Frederick academy which I have found were an Address to the Legislature of Maryland, which he prefixed to his Essay on Education; A Vindication of Mr. Jefferson's Religious Conduct and Principles, and "A funeral oration commemorative of the illustrious virtues of the late great and good General Washington, the father of his country and the friend of man," delivered to a respectable congregation of the citizens of Fredericktown, February 22, 1800. This oration, for which Knox took the text, "All Judah and Jerusalem mourned for Josiah" (II Chronicles xxxv, 24), is in the most inflated and bombastic style, and speaks of the great leader in terms of most unbounded praise. Knox tells his hearers that "the effusive tribute of sorrow this day shed by the assembled millions of this extensive country, while it gratifies the spontaneous dictates of our own hearts, will transmit to latest posterity an illustrious testimony how far republican gratitude transcends the ostentatious blazonry of all the vain funeral pomp in which the useless hereditary despot is consigned to dust and oblivion." In Washington, Knox finds "all that was great and good, glorious, excellent, or praiseworthy" in either Epaminondas or Timoleon, the noblest of the ancients. Providence "felicitated this Western Hemisphere" with the "effulgence" of his endowments, "which shall enrapture the hearts and enlighten the minds of the truly virtuous and patriotic as long as the sun and moon endure." Washington was, however, praised by Knox, not only for his statesmanship and private virtues, but also for his interest in education and the favor he showed the project of a national university. This object, so dear to Knox's heart, was also one to which some of Washington's "last and most fervent recommendations were directed." He desired "the institution of such a dignified national seminary as was best suited to the genius of our Constitution and equally calculated to promote union and harmony of sentiment, as to diffuse the enlightening influence of science to the remotest corners of his country." The failure of Congress to take up Washington's recommendations in this matter meets with Knox's severest censure.

That a Presbyterian minister should publish a "vindication" of Jefferson's religion seems curious enough. The Westminster Catechism and Jefferson's free-thinking ideas were far enough apart. Yet Knox's zeal for the Republican party led him to publish a small pamphlet during the Presidential campaign of 1800, in the endeavor, as he later wrote Jefferson, "in a familiar and popular way to drive your enemies, as the enemies of republicanism, from what they then deemed their stronghold against you." Before having the pamphlet printed, Knox had it read and approved of by a prominent Republican, who did not know the authorship; and John Thompson Mason distributed 100 copies of it when a candidate for Presidential elector. It was afterwards republished, without Knox's sanction, by Pechin, in Baltimore, as an appendix to an edition of Jefferson's Notes on Virginia, published by him in 1800. Pechin calls it a "sublime and argumentative dissertation on Mr. Jefferson's religious principles." (Vide H. B. Tompkins's Bibliotheca Jeffersoniana, Nos. 104, 267.) The title-page of the tract is slightly different, reading, "A vindication of the religion of Mr. Jefferson and a statement of his services in the cause of religious liberty. By a friend to real religion. From envy, hatred, and malice and all uncharitableness, good Lord deliver us!—Lit. of Prot. Episc. Church. Baltimore: Printed for the editor of the American, by W. Pechin. Price, 18 cents." The half title is most truly descriptive of the work, which is the least satisfactory in its argument of any of Knox's writings. The tract was really written that we might find "Mr. Jefferson's services in the cause of religion vindicated." The main part of the argument is that Mr. Jeffer-

son, as the author of the Virginia act of 1776, establishing religious freedom, and of the Declaration of Independence, is "the man to whom the friends of religious society are more indebted than to any other in the United States."

Knox maintains that "we have no concern with the peculiar creed or profession of any public civil character. It is sufficient for us that he is the determined vindicator of that liberty which is not only the best guardian of true religion, but also provides and secures to us the happiness of worshiping God according to our consciences, 'without any to make us afraid,' to tyrannize over our opinions, to trample down that sacred prerogative conferred on us by God." Knox vehemently asserts that Jefferson's tenets as to religious liberty are those of our national Constitution: "Because in his Notes on Virginia he has shown in strong terms that men who embrace the greatest extremes of contradiction in their religious creeds—even those who believe in Trinity and those who do not—or those who believe in one God or those who believe in a plurality, may, notwithstanding, live together in civil and social harmony and happiness, these designing, ambitious sophists and partisans have attempted to give it the worst possible coloring. They forget that our excellent Constitution says, though in other words, the same thing." If it were not for Jefferson and such as he there might still be an established church in Maryland, and his struggles for religious freedom contrast themselves most strikingly with the recognition of the existence of the Protestant Episcopal Church by the Federalist legislature of Maryland in the vestry act of 1798.

Knox now calls to all classes of religious men in turn—Roman Catholics, Protestant Episcopalians, Methodists, Friends, Presbyterians, Baptists, Seceders, and Covenanters—and warns them against interference "with the religion of any man considered as a candidate for any office." The past history of each of these denominations shows to what disastrous consequences does such contemptuous disregard of the right of private judgment tend. Knox holds in the greatest abhorrence "all religious licentiousness—all infidelity in principle or in practice," but he is convinced that "all the clamor and calumny against Mr. Jefferson on account of religion is mere electioneering imposition." The zeal of the Federalists for religion is pretended to "suit some ambitious party purpose." Jefferson expresses himself "in the most respectful manner of God and his holy religion." This fact, Knox maintains, "could only be derived from his acquaintance with and belief in the word of God." Another proof urged by Knox as showing Jefferson's "regard for the word of God" is quite ridiculous. Jefferson has subscribed to "the most expensive and handsome edition of the word of God ever published in these States." Knox's peroration concerning this "hot-press Bible published in Philadelphia" is quite remarkable. He claims, quite seriously, that "many who probably never had a Bible in their families are crying out against Mr. Jefferson for denying the sacred volume, although we find him its public patron, introducing it in its most respectable appearance to his family, and thus giving the most dignified countenance and support to the most valuable edition of the Scriptures ever published in America."

Jefferson's eminent services to his country, his intimate friendship with Washington, his upright life, are all appealed to as arguments to make the Americans grateful to Jefferson. We listen to Knox's fervid words, and we are not convinced. He is out of his sphere, and we feel he has rather vindicated Jefferson's moral character than his religion. Less than two years before he had printed a sermon against the Unitarian, Priestley; now he has a pamphlet in favor of the equally unorthodox Jefferson.

The address to the legislature of Maryland is dated Fredericktown, November 30, 1798, and was doubtless largely instrumental in gaining for the academy that annuity of $800 which it still enjoys and which has been of such essential service

to it. It probably was also the efficient cause of the subsequent course of the legislature. Previously, the State's support of education had been shown in the annual grant of £3,000 to the two colleges which composed the University of Maryland. In 1798 £500 was withdrawn from the grant to Washington College and distributed to several academies, among which was the Frederick County school. Seven years later the State withdrew the remainder of its grant to the colleges. This crippled them permanently and caused them to suspend operations for a time. Prof. Basil Sollers tells us that "the reversal of the policy of the State may be traced without doubt to the efforts of the Rev. Samuel Knox. * * * The policy initiated by the legislature, to which Mr. Knox's memorial was addressed, was so directly in conformity with his recommendations that there can be little doubt that it was the immediate cause of action at this time, though influences were at work which would undoubtedly have brought about the same result at no remote period." Professor Sollers, to whom I am indebted for my first knowledge of Rev. Mr. Knox and for many subsequent kindnesses, calls this address "an able plea for secondary education."

Knox distinctly stated that he does not discuss the "advantages of public education to any community." To dwell on this subject "in the present enlightened age of the world," wrote Knox, "would appear like an eulogium on the benefits of the light of the sun to the solar system." He assumed that the advantages of public education were admitted and tried to answer the question, how that education could best be given. The argument thus begins: All, whether learned or unlearned, admit the "great importance of education." Should not, therefore, all the members of the same community "conspire in bringing into effect some well-digested plan for organizing and establishing that which seems to be the common object of their wishes?"

In Maryland, "though much has been done in behalf of public education," as was shown by the contributions to the State colleges, "yet all that might reasonably be done in so good a cause has not been effected." Hundreds of youths, all over the State, are as yet "deprived of the means of any instruction suitable to the offspring of free and independent citizens." This state of affairs can not be remedied by grants to the State colleges alone. "One or two pompous edifices and expensively endowed seminaries may give a partial and ostensible dignity to the literary character of our portion of the Union; but, in truth, without the means of establishing and providing proper subordinate nurseries of students prepared for entering and attending such dignified seminaries, they may tend to absorb or swallow up the greater proportion of public patronage, but can not, with any truth or propriety, be considered as the most effectual provision for diffusing the blessings of general knowledge or scientific improvement throughout the State."

"The present mode of promoting the interests of public education" in Maryland has not been sufficiently "dictated by the influence" of the consideration that "those means of education which are derived from the industry and exertions of the people" should be "disposed of in such a manner as would most effectually and generally promote the improvement and happiness of the people."

Other States, especially Pennsylvania and Virginia, have outstripped Maryland in encouraging education. Each other State has its college, and so Maryland youth must be looked to as the patrons of the Maryland colleges. But if there are no good secondary schools, how can they be fitted for the colleges? Thus even these latter will be benefited by the institution and endowment of academies.

There must be "public patronage of some general, well-digested system of education," such as Knox describes in his essay, that "the literary character of our State may assume * * * dignity of understanding," "manliness of sentiment," "elegance of taste and criticism," and "scientific illumination." As Maryland's system is not complete, it should at least be increased by the public endowment of

academies. Despotisms have supported colleges alone, but it "would be highly preposterous, repugnant to its interests, as well as obnoxious to the genius of our Government and the spirit of the National Constitution," to support the colleges alone and not to patronize "subordinate seminaries."

The legislature should be careful, however, that "no publicly endowed seminary in this State shall ever be characterized as the nursling, or even distinguished by the appellation, of any particular body of religious professors." "The narrow restriction and contracted influence of peculiar religious opinions or ecclesiastical policies" have "too long and too generally obstructed" the "pursuits of science and literary knowledge," and Maryland should not fall into the error of supporting such an Old World system. If a "particular religious denomination" wishes to have "particular private seminaries * * * most consonant with the spirit of that particular religious system they profess," let them establish them, but also let them support them.

Another important point is "the extent of the plan" on which the State-aided education should be conducted. Here Knox makes a vigorous plea for classical instruction. "A very superficial and contracted plan" seemed then to be gaining ground, and men were already crying out against the "college fetich" of "classical erudition." This, with "its solid and invaluable advantages," has been relinquished by many "for a smattering of French and the accomplishments preparatory for the countingroom. With many it begins to be an object of higher importance to have young master initiated into the science of a smart or graceful air, and all the little arcana of social pertness and confidence, than in the beauties of classical elegance, or the having formed a proper taste for literary and scientific accomplishments. In an enlightened and free State the Graces and Muses should ever go hand in hand."

Polite accomplishments were not the only rivals of classical education. Because some few have attained a high "sphere of excellence in some departments of scientific knowledge," though "untaught by any habits of literary discipline," there are many who favor a plan which "would immediately lead the scholar into the knowledge or study of the sciences without the usual attention either to the classics and ancient languages or even to that elementary preparation on the due attainment of which the thorough acquisition of any science must depend." This error may not seriously injure the more brilliant youth, but those of mediocre parts will suffer. A general system of education ought rather be designed for the great number in the latter class than for the few in the former. Only on a solid foundation can the "extremely diversified endowments to be found in the mental constitution of the youth" be properly developed and made ready to receive instruction in "the more distinguished walks of science." Knox believed that "every part of human knowledge, whether of the useful or ornamental kind, should be patronized with the fostering hand of liberality and care;" but at this time in Maryland "primary or township schools and county academies" most demand attention. Maryland must not "be among the last in the divine work of public instruction," and that this may not happen the "public mind" must "be fully impressed with this truth—that their interest, their character, their freedom, and their happiness depend on the state of the education of their youth." The ignorant are fair game for despots.

If the legislature is inclined to adopt his views, Knox suggests that it require a biennial report from school trustees or appoint a person to inspect the schools and report. If no general system for the whole State be adopted, it would be well to investigate into "the state of literary education in each district or county," to see where new institutions should be established.

Knox recommends that the legislative grant be used for teachers' salaries and

that the people of the township or county be required to provide a proper building. If the legislature provide the schoolhouses, a careless neighborhood might cause them to be useless by neglecting to provide teachers for them. The locality should provide the building; the legislature, making use of the merit system, shou'd confer such a grant on teachers who merited it by "persevering usefulness in their profession" that, with the addition of a "moderate price for the annual tuition of each student," the instructors would have an "adequate salary." Here, as ever, Knox opposes free education as pauperizing, and salaries paid without regard to the number of scholars as corrupting the teachers. The master or rector of each county academy should be ex officio a trustee, and all trustees should be held to a strict responsibility in case of carelessness or neglect. Such seminaries as have been established should at once be patronized, and public notice should be given that whenever the inhabitants of a county should erect suitable buildings for a school or academy on a liberal foundation, the State would lend public aid.

These suggestions are given in case the legislature does not feel it advisable to provide for the establishment of public education in every county by an obligatory act. The last named is what Knox would prefer; but, knowing that there is little ground for being so sanguine, he will gladly accept any advance toward a system of public education.

Such was the memorial Knox submitted to the legislature of Maryland, and probably through the strength of his arguments that body was induced to enter upon a policy of dispersion of its gifts, which had a most important effect upon the educational history of the State.

Shortly after coming to Frederick, on September 27, 1797, Knox was appointed to preach as supply in the Presbyterian Church there. This double duty he performed until the latter part of 1802, though he was never installed at Frederick. At this latter time differences had arisen between Knox and the Frederick congregation, which were brought before the Presbytery, and caused him to cease to occupy the pulpit. I suspect that these differences may have been largely caused by political matters. Knox was an ardent Jeffersonian, while John P. Thomson, who owned the Herald, the local Federalist paper, was a prominent member of the congregation. Knox carried on a violent newspaper quarrel with Thomson, as we shall see.

The success of Knox's teaching was such that in 1799 there were 50 classical students in the academy, as well as 28 in higher English and mathematics, and 35 in the introductory department. The report made to the legislature (November 26, 1799) stated that "from the well-established character of the principal and tutors in said academy and the attention of the visitors and directors in the management of the same, your committee are led to conclude that Frederick Academy, aided by the fostering hand of the legislature, will be rivaled in usefulness by no academy in the State."

This bright prospect was clouded by Knox's inability to keep out of political quarrels. These seem to have begun at the General Assembly of the Presbyterian Church at Winchester, in May, 1800. Knox was a delegate, and when he found that Rev. Jedediah Morse and "a few other influential men" were trying to prejudice the Southern members against Jefferson, he worked against their plans successfully. This, he thought, was never forgiven by the Federalists.

As a result of this controversy a "hostile spirit" against Knox sprang up in the board of trustees of the academy. Hon. Richard Potts and "other highly Federal gentlemen," according to Knox's account, "removed their sons and placed them at Princeton, assigning as their motive that they had been improperly instructed by me." It seems curious to think of boys taken from a county academy and

placed at Princeton, and shows how much college education has advanced in the past century. Injurious rumors spread through Frederick, and, to counteract them, Knox wrote to the faculty at Princeton, asking them to examine the boys from Frederick and notify him how they acquitted themselves. The result of the examination was very flattering, and the Princeton report was that "no youths had ever entered that college who had done more credit to themselves or their instructor."

In spite of these testimonials, Knox's position was not a satisfactory one, and "the desire of being disconnected from such patrons of public education and parents who could so treat the instructors of their sons" caused Knox to give up his position of principal of the Frederick County School.

He had been engaged in bitter political controversy for a year before he left. Entering into local controversies over money voted for roads and such matters, he attacked the Federal newspaper of Frederick, saying it "was full of lies, and no gentleman should support it," and engaged in vehement quarrels with persons whose opinions differed from his own. (Vide Frederick papers of October 2, 16, 30, 1802; January 8, 1803.) He went to Benjamin Ogle's house when he was sick and disputed with him. Knox's rhetorical style is criticised by his opponents in a minute way. (Vide also National Intelligencer of October 1, 1802.) They claimed he was bidding for Jefferson's favor in hope of a place at the National University, and he in return attacked the trustees for not coming to inspect the school. (October 16, 1802, and January 8, 1803, the suggestion was made that Knox wished the legislature to turn out Federal trustees and put in Republican ones.)

Knox resigned the charge of the academy on September 22, 1803,[1] and shortly after that date removed to Baltimore. He seems to have felt that teaching was his proper vocation. It is true that the Presbytery appointed him supply at Soldiers' Delight on April 7, 1804, and that he continued to fill that pulpit for about five years; but, as he resided in Baltimore during that period, he could have done but little work there. After leaving Soldiers' Delight his name almost disappears from the minutes of Presbytery, and he seems to have attended its sessions but seldom.

When the Methodists removed their educational institution to Baltimore, after the burning of Cokesbury, they employed James Priestley, of Georgetown, as principal of the male department. After the destruction by fire of this second building, Priestley opened a private academy on St. Paul's street (then known as St. Paul's lane) and was quite successful. Procuring the support of several prominent citizens of the town, he petitioned the legislature for a college charter, and received it on January 7, 1804. This new college was intended to "stand on a thoroughly unsectarian basis, as to both scholars and professors," and its building was to be erected by aid of a lottery. This seems not to have been a successful financial enterprise at the time; but finally sufficient money was obtained to erect in 1811 a "plain but convenient" building on Mulberry street, where Calvert Hall now stands. The Baltimore College was absorbed by the University of Maryland in 1830, and formed its faculty of arts and sciences so long as that was continued. After some years Mr. Priestley resigned the position of principal on account of differences with the trustees about his salary, and went to Cumberland College, Tennessee. The school, and it was probably never more than a school, was then closed for some time. Meantime Knox had come to Baltimore and opened a private academy on Chatham (now Fayette street), at the corner of McClellan's alley. In 1808 he united his school with another one carried on by Sinclair, and the united school was adopted by the trustees as Baltimore College, Knox being made principal and Sinclair vice-principal. Among the first pupils was John P.

[1] His goods were advertised for sale on October 8, 1803.

Kennedy, who graduated with a diploma in 1812.[1] Knox continued in charge of the school until 1819 or 1820. After he left, Baltimore College was closed for a time, and reopened in 1821 under Dr. L. H. Gerardin.

Knox's Baltimore career was as full of turmoil as his Frederick one had been. Rev. William Du Bourg and his Sulpician Brothers had recently opened St. Mary's University, and this institution, under Roman Catholic auspices, early aroused Knox's wrath. In 1806 a laudatory article on this college appeared in the Companion, one of the Baltimore journals. This aroused Knox's ire, and he sent an answer to the paper at once. This they declined to print, whereupon he took it to another newspaper office, and in the Evening Post and the Telegraph a furious war was waged for several weeks. In his first letter Knox, who concealed his identity, after the fashion of the times, by calling himself "Quintilian, jr.," summed up his objections to St. Mary's University thus: Because its faculty of professors was "self-created or self-chosen;" because it had an "aristocratical tendency," while every college should have its "funds in such a state as to admit to its advantages the youth of those in moderate as well as those in affluent circumstances" (Knox instances the British universities, where he, a farmer's son, had as classmates sons of peers), and because its president and its principal professors were exclusively of one religious denomination. "Pliny, jr.," took the side of St. Mary's and "Luther, jr.," as well as "Lex Talionis," became supporters of "Quintilian, jr.," if, indeed, they were not other pen names for Knox. "Lex Talionis" especially criticises the mathematical text-books published by St. Mary's and the catechism prepared by the Abbé Fleury, which was then taught. The dread of Romanism was a very real one, and the interest in the conflict was such that the newspaper articles were gathered up into a pamphlet of 58 pages and published under the title of "Strictures on the Establishment of Colleges, Particularly that of St. Mary's in the Precincts of Baltimore." Knox was not content with the honors of first "developing to the public" the "Jesuitical spirit" of St. Mary's University, but continued to work against it. It was doubtless largely through his influence, if not in his own words, that there was written the "Pastoral letter from the ministers or bishops and ruling elders of the Presbytery of Baltimore to all under their respective charges, on various duties, but especially on the religious education of their youth."

This pamphlet of 24 pages, which is almost entirely an attack upon Fleury's catechism, was published at Baltimore in September, 1811, and called forth rejoinders at once. Two of these I have seen, and there may have been others which have not come under my notice. The two known to me are entitled "St. Mary's Seminary and Catholics at Large Vindicated Against the Pastoral Letter of the Ministers, Bishops, etc., of the Presbytery of Baltimore" (44 pages, October, 1811), and "Sons of St. Dominick; a Dialogue Between a Protestant and a Catholic on the Occasion of the late Defense of the Pastoral Letter of the Presbytery of Baltimore" (94 pages, 1812). The pamphlet referred to in the second of these was probably by Knox himself and was entitled "A Defense of the Pastoral Letter * * * in Reply to the Vindicators of St. Mary's College." (Baltimore, 1812, 68 pages.)

From this controversy we can easily imagine that Knox would obtain enemies and Baltimore College would suffer, and are not surprised to find him writing in 1818 that "the institution is unable to support itself against such discouragements in any proper consistency with its designation as a college." In addition to this difficulty, the "tide of party spirit ran high" against Knox in Baltimore, as in Frederick. "Not a Federal gentleman would put a son under my instruc-

[1] Kennedy (see Life by Tuckerman, p. 44) draws an unfavorable picture of Knox. He calls him "a large, coarse, austere man, with an offensive despotism in his character, which not only repelled all love, but begat universal fear and dislike among the boys. He was not much of a scholar either, I should say, and was far from successful as a teacher. He had no pleasantries, by the way, no explanations, no appeals to one's own perceptions of an author's merits."

tions." They preferred to send their boys to St. Mary's. There were a few patrons of prominence, among them the famous William Pinkney, and "many youths of considerable promise of usefulness" completed their education in Baltimore College, but the school was not thoroughly successful. Indeed, the city was not enthusiastic over higher education. The influential citizens had never been liberal in their patronage of public education, and some thought it "an obstacle to success in mercantile affairs" for a youth to have a college training. While the State had been under control of the Republicans, Knox had failed to secure State aid, which he had obtained while at Frederick, and after the Federalists regained power he was threatened by a new rival. The "sectarian spirit," which had already caused the Roman Catholics and Episcopalians in Baltimore to have their "favorite seminary," now induced the Methodists, the "most numerous denomination" in the city, to have Asbury College chartered in 1816, and to "manifest their usual zeal and exertion" in its behalf.

With the trustees Knox got along hardly better than with those at Frederick. They thought a building committee or architect or even a carpenter knew more than an instructor of long experience as to how a building should be constructed, and refused to take his advice therein. One of the trustees, a clergyman, had a serious difficulty with Knox because of discipline to which his son was subjected. The reverend gentleman's conduct toward Knox was "malignant and unwarrantable," "malevolent and unjust." The other trustees sided with Knox in this matter, but his position could not be pleasant.

Under these circumstances it is not surprising that Knox should look elsewhere for a situation, nor that he should turn to the university which Jefferson was just founding. When Knox and Jefferson first met is unknown to me. We have seen that Knox issued a tract in Jefferson's defense in 1800. In 1802, during the newspaper controversy in Frederick, Knox had been accused of favoring Jefferson in hopes of securing a professorship in the National University, should such be formed. On January 22, 1810, Knox wrote to Jefferson that he had for some time planned to publish a translation of Buchanan's dialogue, "De jure regni apud Scotos," and asks permission to dedicate the work to Jefferson. Knox wishes to use it as a text-book in civil government. In this letter he claims the authorship of the "Vindication," and apologizes for its issue by Pechin with the "Notes on Virginia," closing the letter with the remark that Knox is one of the multitude who "pray that the evening of your days may be a rich harvest of your pure and invaluable services to your country." (Jefferson Papers in State Department, series 2, vol. 48, No. 80.)

Jefferson answers this letter at length, granting the desired permission, though he has not read the dialogue. He tells Knox that "the boys of the rising generation are to be the men of the next and the sole guardians of the principles we deliver over to them;" that he had "acted through life on those principles of the sincere republicanism I feel in every fiber of my constitution, and when men who feel like myself bear witness in my favor my satisfaction is complete." Jefferson had previously known Knox, for he states that the "testimony of approbation" from Knox is "acceptable and flattering," the "more so as coming from one of whom a small acquaintance had inspired me with a great esteem." He speaks of the trying character of the times "which brought us within mutual observation," and states that he remembers the "Vindication," but neither knew who was the author nor that Pechin had republished it. "Had all this been known, I should have seen myself with pride by your side. Wherever you lead, we may all safely follow, assured that it is in the path of truth and liberty." (Jefferson Papers, series 1, vol. 13, No. 37.) This being the case, and Jefferson having probably read the "Essay on Education," we are not surprised to find that, on planning his new college, Knox was the first man thought of as its principal. Jefferson had in all

probability adopted some features in his plan from Knox's suggestions, and naturally thought of him as the proper person to carry on the enterprise.

So, on July 28, 1817, the visitors of Central College (which was to attain fame under the name of the University of Virginia) agreed "that application be made to Dr. Knox, of Baltimore, to accept the professorship of languages, belles-lettres, rhetoric, history, and geography, and that an independent salary of $500, with a perquisite of $25 from each pupil, together with chambers for his accommodation, be allowed him as a compensation for his services, he finding the necessary assistant ushers." Thus the whole institution was placed under his care, and Prof. H. B. Adams remarks, "Here was theoretical provision for an entire faculty."

For some reason news of this determination never reached Knox's ears, and later in the year 1817 the board receives intelligence that Dr. Knox has "retired from business," and resolves to apply elsewhere for a principal. As we have seen, Knox had not "retired from business," but was still in charge of Baltimore College. In 1818 a friend of Knox fell in with Carr, a nephew of Jefferson, who asked after Knox, and said that his uncle had recently expressed a wish that, if Knox were not otherwise engaged, a place might be found for him in the new university. This conversation was promptly carried to Knox, and led him to write Jefferson on November 30, 1818 (Jefferson Papers, series 2, vol. 48, p. 81). In this letter Knox gives interesting autobiographical information, and asks for a position in the university. He is now a widower, his four daughters are all married, and "more independent" in financial matters than he, so he can say he does "not so much seek emolument as usefulness to society." Though now principal of a college, he would not object to serve as a member of a university faculty, and suggests that he is especially well versed in the classics. It is true he is considerably advanced in life, but his health is good, as is his "capacity for industry and exertion," while his eyesight is such that he can read "the smallest Greek text without spectacles."

Jefferson answers the letter on December 11, 1818. He utters a number of generalities, such as: "Education has been too much neglected in the Southern States. In no form of government more than ours is it true that knowledge is power, and under all governments it is wealth, reputation, and happiness." But he says nothing of any appointment. I can not help thinking that some of Knox's enemies had gained Jefferson's ear, so different is the tone of the letter from that of the vote of the trustees a year and a half ago. Now, Jefferson writes that matters are uncertain; he is too old to carry out his plans, and has left them in the hands of others. (Jefferson Papers, series 2, vol. 48, No. 82.) We feel that there is no hope for Knox here, and probably he felt so also, for he seems to have made no further effort for a position at Charlottesville. After he left Baltimore College he seems to have lived in retirement for some years.

In the early part of 1823 Mr. Knox returned to Frederick and again took charge of the academy. He had recently married, as his second wife, Miss Zeruiah McCleery, of Frederick. She was a Presbyterian, and her "connections" were a "leading part" of that "small society." The pastor of the Presbyterian Church, Rev. Patrick Davidson, was Mr. Knox's associate in the duties of teaching at the academy. The day after Knox arrived in town he opened his department in the school. Shortly afterwards (March 3, 1823) he wrote to his son-in-law, Mr. Archibald George, a Baltimore merchant, that "owing to its being so long mismanaged he found the number of students but small; there is, however, a prospect of this increasing in the spring." Mr. Knox taught the classics only, finding a number of promising youths among his pupils. Mr. Davidson gave instruction in English and mathematics. We are not surprised to learn that the latter was "not able to give sufficient attendance, owing to occasional sickness and his ministerial duties." Knox found his colleague quite congenial, but considered his "talents as a preacher buried in this place." When Knox came, he found Davidson "had

some jealousy lest I should be the means of undermining his interest in the congregation. But I considered it my duty to ease his mind upon that head." Poor Davidson, with a wife "in a very bad state of health," with "a large family," and without "the means of a decent support from the produce of the academy and the congregation combined," we do not wonder that Knox considered him "an object of Christian sympathy." For two years Knox enjoyed the fellowship of this "most pious man and zealous for the cause of Christ," and then was called on to preach his funeral sermon. This discourse, printed at Frederick in 1825, was one which showed how high an esteem Knox had for his colleague, whom he spoke of as one eminent for the steadiness with which he kept the faith. This was not, however, Knox's first printed discourse after his return to Frederick. In 1824 he preached a sermon in the Presbyterian Church on the occasion of taking up a collection in behalf of the Greeks. This discourse was published in Frederick, and the proceeds of the sale were to go to the Greeks. At that time this people were struggling to shake off the yoke of Turkish tyranny, and Knox pleaded their cause in a strenuous and earnest manner.

He said that though it may be that a wise and prudent policy for the Government will cause it to decline national aid or cooperation, yet as Christians and men we should sympathize with the Greeks. The fact that the New Testament is written in Greek and to Greeks, that we should feel sympathy with any nation struggling to become independent, and that the missionaries of the American Board report a growing interest in the Scriptures among the Greeks are among the arguments used by him to arouse the interest of his congregation.

In February, 1825, from one of his letters to Mr. George, with whom Knox kept up a regular correspondence, we learn that he was opposed to our present idea of free education. He had steadfastly favored State-supported education, but was not inconsistent in his opposition to "pauperism schools." His apprehension that an agitation for the establishment of such schools would "terminate in having the annuities withdrawn from this and the other academies in the State" was not the chief cause of his opposition, nor was it that he did not "perceive the ground that some do" for such schools in Frederick, "where common education may be had at the rate of $1.50 or even $1 per quarter." No; he stood out against the "considerable excitement" then prevalent "in Frederick" as to the establishment of free schools on the New England plan, because he thought "it rather of public interest that such a system should be adopted by the State as would render it obligatory on every parent to educate offspring and to consider it as much their duty to labor for the food and nurture of the mind as for that of their body. I believe a parent can be compelled by law, if he has any possible means, to provide sustenance for the life of his child, and I do not see why they should not also be rendered responsible to the State for their proper instruction according to their means." "One thing I am certain of, and that is, that any system calculated to place public education on a degraded foundation will terminate to its injury and discredit, and a spirit for having it conducted on pauperism plans must have this tendency."

Though opposed to free public schools, Knox cherished his plans for national education. It was a subject which had engaged his thoughts for thirty years, and now, in his old age, he still clung to this project, which his essay on education had unfolded. In March, 1826, he went to Washington to talk with members of Congress on the matter. Their views are of interest, especially since in recent years we have discussed Government aid to education through the Blair bill and since we have had a National Bureau of Education without cavil for thirty years. Knox writes to his son-in-law, Mr. George, as follows: "My object in going to Washington was to present a memorial to Congress on an improved plan of public education, which I have from long consideration been induced to believe as much

superior to any yet introduced. I was very attentively and politely received and treated by some of the members individually to whom I was introduced, but they all agreed that public education was a subject Congress could not take up; that it was unconstitutional and reserved as an inherent right in each particular State.

"I took the liberty of arguing the point with some of them in this way: I said that I regretted to have to observe that what tended to the growing opulence and high improvement of the nation in that respect, in as far as roads and canals could subserve the object, nothing seemed to be unconstitutional, but that roads and canals that were absolutely necessary to convey the treasures of wisdom and light and knowledge to the minds of the community at large did not seem to be equally important; that such inlets to knowledge were considered 'unconstitutional.'

"I had an interview with Mr. Everett, of Massachusetts, on the subject, and with Mr. Mercer, of Virginia, one of the committee on the National University, and by the latter was informed that they had determined to take no notice of the subject of a national university, though recommended by the President, and consequently could not promise to support any other plan of public education on the same national ground and views, and that this was left with the States respectively. Colonel Little and Mr. Barney, your delegates, behaved politely and promised to support my memorial were it presented, but this I declined, knowing well that if the subject of the national university was not to be even noticed, though recommended by the President, my memorial could not be sanctioned. I do not intend, however, to give it up. I shall send it on to Governor Clinton, of New York, especially as I am conscious, from long attention to the subject, that it would prove worthy of national patronage." No such paper can be found among the Clinton papers in the New York State Library, and it is possible that it never was sent.

Knox, however, endeavored, to procure aid to higher education from the State, if he could not from the nation, and in December, 1826, sent a memorial to the legislature, accompanying a pamphlet entitled "A brief essay on the best means of promoting the interests of public education." These were printed at Frederick in 1826, and are quite curious.

An analysis of the "brief essay" shows us that Mr. Knox had conceived many unique ideas as to educational methods. The pamphlet begins with a reference to the recent interest in education, especially in its "primary departments," and an expression of thanks to those who have aroused this interest. A law had been passed in the preceding year "to provide for the public education of youth in primary schools throughout the State." By its provisions a system based on that of Joseph Lancaster was established, to be introduced into such counties as should vote to adopt the bill. Though thirteen counties adopted it at once and only six rejected it, the transient enthusiasm for the law soon passed away, and the governor's message of 1828 stated that "the law for the establishment of primary schools, so well received by the people, is believed to be so defective that but a very partial attempt has been made to carry it into effect, and without revision and material amendment it will be useless."

In 1826, however, the failure was yet in the future, and Knox hoped to take advantage of the interest awakened in education through the discussion of the ideas of Lancaster and Bell. The ideas of the former, Knox thinks may have been derived from his essay on education, already discussed by us, as copies of that work were sent to London for sale. Now, however, Knox wishes to put into practice plans which shall deal with liberal education, as Lancaster did with elementary education. Not only the scholars but also the alumni of the institutions should be able to enjoy the lectures of the professors, according to Knox's scheme. This plan he offers first to Maryland, because there "all his dearest interests on earth exist," and he "can not but feel an earnest desire that this improvement should be adopted where he has so long labored, not without some creditable share

of success." He is already uncertain whether the new law is the best measure possible, and suggests that it would have been well to have committees on the Eastern and Western Shores examine existing schools and academies and see how far they were patronized, how many children of both sexes received education there, and what counties and vicinities are most destitute.

"At present," Knox finds, "a spirit of benevolence appears to direct a majority of the citizens of Maryland to the promotion of the interests of public instruction in the humbler walks of society." As we have seen, Knox was no favorer of giving free elementary education to those who could afford to pay for it, and he here declares that "it would appear that every free independent American should be taught to depend on no other individual than himself for the instruction of his offspring, and if systems of pauperism must prevail let these be extended only to the orphan and the unprovided offspring of the helpless widow." If the State support schools, however, for the "attainment of a common course of what is usually designated as English education, brought within the reach of the poorer class of the community, it is not the interest of the opulent only, but the interest also of those in the most discouraging circumstances, that a due attention and patronage be extended likewise to the more advanced seminaries."

If Maryland has no suitable institutions of higher learning, the "opulent" may send their sons elsewhere; but "to what state of degradation this would tend were the sons of genius, though poor, deprived of an advanced course of instruction in their own native State and within their reach." Provision is made for such youths in Great Britain, and "some of their greatest proficients in literature and science and some also of their greatest and most eloquent statesmen and civilians owed all their usefulness and dignified accomplishments to their being so trained and educated." "Public education in any free State can never be placed on any respectable foundation where no provision is made for fostering real traits of genius as they happen to arise in the humblest as well as in the highest ranks of society." Yet but little has been done in the United States in this direction, though a beginning had been made in Maryland by the establishment of eight free scholarships in each endowed academy.

With the existing condition of liberal education Knox is much dissatisfied, especially with the freedom of conferring degrees. He states that these "titular diplomas" which are given, instead of a "just but simple certificate" of the course pursued, can add nothing with the "judicious" to the "interest or credit of public education." "An honest regard to the literary character of the State," he adds, "must elicit the remark that the number of D. D.'s, LL. D.'s, A. M.'s, and A. B.'s at all our collegiate commencements, annually increasing and multiplying, can not fail to render us in the eyes of the learned of the Old World a nation of literary gasconaders. In their advanced seminaries, at some of which from 500 to 1,000 students are numbered at an annual session, not one-tenth of the number as at one of ours receive diplomatic distinction."

To improve the condition of things Knox has two plans—one for the establishment of a "State schoolmasters' college," or normal school, the other for the foundation of a "city institute." Four years before, on September 28, 1822, Knox had published a letter in Niles' Weekly Register, calling attention to the fact that he had conceived the plan for the latter institution and inviting correspondence with any State, county, district, or city which should wish to better its educational system. The "primary schools in each county on eligible and proper regulations, could well-qualified instructors be obtained, might be rendered highly useful and interesting." The greatest defect in the primary-school system in Maryland is "lack of emulation" of teachers, through their receiving "fixed salaries," with no hope of increase. A man should have "compensation proportioned" to his labor; for example, if 50 cents per pupil were given each quarter, teachers

would vie to have the largest schools. Some such system is in existence in Scotland, where the master has the use of a dwelling and garden, as well as a fixed salary and a "small pittance" for each pupil. But should the community consider primary schools "as alone necessary for the promotion of education, * * * they will soon be enabled to discover their error and that nothing could so much tend to establish a monopoly for the affluent to talents and learning and, consequently, of office and place." Teachers must be trained in order to be successful. To obtain best results the State should have "one uniform system" to train up those "either actually employed or to be employed as instructors in the different schools and academies sanctioned and endowed by the State." The trustees and visitors of local schools are often incapable of examining teachers properly, and a State certificate from the schoolmasters' college should admit a teacher to any school. Knox has already written a pamphlet, as yet unidentified by me, on this subject and has distributed copies of it. One of these, given by him to Dr. Mitchel, a United States Senator from New York, Knox thought, may possibly have reached Governor Clinton and caused him to suggest such an institution in his last annual message.

Let us now see what Knox thought necessary for a school, which should place the "profession of public instructor on a more effectual and respectable foundation." There must be "proper apparatus" and a library of "the most approved authors," as well as professors of English, mathematics, the classics, and, probably, modern languages. The school, anticipating the University of Chicago, should be open all the year. During vacations and whenever they could attend, the school-teachers could come and would be greatly benefited, even in a short time at the college. In the intervals of the attendance of the teachers, a number of youths of suitable and promising talents "should be admitted and trained as teachers and bound as apprentices for a term of years." We have come to adopt Knox's position as to the importance of normal schools and agree with him that it is necessary to have an "institution for the express purpose of training up, examining, and approving all to be patronized and employed in the public schools of the State." Like Knox, in later years, we have seen too many instructors of youth springing up "like mushrooms from the very stercorarium of ignorance, and, through arrogance, pedantic vanity, and a little unwarrantable recommendation," seldom failing to succeed in obtaining positions, "even where examiners are legally appointed for that purpose."

The second of Knox's measures was the city institute, or high school, where 600 boys could be taught by a faculty of six—three professors and three assistant professors. If the pupils were charged $3 per quarter, $7,200 would be raised by tuition fees annually. This would be sufficient to pay the salaries of the faculty, and the expense to the public would be merely that for buildings and their maintenance. Knox regrets that he has been unable to put the plan in operation, as no description of it can be fully satisfactory. He gives, however, a diagram of the building. It is 144 by 48 feet, with a back building 48 feet square. The central room (48 feet square) is two stories high and into it open the 6 class rooms, each provided with 10 rows of desks, each row containing 10 desks. The central hall is to be used for lectures, etc.

Exercises and lessons which can be recited without leaving the desks are to be attended to in the class rooms, and in order to avoid the clatter of the boys bringing up their exercises to the instructors there should be placed above each desk an arrangement somewhat like that used in the cash system of department stores and the delivery of books in the Boston Public Library. Thus the exercise books would be brought to and returned by the teacher without confusion. "Tablets for the exhibition, telegraphically, of the different studies" are to be prepared by the instructors, and apparently these were somewhat of the nature of the modern syllabi. These tablets should be printed on the printing press, which was to be

placed in the basement of the building. This press was an essential part of the plan, and could be used for printing text-books, works of the instructors, the best essays of the students, etc. It was the idea of a university press seventy years ago.

There was much that was fantastic in these schemes. There was also much that is in curious accordance with the modern improvements in education. But Knox was only a forerunner who cried in the wilderness. He cried to deaf ears, and the legislature took no action upon his memorial.

His second term of service at the academy ended, like the first, in disagreement with the trustees. After his second resignation from the academy he published his side of the controversy in a "Letter addressed to the trustees of the Frederick Academy" (price 12½ cents, see Frederick Herald, August 25, 1827. I have not seen this tract). The cause of the controversy I have not been able to find. During the early part of his principalship, on May 1, 1824, the visitors (John McPherson, president; William Ross, Frederick A. Schley, and J. Henry McElfresh) published in the local newspaper a testimonial as to the examinations recently held in the academy, in which they said every part was flourishing and they were particularly gratified with Knox's teaching. (The school had a new principal, James J. McNeely, as early as August 25, 1827. The assistants were C. J. Haderman in mathematics, French, Italian, and German, and Samuel Markell in elementary branches.)

Occasional glimpses of Knox after his retirement appear in the newspapers. On September 29, 1827, he advertises that in his "present proscribed condition" he intends to open a private school and will give instruction at night, if 10 apply therefor. On January 5, 1828, he publishes a testimonial as to the excellency of Hubbard's Grammar, and on November 8 of that year he issues proposals to republish a work on "Jesuitical Influence," in four volumes, stating that the people are "Jesuitically applied to for education of their sons," but the real intention is to "make them ultimately vassals to the Pontiff of Rome."

Knox taught a private school for a short time, but he had become an old man, whom the boys cheated in performing their assigned tasks, and soon he retired from his life work. A little bookstore on Market Space, with the sign "Jesuitical and Non-Jesuitical Books," occupied his energies (Recollection of Asbury Hunt). He lived five years more in the western Maryland town, and then died, after a lingering illness, on August 31, 1832, and was buried in the Presbyterian graveyard. His wife, Zeruiah, was thirty-three years his junior and survived him, dying in 1839.

The National Intelligencer of September 4, 1832, spoke of him as "a ripe scholar and worthy gentleman, and highly esteemed by his old pupils and a large number of relatives and friends." He was an educational pioneer, vehement and irascible in manner, firm and persistent in advancing his views. He conceived great plans which he was never to see realized; he was one of those obscure men whose combined effect upon the world's history has been so important. Impracticable as were some of the details of his schemes, he had the wisdom and largeness of outlook which enabled him to make great and far-reaching plans, whose influence was toward the advancement of education.

Tables illustrating the system of national education proposed by Samuel Knox.

CURRICULUM OF THE PRIMARY SCHOOL.

[Four years in length. Children supposed to be from 8 to 12 years of age.]

First year.	Second year.	Third year.	Fourth year.
First rudiments. Large alphabets, letters at least 1 inch long, printed on sheets and mounted on pasteboard. Next spelling tables, and, thirdly, easy reading lessons, arranged as above, the type being gradually diminished in size. First monosyllables, then longer words. Begin reading as soon as possible.	Webster's institutes and vocabulary or pocket dictionary.	Readers; earlier ones without "verse pieces," but selections from the best historians, and from the Rambler, Guardian, and Spectator, arranged according to difficulty. Arithmetic, taught on same system as alphabet and with "blackened board" and slate. Writing; copying approved specimens of letters, bills, deeds, etc. Well-digested compendium of ancient history. English grammar; Ashe's introduction to Lowth's grammar, and Buchanan's English Syntax.	Poetical readers arranged: (1) pastoral, (2) elegiac, (3) didactic, (4) heroic or epic. Explanations by teacher. Composition of letters. Guthrie's General Geography, Morse's Geography of the United States. Use of maps and globes. Modern history. Daily reading of Sturm's Reflections or some similar religious work before whole school.

Prayer at beginning and end of each day. Moral catechism, containing questions on (1) natural theology, (2) ethics and economics, (3) jurisprudence, civil government and United States Government.

No vacation, apparently.

CURRICULUM OF THE COUNTY ACADEMIES.

[Three years' course; pupils from 12 to 15 years of age.]

First year.	Second year.	Third year.
Latin grammar (University Latin Grammar), Corderius's Dialogues; as soon as nouns and verbs are completed, follow (while still studying grammar) with Æsop's Fables and Erasmus's Dialogues. All of these to be read with literal translations, and followed by: Cornelius Nepos. Cæsar's Commentaries. Latin composition, Clark's or Mair's. Geography.	Greek grammar (there should be one with rules in English instead of Latin). Sallust. Livy, "a considerable part." "A little" of Tacitus. (Those who are not to go to the university may substitute French for Greek in this year.) Rollin's Ancient History. Goldsmith's Abridgment of the History of the Grecian and Roman Republics.	Combine Greek and Latin writers (Latins close imitators of Greeks), as follows: {Bucolics of Virgil. {Idyls of Theocritus. {Odes of Horace. {Odes of Anacreon and Pindar. {Georgics of Virgil. {Works of Hesiod. {Æneid of Virgil. {Iliad of Homer. One or two plays in each language. French begun for classical students. Rhetoric.

Military drill and athletic exercises run through the entire course.

In mathematics, use of globes, elementary astronomy, plain and spheric trigonometry, algebra and conic sections, Euclid's geometry. Half of each day given to these studies. More mathematics to be given to those not going to college.

Occasional lectures from the rector on natural, literary, and civil history, ancient and modern manners, and the conduct of life.

Four weeks vacation; one in January, one in May, two in August.

CURRICULUM OF THE STATE COLLEGES.

[Three years' course. Pupils from 15 to 18 years of age.]

First year.	Second year.	Third year.
Greek, Latin, and French read with a view to criticism rather than to the acquisition of the language, which has probably already been done. Critical essays. Mathematics, e. g., mensuration, surveying and navigation, gunnery, and fortification. Lectures on history of literature, manners, and customs of Greeks and Romans; taste, criticism, and composition. Dancing.	Completion of classical reading and criticism. Essays criticised by professors. Rhetoric (brief course). Logic: Locke's "Essays on the Understanding," Bacon's "Novum Organum." Moral philosophy: Natural theology, economics, and jurisprudence. Mathematics. Geography by use of globes, laws of motion, mechanical powers, principles of astronomy. Music.	Natural philosophy, with experiments. Astronomy, practical. Mathematics completed. Classics completed. Belles-lettres completed. Fencing.

On Saturday, lecture by president on morals and conduct, and public examination of scholars. Vacation of two weeks in January and two months (July and August) in summer.

XVII.—Andrew J. Rickoff.

On March 30, 1899, died at Berkeley, Cal., Andrew Jackson Rickoff, A. M., Ph. D., one of the most noted city school superintendents of the United States. He was born August 23, 1824, near Newhope, N. J., a small village lying between Trenton and New Brunswick. His parents removed to Cincinnati, Ohio, when he was only 6 years of age. Here he attended the public schools till his older brother became a teacher, after which he remained under his tuition, except for short intervals, until he entered the high school to fit himself for Woodward College. Having completed the studies of the high school, and fairly entered upon the collegiate course, he had to withdraw to enter upon the career of a teacher, which he followed from that time on. He was then less than seventeen years of age. With so limited a preparation for his duties, he had to work hard through many years of private study to round out his education, after he had begun his labors in the schoolroom. He thus became a self-taught man in the best sense of the word. But having a strong constitution he was able to do an amount of work which very few could have accomplished. For years, during this period of life, he was accustomed to allow himself but five hours a day for sleep, retiring to his bed at 10 o'clock and rising to recommence his studies at 3 the next morning. While thus supplementing his own education, he never permitted himself to go before his classes without so thorough a review of the subjects before them that he was able to conduct their lessons without reference to the text-books. Thus he acquired the reputation of an indefatigable laborer in whatsoever was set before him to do. By such untiring application he won from the Ohio State University at Athens the degree of A. M. Later, after his great success as an organizer and manager of schools, several colleges conferred upon him the honorary degree of Ph. D.

Such in brief was the career of Mr. Rickoff as a student. As a teacher his history may be presented in chronological order, as follows: He commenced teaching in 1840, and after being engaged for two or three years in the country schools near Cincinnati, he was invited to take charge of the schools in Portsmouth, Ohio, as superintendent. Here he remained five years, at the end of which time, August, 1849, he received an appointment as assistant in one of the public schools of Cincinnati, the same that he had attended for a while when a boy. Here he served

as assistant one year, at the expiration of which he received an invitation to return to his old position at Portsmouth. He declined, however, and accepted the principalship of the school in Cincinnati in which he was then teaching. This post he held a little more than two years—that is, until he was elected superintendent of all the schools of the city by the board of trustees and visitors, he being the first one to receive such an appointment from that board. The two superintendents who had preceded him had been elected by popular vote. Having filled this office five years, he resigned to establish a private school for the sake of the better income it afforded. For the succeeding nine years (1858–1867) his attention was mainly confined to this work, though he still remained upon the board of examiners of teachers for the city. In 1864 he was elected to represent the First Ward in the city board of education.

The following year, on the retirement of Hon. Rufus King, who had occupied the chair for fourteen years, Mr. Rickoff was elected president of the board. Before the year was ended he removed to a country residence, by which he became ineligible for another term, and thus his official connection with the Cincinnati schools came to a final and honorable close.

As a member of the board of education, as well as when acting in the capacity of superintendent, Mr. Rickoff always advocated the largest freedom for teachers in the instruction and discipline of their classes, and in the discussions of the board he maintained that teachers were the only proper examiners of those who sought to enter their profession. As the chairman of the committee on text-books and course of study, he gave much of his time to the unification of the system, some particulars of which had been left incomplete at the time of the reorganization of the schools, and when elected to the presidency of the board he was requested by unanimous vote to reappoint himself chairman of the same committee. This he did, though contrary to his own wishes, as well as to the rules of the board.

In the exercise of his duty as president, Mr. Rickoff took special care to appoint large-hearted and able men on the committee on salaries—men who would not hesitate in adopting a generous and liberal course toward the teachers, and whose influence in the board was powerful enough to carry through any measure of which their judgment might approve. The Hon. S. S. Fischer, afterwards Commissioner of Patents at Washington, and the Rev. Henry M. Storrs, the most eminent divine then occupying a pulpit in Cincinnati, were the leaders. In a short time the committee submitted a scheme proposing a very liberal increase in the pay of teachers. This was the beginning of a general advance of salaries in most of the cities and towns of Ohio and other Western States. The schedule then adopted has stood with hardly any change from that day to the present time.

In July, 1867, without Mr. Rickoff's knowledge or consent, and during his absence from the city, the board again elected him to the superintendency of the schools, the proposed salary being more than double that which he had previously received. Shortly after his return home he declined this flattering offer, and advertised the reopening of his own school for the following September. But in less than six weeks thereafter he was offered the superintendency of the schools of Cleveland, Ohio, at a salary of $4,000, more than twice the salary then paid by any city having a population less than double that of Cleveland. This offer Rickoff accepted, and he filled the office for fifteen years.

Supt. Aaron Gove, of Denver, speaks of this period of Rickoff's life, saying:

> I remember how overwhelming was my admiration for the painstaking and careful study which he had daily given to the manipulation of the great educational machine of that city. His work was scarcely accomplished when, in the unthankfulness of the American community, he received an intimation that his services were no longer needed; and when, in 1882, Mr. Rickoff left the Cleveland schools, he laid down the task of a life that has never been excelled in efficient execution in the history of the schools of our country.

Shortly after his resignation in Cleveland he received and accepted an offer of the superintendency of schools in Yonkers, N. Y., at a salary of $4,300. Finding, after one year's service there, that the onerous labors attending the superintendency interfered too much with the literary work he had taken up and desired to pursue more exclusively, he tendered his resignation, which, at his earnest solicitation, was finally accepted, with the understanding that he should, by his counsel and advice, aid the board in carrying out the many changes in organization and reforms in methods of instruction which, on his recommendation, the authorities had already inaugurated.

In the winter of 1849-50 Mr. Rickoff became a member of the Ohio State Teachers' Association, and was elected to the presidency of that body in 1855, presiding at the sessions held in Cleveland the following summer, and in Columbus in the winter of 1856-57. He became a member of the National Teachers' Association in 1859, and was elected to its presidency the same year. He presided at the session of 1860, held in Washington, D. C. For a number of years he was president of the Ohio State board of examiners of teachers, which had been established by legislative enactment for the purpose of examining and issuing life certificates to those who, by their scholarly attainments and success as teachers and superintendents, had won the right to such honorable distinction.

As a member and as chairman of executive committees, Mr. Rickoff has had great influence in directing the proceedings and molding the character of the educational associations with which he has been connected. For many years he was a member and regular attendant upon the meetings of the Round Table Convention, as it was called, which was composed of a very limited number of city superintendents, among whom were J. L. Pickard, of Chicago; Dr. W. T. Harris, then superintendent of schools in St. Louis, and John Hancock, of Cincinnati, Ohio. It was the custom of these gentlemen to meet annually in one of those cities, or at some intermediate point, for the purpose of discussing the educational problems of the day more fully and freely than was possible in the larger assemblies of their profession. The Round Table, so called—it was without constitution or by-laws—derived its name from the fact that the meetings were held in the private parlors of the hotels at which the members were staying for the time. All reporters were excluded from their meetings. Many a vigorous educational germ was sowed by the Round Table, for to the thorough and exhaustive discussions of this association, ranging over almost every point of school organization, instruction, and discipline, the uniformity, high standing, and progressive character of the Western schools may, in a great measure, be justly attributed.

Mr. Rickoff was never satisfied with what had been attained in educational affairs. During an active service of more than forty years as teacher and school manager he was an unflagging student in all matters pertaining to his profession. His private library was one of the most complete educational libraries of the United States. As he put it himself, "he was a skeptic in education," believing that the practical results of the present systems of public and private schools are far from what they should be, and being always hopeful of the future, and always pointing to better ways and improved methods, he was recognized for many years as one of the foremost among the educational reformers of the country. On this point the following extract is quoted from the History of Education in the State of Ohio, published by authority of the general assembly, 1876:

No man in Ohio has studied more thoroughly the classification of schools, and done more during the last twenty years to bring about the degree of perfection, which has been attained in the present system of grading, than Mr. A. J. Rickoff, now superintendent of the Cleveland schools. Mr. Rickoff's attention was called to this important subject when, in 1854, he was superintendent of the public schools of Cincinnati. Soon after he entered upon the duties of his office he made a report on the expediency of organizing grammar schools as a part of the school

system intermediate between the district and high schools. * * * In this able report he defines classification to be the arrangement of pupils, according to proficiency and capacity for study, into grades, classes, or divisions. That system of schools is most nearly perfect which enables us to secure the nicest classification. It is at once the most economical and the most efficient. The most economical, because it gives the greatest possible number of pupils to the teacher; and the most efficient, because it gives to each pupil the greatest possible share of the teacher's time and labor. In accordance with this plan, which differed in many points from any then existing, and on his recommendation the grade known as the "intermediate in the Cincinnati schools" was established. So perfect were the grading and classification of these schools at this time that hardly a single important change has since been found necessary.

Previous to this reorganization the principals of the schools had been required to employ all their time in the instruction of the first or highest grade. Thus they were effectually excluded from any supervision of the work of their assistants, and the result was that unity of purpose and action was found to be quite impossible. Hence, in the general changes of the Cincinnati school system, which Mr. Rickoff recommended, the principals were relieved of the charge of the A class and made the local superintendents of their respective schools. Since that time the plan has been adopted in almost all the large cities of the Union. In the discussion which led to its adoption in Boston, it was justly called the "Cincinnati plan" by Superintendent Philbrick, who warmly favored it.

When Mr. Rickoff became superintendent of schools in Cleveland, he gradually reduced the number of men principals till there were only three left, whom he raised to the rank of supervising principals, or assistant superintendents. For principals of buildings he chose women. But while the assistant superintendents had to perform many administrative duties, they could not well go into the minutiæ of teaching and aiding the teachers in their work in the class room. This led to the appointment of departmental supervisors in Cleveland. Supervising principals were appointed for primary work, drawing, music, German, penmanship, etc. Mr. Rickoff said, in his report of 1871–72, regarding the choice of women principals, as follows:

I am gratified to report the continued and even increasing success of the experiment of putting women at the head of all the grammar and primary schools. * * * It can not be denied that our schools are more efficiently governed and more thoroughly taught than when there was a man at the head of every house. The improvement in respect and attention paid by the older pupils to their teachers is remarkable. Classes of boys, corresponding to some that in times past drove one principal after another from his post, are to-day so quiet, orderly, and studious that it is often wondered that their predecessors should have ever given any trouble. This is true, not of one school alone, but of every school formerly distinguished for its insubordination. What physical force failed to control, subtler influences have completely mastered. It might be supposed, as, indeed, it has sometimes been asserted, that the more equable and thorough government of the schools to-day is owing to greater watchfulness on the part of the superintendent and his assistants to check the first signs of insubordination in the senior classes, and to the greater severity exercised in cases of discipline; but the fact is, that fewer scholars of the advanced grades are referred to the office, and that less rigor is necessary than formerly. The more tidy and tasteful schoolrooms occupied by the higher classes, the cleaner halls, the better-ordered school premises, the quieter neighborhoods display the exercise of that faculty which belongs especially to refined and educated women, to so direct the minor details of school government that the control of masses seems so easy that it requires little or no effort. Men, relying upon their strength to suppress disorder by the display of force, are not so watchful to prevent, nor has habit made them so keen to detect, the incipient steps of misrule; hence it is that they are more frequently compelled to resort to the rod, while with women, of the class of whom I have spoken, its necessity seldom or never suggests itself. * * * There was one consideration, not without weight in the discussion, which preceded the adoption of this scheme of reorganization, the wisdom of which is demonstrated in the experience of other cities. The principals of schools not infrequently manipulate ward caucuses to secure the nomination of friends for boards of education, in order that they may them-

selves secure a tenure of office entirely independent of their merits as schoolmasters. In some cities the legislation of the school authorities is controlled by their employees, and those who have the appointing power are themselves the creatures of those who hold or who seek appointment.

Naturally this did away with the rod in school, but a new problem arose. Despite the refining influence of women there are unruly elements in every school, unsafe companions, which must be weeded out to secure perfect order and undisturbed peace. This problem Mr. Rickoff solved by establishing two unclassified schools, to which were referred morally unsound, insubordinate, and other unsafe boys. In this he followed the example of superintendents in Germany.

Speaking of the school organizations of the United States, Sir Charles Reed, chairman of the school board of London, England, who was at the head of the educational commission which came to this country in 1876, reported to the council at home "that no single city of the United States was superior to Cleveland."

Mr. Rickoff gave much study to school architecture, the warming and ventilating of schoolhouses, etc. Accordingly, he was authorized by the Cleveland board to make the floor plans of six of the largest school buildings, which were erected within the last six or seven years of his administration, the Central High School being among the number. All these plans included also plans for warming and ventilating. Of these, the French commissioners visiting Cleveland reported to their minister of public instruction that they greatly preferred them to the schoolhouse plans of Boston, New York, and other cities, and reiterated their judgment thus: "We do not hesitate to put Cleveland in the lead in respect to schoolhouses." For these plans Mr. Rickoff was awarded a medal and a diploma at the Centennial Exposition. The plans of these buildings have been extensively copied in different parts of the United States and in some other countries.

This sketch of the educational services of Mr. Rickoff, brief as it is, would be notably unjust if it failed to show his relation to the recent reforms in teaching that have for years deservedly excited attention. What he did in improving the organization of the schools, the schoolhouses, and his enduring influence in the association of teachers, all this is but a small part of the real work of Mr. Rickoff as a school superintendent. His greatest merit lies in his success in raising the personnel of the teaching force. He always held that the character and the work of the teacher is the vital element in school management and education. His lovable ways, in which he aided the teachers under his supervision to a higher level and to a better appreciation of the children under their care, will never be forgotten. Many teachers remember how manfully he stood up in their defense and how modestly he allowed others to reap public commendation for ideas and actions suggested by himself; how gentle he was in judging human failings, both in teachers and pupils, and how courageously he fought corrupt politicians who intended to use the schools as a fit place to reward political services. He rarely used the daily press, but when he did, it was with telling effect. The teachers always felt that in Mr. Rickoff they had a shield that would protect them against attacks from the board of education, from the parents, or supervising principals. The most astonishing conversions from irate parents to devoted friends of the schools took place in the old office on Superior street and, later, in the old office building on Prospect street. To see mothers or fathers enter Mr. Rickoff's office, fire and brimstone ready for use, and shortly after leave it, smiling shamefacedly, thanking him warmly for the interview, to see such scenes, as the writer often saw there, was a revelation of Mr. Rickoff's character. When his buggy appeared at a school and his tall, erect form entered the building, it was as though warm sunshine had pierced the clouds on a cold, wintry day. Teachers and pupils felt better for having had a glimpse of their beloved superintendent. He was very observant and saw many schoolroom details which might have escaped others, but never did he fall into the error of humiliating a teacher before her

school or before her colleagues. Before he finally decided that a teacher was not a fit person to keep in the schools he attempted, by transfers and by placing her into other environments, to save her. His judicious grouping of teachers enabled the principals often to carry along a weak teacher who, by private counsel and good example, succeeded in mending her ways.

In cases of contention between principals and teachers, or parents and teachers, he always succeeded in making both see that every question has at least two sides.

Numerous anecdotes might be quoted which bear witness to his success as a superintendent, but space does not permit. By means of teachers' meetings, and through the visits of departmental supervisors, he introduced new methods of teaching and new ideas and principles into the schools long before the educational press of the country began to advocate them. In a special report made to the Cincinnati board of education, more than thirty-five years ago, he set forth the theories and methods of what is now called the new education. He did this with a completeness, and advocated them with an ardor and directness, seldom met with, even to-day. He did not, however, present any theory or practice as having originated with himself. He uniformly supported his recommendations by many quotations from the writings of eminent educators in this and foreign countries, and especially reenforced reason and authority by references to the methods already prevailing in many of the best schools of Europe. His intimate acquaintance with prominent cultured Germans (such as Judge Stallo, of Cincinnati) enabled him to gain access to the methods of teaching in central Europe.

The report mentioned was very much in advance of the times when first made, but all the methods set forth in it have been practically realized to a greater or less degree in Cleveland, and hence it is that Mr. Francis W. Parker, who has done so much to promote improvement in the methods of instruction in the United States, said in a letter to Mr. Oliver Arey, then principal of the Cleveland Normal School:

> It affords me great pleasure to inform you that the so-called and miscalled "Quincy methods" were obtained or first seen by myself in operation in the Cleveland schools. I was then a teacher in Dayton, Ohio, and, entirely dissatisfied with the work done there, I set about its reform. I visited Cincinnati and Cleveland, and in both cities, especially in the latter, I got the suggestions which started me off in better work. I saw in your city freedom in primary classes, grouping the little ones in small classes, script work on the blackboard, and life. I was fortunate enough to be one of the beginners of this work in New England; hence the talk of "Quincy methods." I claim nothing new whatever. I give my teachers freedom and let them work out their own salvation. I hold the Cleveland schools to be, if they have gone on in the same way, which they must have done under the best superintendent in the United States—Rickoff—the best in the country. You can learn nothing in Quincy.

In the year 1877 Mr. Rickoff and Dr. Harris, of St. Louis, Mo., were solicited by Messrs. D. Appleton & Co. to prepare a series of school readers. This being done, the series was issued two years afterwards. In this work Mr. Rickoff was greatly aided by his wife, Mrs. Rebecca Davis Rickoff. To her he confessed his obligation for much of his success in the direction of the work of the primary schools which came under his management. He said that to her he owed the development of that which is best in the practical application of school methods.

When Mr. Rickoff left Cleveland in 1882 he was speedily offered a position as superintendent of schools in Yonkers, N. Y. He accepted, and remained there for a number of years, chiefly engaged in preparing a text-book of arithmetic for Messrs. D. Appleton & Co. and other literary work.[1]

In 1888 he took charge of Felix Adler's school for workingmen, which was established in 1880, but his health gave way, not having been robust for some

[1] Many of the foregoing statements are gleaned from Educational Notes, issued by Messrs. D. Appleton & Co.

years. The accidental and most deplorable death of his young, hopeful son, William Monroe Rickoff, who was engaged as engineer on the Northern Pacific Railroad and was at Seattle at the time, and the death of his wife a few years after, were shocks from which he could not recover. He sought relief in the salubrious climate of California, and gradually withdrew from all efforts until, in March, 1899, at the age of 74, he paid the tribute to nature due her from all that is mortal.

He left two daughters—Mrs. Hinkley, at present a teacher in Cleveland, and Miss Bertha Rickoff, in Berkeley, Cal. His remains were brought to Cleveland, where they were interred in the family burial place in Lake View Cemetery.

At the funeral services held over the remains of Dr. Rickoff his lifelong friend and coworker, Dr. W. T. Harris, now United States Commissioner of Education, made the subjoined remarks, which are particularly interesting as coming from one who is perhaps best qualified to measure the value of the deceased leader's work in education:

Mr. Rickoff came into the work of superintendent at the beginning of the second period of city schools in this country. It was the period of the revival led by Horace Mann and his coworkers; the era of the introduction of skilled supervision and the organization of school systems.

Hitherto each school had worked by itself in isolation, and consequently had developed extremes of pedantry in methods of instruction and harshness, or even cruelty, in modes of discipline. The instruction was a mechanical affair. Memorizing of the text-book without mastering its meaning, obedience to school rules, not from good will and insight into their reasonableness, but solely from fear of flogging—this was the staple of the city school 1800 to 1850. Indeed, nothing better could have been expected, for the city school was then new, because cities were new and furnished new problems.

The new era in city schools began after the famous dispute of Horace Mann with the Boston schoolmasters. It was powerfully helped by John D. Philbrick, who superintended the Boston schools for twenty years. But the method of instruction did not change so rapidly, even in Boston. More progress was made in the West, and especially in Ohio.

Mr. Andrew J. Rickoff was the greatest pioneer in the movement toward bettering the methods of instruction. His career as teacher is, when understood, a new revelation of Christianity made especially to the school. It reached the school in the great epoch of which I have spoken, and in which Andrew J. Rickoff bore so conspicuous and noble a part; for he was permeated with love for the children, and he sought to introduce methods of development from within in place of harsh methods of compulsion from without.

Dr. Rickoff developed his theory of a new education partly in the work of conducting a private school and partly in the conduct of systems of city schools—in Cincinnati, Cleveland, and in Yonkers. Constant progress was made in the improvement of instruction by which pupils could be aroused to study through their own interest and to push their investigations into the meaning of what they learned with that spirit of inquiry which promised to make them students through life. It was during his stay in Cleveland that the superintendents of the larger cities of the West formed what was called a "Round Table." This was one of the most profitable of school conferences ever held. Mr. Rickoff held a high place at that Round Table by reason of his immense experience, his great practical skill in solving educational problems, and by the charm of his personality.

In his later career Mr. Rickoff was seconded and assisted by his enthusiastic wife, who devoted herself to the methods of instruction in the primary school.

In the family, as in the school, and as in the society of his friends, Mr. Rickoff was ever the kindest and gentlest of men, the tenderest father, the best of neighbors. I never knew that he had a single enemy. I think that he was beloved of all.

The significance of his life appears in stronger lines if we place it on the background of our national life. We are solving the problem of local self-government. We never could achieve that solution if we depended solely upon the police and a system of spies. We can solve it only by a system of development of public opinion and the participation of all the inhabitants in this public opinion.

Such a public opinion requires the newspaper for its creation and diffusion. Again the newspaper requires the universal diffusion of the knowledge of the printed pages. Not only must all read, but all must read day by day the events of the world and the opinions of their fellow-men on those events. All help make

the verdict of public opinion, and all are governed by that verdict when made. Even governments that are well-nigh despotic in their form of organization are forced in our day to watch public opinion as it is revealed in the newspaper and follow its behest rather than appeal to the decision of war.

Is not this a movement toward a realization of Christianity? Reason and not force is gaining its hold on the helm of the world. But public opinion of the nation can not penetrate an illiterate community. It learns too late that it has appealed to force against overwhelming odds.

In the newspaper civilization not only the statesman but the humblest citizen reads the decision of a great issue as it were on the sky in great blazing letters—as it were a Belshazzar's vision weighing it in the scales of public opinion and proclaiming it to the world before it comes to the test of war.

Mr. Rickoff has helped his community and his nation in making the school of the city into a great instrumentality that fits the citizen for a government of and by public opinion.

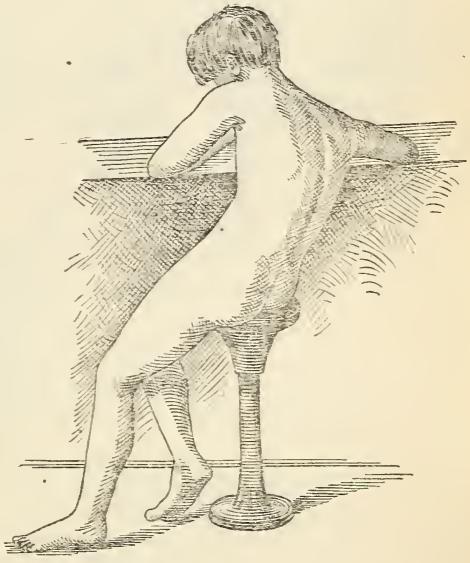
We, his friends, regret our loss of his personal presence, but we rejoice that he has fought a good fight and lived a life of faith in the new dispensation.

I love to quote the words of the prophet Daniel at the grave of a great teacher: "The teachers shall shine as the brightness of the firmament, and they that turn many to righteousness as the stars, forever and ever."

XVIII.—SCHOOL SEATS.[1]

BY E. H. BRADFORD, M. D., AND J. S. STONE, M. D., BOSTON.

As it is often asserted that school chairs furnish one of the influential factors in the development of lateral curvature, a careful study of the proper form of school chair deserves and has received much attention. The results, however, are neither as satisfactory nor conclusive as is desirable, as the seats supplied in our schools are not always suitable.



Faulty attitude in sitting.

The movement for reform in school furniture may be said to have begun with the publication, in 1841, by Barnard, of Hartford, of his classic work on school architecture. Preceding this publication there had been, however, considerable discussion of the subject. About ten years earlier, in Boston, Dr. John C. Warren and Dr. Alcott, and, in New York, Mr. William J. Adams, had begun to advocate the use of sloping desks of proper heights, the separation of the seats from the desks behind, and the use of individual seats with backs.

The use of seat backs began about fifty or sixty years ago. Then followed the introduction of separate seats, and later, at about 1850, the separate desks and chairs were first used. Attention had also been directed to the horizontal "distance" between the back of the desk and the front of the seat.

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[1] Read by title at the annual meeting of the American Orthopedic Association, 1899. Reprinted from the Boston Medical and Surgical Journal, October 5, 1899.

Although a "minus" distance in which the desk overhangs the seat was advocated by some, yet Barnard and Alcott believed in a zero distance, which was, however, a step in advance as compared with the former "plus" distance of several inches.

Barnard was the first to make definite measurements of children of different ages, and to devise from this a scale for the height of the seat and desk. In 1863 Fahrner, of Zurich, published the first European scale. There have since been published in this country the Whitcomb and Bobrick scales, while in Europe the Frankfort scale, published in 1885, and the scales of the Prague and Vienna commissions, published in 1892, are the most important. Much attention has been given to the various scales, according to which fixed furniture is constructed and by which adjustable furniture is fitted. Being based on different series of measurements of children of different nationalities and classes there have been considerable differences in the results. Moreover, different standards are taken as the basis from which seat height and desk height of adjustable furniture are computed, as, for example, in one scale knee height and in another total height is taken as the basis.



Attitude commonly assumed by weak-backed children.

While the scales have served a very useful purpose in bringing about more accurate fitting, according to averages, they can not, of course, compare for accuracy in special cases with individual measurements made, for instance, in the school measuring chair, devised by Dr. Hartwell, in which at one sitting all the required measurements are easily read off. In the use of individual measurements, particularly in weak children, and in children above or below the average of those of the same age, and in careful attention to the seating of such individuals, much good may be done, although at present the universal adoption of complete individual measurements can scarcely be expected.

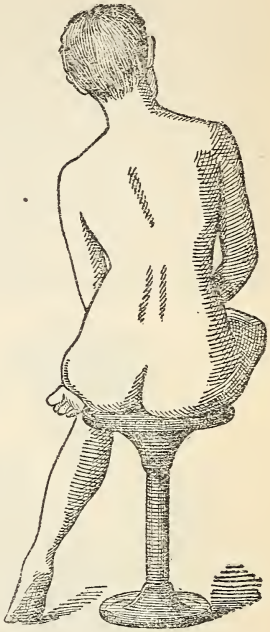
At the same time that so much was being done in the development of various scales there were introduced many different kinds of adjustable furniture, both desks and chairs.

The problems of desk construction are, according to Cohn, (1) to secure such a "difference" in height between the desk surface and seat that the elbow with the arm hanging naturally just reaches the desk, which brings the book at the proper distance from the eye; (2) to secure such a horizontal "distance" between the seat and the desk, that the body and head may not be inclined forward too far in order that the eyes may be near enough to the desk; (3) to have a proper slope to the desk surface. For purposes of reading the ideal slope is 45, because then the eyes can be directed downward without fatigue and without bending the head forward. Such a slope, however, is not practicable for writing, and therefore, as a compromise, a slope of from 1 in 6 to 1 in 10 has usually been adopted.

Modern construction in all adjustable desks meets the requirements of proper height. The problem is simple, because there is no need of automatic change.

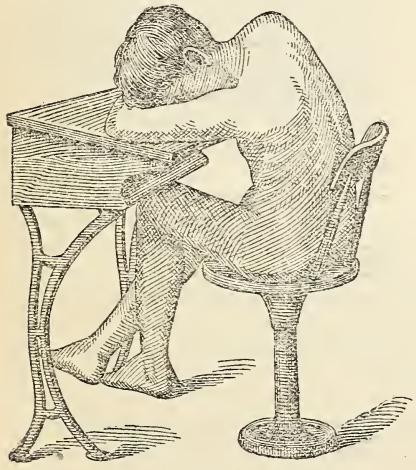
The need for automatic change by the scholar in the horizontal distance between the desk and seat has been met in two ways—first, by movable desk tops, and second, by movable seats. Of the movable desk tops there were two types. In one the surface is divided transversely, so that one part may move upon the other, usually the posterior part folding over on top of the anterior, as in the desk devised by Parow in 1865.

There are also a great variety of mechanisms by which one half of the desk top slides upon the other. Some are comparatively simple, some are rather complicated, most of them, as of the folding type, are not used because of the break in the writing surface. Some obviate this difficulty by making practically the whole of the desk surface movable, leaving only a small portion at the forward edge fixed, thus approximating the type in which the whole desk top moves. So much weight has been attached to the importance of a movable desk top by Lorenz and Cohn, among others, that much attention has been paid to perfecting the mechanisms by which the desk top as a whole is moved.



Faulty attitude.

Some of the folding and some of the sliding desks meet the third requirements of desk slope by making a change at the same time that they change the distance, so that for reading there is a positive distance with an increased slope, while for writing there is a negative distance and a decreased slope. The Simplex desk of Schenck deserves particular attention. In it the "distance," the "difference," and the slope are all altered automatically by a very simple mechanism.



Faulty attitude from too low desk and stool.

By a simple mechanism also in the modern Chandler desk the slope and the distance may be changed together or independently as the scholar wishes. A certain amount of instruction and care is, however, necessary for the intelligent use of a desk of this sort, which is not necessary for those of the simplest construction.

Of course in the difference in height and the horizontal distance between the seat and the desk the chair must also be considered. Thus many adjustable seats have been made at the same time that the desks were improved. It is now universally recognized, in regard to the chair, that the height of the seat should equal the length of the leg from the sole of the foot to the under surface of the thigh when the feet are placed squarely upon the floor and the knee is bent to a right angle. It is generally agreed that the seat surface should slope slightly from front to back so as to counteract the tendency to slide forward, but not slope so much as materially to tilt the pelvis if the child sits sidewise in the seat. The

length and breadth of the seat should correspond roughly to the dimensions of the thighs. A seat of insufficient depth can cause no particular harm. A seat of too great breadth allows, while one of too great depth compels, bad postures. The last requirement is, as stated by Hartwell, that "the seat should be provided with a back that shall support the sitter's back whether he be quiescent or actively engaged, as in writing or drawing.

Adjustment for height is a comparatively simple matter. In some cases it is secured by adjustment of the foot rest, but now all modern seats have simple adjustments in the castings.

In order to obtain an adjustment for distance from the desk several types of seat have been made. As examples, Beyer devised one in which the seat slid on its supports. Wackenröder one in which the seat slid forward and back together with its supports, and Hippauf one in which the seat, by a parallelogram motion, could be moved forward and back upon its support like an inverted pendulum. In each of these the seat back was attached to the front of the desk just behind and therefore was available only with a "plus distance." The same was true of the seat of Wandenesch, which secured a plus and minus distance by eccentric rotation on its support.



Faulty attitude from too low desk and stool.

Various folding seats, such as the "Columbus" of Ramminger, secured the change of distance merely as an aid in getting in and out of the seat. Many modern seats have fixed adjustments for distance, but in most cases where an automatic adjustment is sought for it is obtained through a movable desk top. One seat in particular, devised in Copenhagen, deserves attention because the height of the seat, the distance from the desk, the depth of the seat, and the height of the back can all be changed automatically at the same time. The supports at the two sides of this seat are split from above and in front diagonally downward and backward, so that as the seat is raised up by notches it also moves nearer to the desk. The back also is drawn nearer to the desk as the seat is raised. The construction is, however, rather awkward. In some of the Bobrick chairs a similar mechanical principle is applied to the back, although the adjustments are not automatic. There have been a considerable number of seats constructed for home use which are adjustable in all their parts, so that they may be used alike by small and large children, but these are all rather too awkward for school use.

The great problem of chair construction has been the back. Meyer, in 1867, was among the first who carefully studied the question of seating and the mechanisms involved. In the sitting posture the weight is borne principally on the tuberosities of the ischium. When the center of gravity, which lies in front of the tenth dorsal vertebra, is exactly over a line connecting the tuberosities the body balances without muscular effort. If, however, the body inclines forward the center of gravity falls in front of the tuberosities and must be supported by

the under surface of the thighs resting upon the front of the seat. If the body inclines backward, there must be some point of support behind the tuberosities, and this is found in the coccyx. If, however, the body leans either forward or backward, then the weight must be supported by complicated muscular action unless some additional means of support is furnished. The chair back gives this in the backward position. In the forward position the body drops forward, according to Fehrner, by a series of jerks until the weight is caught by the elbows resting upon the desk. In the forward position there is a decided tendency to vicious attitudes, the tendency being to hang the body from the shoulders rather than let the arms hanging from the shoulders rest easily upon the desk. In the prevention of bad attitudes in the forward position the size of the chair seat, the "difference," the "distance," and the desk slope are of considerable importance, as well as the chair back.

In maintaining correct attitudes in the backward position the chair back is of the utmost importance. As recognized by the Vienna Commission, there are three



Faulty attitude at school.



Ill-fitting desk and stool.

types of seat backs. The first is the low pelvic support, the second the lumbar, the third the dorsal. These, of course, may be combined.

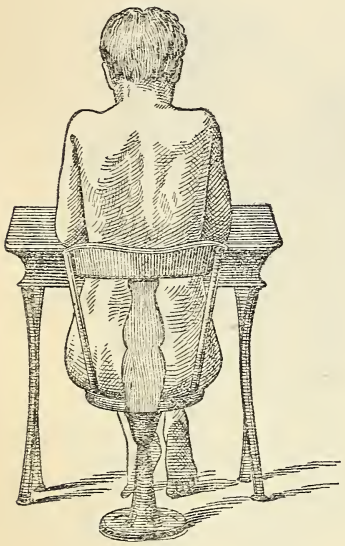
Meyer favored the pelvic support because by fixing the base of support for the whole spine it favored an upright position. He considered the last vertebra the most advantageous point of support. Though regarded by him as unnecessary there may be added a dorsal continuation of his back support, short and at the same time inclined very sharply backward. Cohn and Hermann agree essentially with Meyer. Meyer objected very strongly to any high straight back because it forced the child to slide forward on the seat.

Through the work of Lorenz and Schenck the reclining seat back is now generally used with an inclination averaging about 10 degrees. Both of these authors advocate writing in the reclining position, Lorenz at first advocating a desk slope rather more steep than experience has shown to be practicable. Lorenz and Meyer insist much more strongly than Schenck on the necessity of having a firm lumbar support. Many seats have been constructed with a lumbar support alone, having in view as the main object the maintenance of the normal lumbar curve. One

back deserving particular mention is that of Holscher, in which two supporting pads, a transverse lumbar and a perpendicular dorsal, are placed upon an upright rod, the whole inclined backward and adjustable for height.

In spite of all the work which has been done in regard to the chair backs they still remain the weakest point in even the best of the modern school furniture built in this country. It is evident that children with strong backs can get on with no support, especially if the sitting hours are properly regulated, but weak muscles are not uncommon among school children, and the best possible support should be furnished. Such support is given by a chair in which faulty positions would be less comfortable than correct ones. Children require a change of position as a relief, and it is desirable that such a change be furnished without tempting the child to attitudes in which the back is less favorably supported.

If children seated, but tired of sitting, are watched, it will be noticed that they either lean upon the desk or slide down upon the chair, to take as far as possible a reclining position, to relieve the downward pressure upon the pelvis and the strain upon the lumbar ligaments and fascia, or by twisting the trunk and sitting to one side or the other, relieving one set of muscles temporarily at the expense of a strain of the others. The photographs taken by Scudder in the public schools show admirably the faulty positions assumed as a result of fatigue and improper seating. Although these positions may be assumed without harm for a short time, yet if constantly taken, a habit is developed dangerous in growing children.



Ill-fitting desk and chair.

The danger from leaning upon the desk is minimized by a proper construction, properly adjusted height and slope of desk, which with a sufficiently narrow seat will diminish the tendency to a twisted position of the trunk, particularly if the height of the seat is properly regulated. Here also the general introduction of vertical script has been of marked benefit.

The tendency to slip down in the chair and to assume an inclined position is but imperfectly met by foot rests and by hollowing the seat so that the buttocks do not readily slip forward. The tired child will instinctively attempt to assume an inclined position as a relief. This should be made possible as far as practicable without depriving the child of the support that is desired in the lumbar region.

A series of back tracings in various sitting positions shows the great change occurring in the lumbar curves, and the need of firm lumbar support. Whether the child slides forward on the seat in a reclining position, or leans forward on the desk, or simply doubles up and holds the book in his lap, the normal lumbar concavity is replaced by a convexity. When the child slides forward and then leans back, the lower lumbar convexity is less marked, because in this position the pelvis becomes fixed when the coccyx touches the seat, but at the same time the head is carried forward by an increased upper dorsal convexity. Leaning forward on the desk diminishes the normal dorsal convexity, although the lumbar convexity is as marked as in other bad positions. It is essential for a suitable school chair that it should furnish support in the lumbar region; that it should

not press the shoulders forward, and that a change from a vertical to an inclined position be possible without a loss of lumbar support.

With a view to allowing a change from an upright to a reclining position, Miller has constructed a chair on entirely new lines. The chair of Hippauf, already mentioned, had the seat attached to the base by links, parallel and of equal length. Miller substituted iron castings for the wooden links, made the front one much longer than the rear one, and placed them at such an angle that they diverge several inches at the top. Thus this chair gives what no other chair has ever given—the ability to move forward into an upright and well-supported position for writing and the ability to slide away from the desk a few inches into a well-supported reclining position for reading.

The back of this chair, which is at slightly more than a right angle with the seat, carries two transverse supports, a lumbar and a dorsal. Each is adjustable for height. The former can be moved forward and back as well.

These adjustments in the back are a great gain over the ordinary chair back. Another marked improvement is seen in the modern spring-back typewriter's chair, having a back support adjustable for height, and at an adjustable angle with the seat. The latter mechanism is in some ways more satisfactory than the back of the Miller chair, which, however, has the advantage of a forward and back adjustment of the lumbar support.

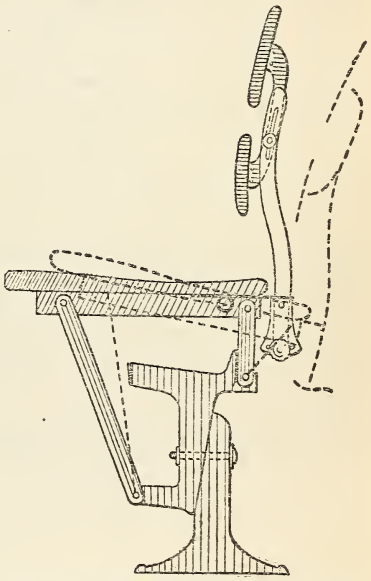


Diagram of modified Miller chair, allowing change of position without loss of back support.

By combining the seat and castings of the Miller chair with the spring back, and by replacing the two adjustable pads of the Miller chair and the single pad of the typewriter's chair with a combined dorsal and lumbar pad, swinging like a mirror with the long arm uppermost, the advantages of each are secured. In such a combination chair there are secured four automatic changes, by far the most important being that from the upright to the reclining position; second, that in the distance from the desk; third, that in the angle between the body and thighs; and, fourth, that in the back supports to conform to changes or individual variations in the curves of the spine.

There are other fixed adjustments, one of importance being that for seat height, and others being for height and angle and strength of spring of back supports. In ordinary use all of these adjustments might not prove necessary, although those least simple are the ones in actual use in the very popular typewriter's chair.

In the combination proposed there are secured automatic changes in distance from the desk and in the position of the body as a whole. There are also possible automatic changes in the back supports. At the same time the lumbar spine always receives firm and the dorsal spine sufficient support, no matter what the occupation of the scholar. The fact is recognized that improper attitudes result from fatigue, and that fatigue must always follow any attitude, no matter how satisfactory in itself, which is long maintained without change.

XIX.—ADDRESSES BY RIGHT REV. JOHN LANCASTER SPALDING, BISHOP OF PEORIA.

The American Patriot.[1]

Love of country, like all love, springs from a desire for life, for wider and richer life. Life is possible only through communion with what nourishes it, with what is not itself. We see ourselves in the image reflected from the world on which we look, as by a mirror. We are what we are by virtue of the thousand influences which have acted upon us—our minds have been fashioned and colored by sun and moon and stars; by the vestures with which earth clothes herself as the seasons change; by rivers, oceans, and mountains; by books we have read; by work we have done; by games we have played; by the good and the evil which have befallen us; by the men and women we have known, admired and loved, or feared and hated. All that we have seen, felt, suffered, and done has helped to make us what we are. For good and for ill we are bound to the universe, and apart from it we can neither know nor love nor enjoy. Stars whose light no human eye has beheld help to hold us where we are; grasses and trees that flourished before man ever trod the earth form the soil by which we are fed, the coal by which we are warmed and ministered to in a hundred ways. Nothing exists or lives in isolation, and as insight increases the perception that all things are in union and intercommunion with one another grows clearer. It is only in the lowest stage of thought that objects seem to stand out in separateness, apart from their relations. When we look a little deeper we see that certain relations at least enter as essential elements into all ideas of the objective world, and that all things are interdependent, are a system of forces moving and acting in unison. When we look still more profoundly we perceive within and beyond the world of relative things the independent being who is life and mind, the absolute and eternal, creative energy, God, in whom and by whom the universe exists, who is Himself self-determined and self-active.

Hence the radical impulse in the craving for richer and wider life is a godward impulse. What we really long for, whether consciously or not, is divine life, immortal life, and we need no other proof of this than the unsatisfactoriness of all, even the highest achievement. Nothing once attained corresponds to the dream which lured us to the pursuit, whether it be wealth or power or fame or pleasure. When we seek ourselves through all the mazes of matter, we may end weary and satiated, but not satisfied. God alone is the infinite other whom we need to fill and complete our lives. Hence religion is and has been the inexhaustible fountainhead of self-devotion—of the self-devotion of patriots and heroes, of saints and artists, of wives and mothers; for whoever loves truth or justice or beauty or goodness with a surpassing love, with a love which endures all things, braves all things, renounces all things, if only it may attain its end, can not but be inspired, strengthened, and upheld by an enthusiasm which must be called religious. By such men barbarous tribes have been led to higher planes, States have been founded, just laws decreed, tyrants overthrown, and the arts and sciences created. For this reason epochs of religious earnestness are epochs of advancing life; epochs of religious skepticism and indifference, epochs of decadence. There may still be, indeed, a gloss, a glitter, a polish, a material prosperity by which the frivolous and thoughtless are misled; but the power of heart and hope, whereby man lives and is strong, is failing. Will is enfeebled, character is undermined, and there is a general falling away in thought, in language, in manners, in conduct, even though it be so gradual as to be imperceptible to the careless eye.

[1] An address delivered at the Crève Cœur Club banquet, in Peoria, February 22, 1899.

LOVE OF TRUTH AND JUSTICE.

There is a higher love than love of country—the love of truth, the love of justice, the love of righteousness; and he alone is a patriot who is willing to suffer obloquy and the loss of money and friends rather than betray the cause of truth, justice, and righteousness, for only by being faithful to this can he rightly serve his country. Moral causes govern the standing and the falling of States as of individuals, and conquering armies move forward in vain; in vain the fleeting fabric of trade is spread if a moral taint within slowly molder all. The national life is at fault if it be not in harmony with the eternal principles on which all right human life rests. The greatest and the noblest men, when they meet, rise into regions where all merely national distinctions are forgotten and transcended. In studying the works of a philosopher, a poet, or a man of science we give little heed to what country he was born and lived in, so eager are we to learn the truth and beauty he reveals—truth and beauty which are of no country, which are wide and all-embracing as the universe. In the presence of heroic virtue, also, the national limitations disappear, that the god-like man who belongs to all countries and ages may stand forth in his proper light. A man supremely endowed narrows his mind when he is less than universally human. What he says and does should make laws for all—those diviner laws which have their sanction in the common sense which makes the whole world akin. Patriotism as understood by the ancients is but a partial virtue. When it is most intense, it is most narrow and intolerant. In Jerusalem, in Athens, in Rome, the city was the fatherland. It was the thought of Zion and of "Siloa's brook that flowed fast by the oracle of God," of the Acropolis, with its marvelous setting in the midst of the Attic plain, of the world mother looking from her Seven Hills on the Tiber's tawny wave that made the exiles waste away with repinings for home, and their passionate devotion to their country was rarely separable from a hatred of the foreign nature. Whoever was not a citizen was an enemy or a slave. The captive foe was treated with pitiless cruelty and the slave had no rights. We are separated from these ancient patriots less by the long lapse of time which has intervened than by the difference of spirit in which we look upon and love our country. For us the man is more than the citizen, humanity more sacred than nationality. To lead a man's life, one must live for some one or something other than self. As we can see ourselves only in what is other, so we can find and love ourselves only in what is other than ourselves. To escape from the starved condition of the isolated, the individual is impelled to identify himself with larger unities—with the family, with the State, with mankind, with God. Now, for the ancients the State was the ultimate unity in which a man could find and feel himself; hence their aims and sympathies were partial and narrow. Their patriotism was more intense, but it was less rational, less moral, and therefore less enduring and less beneficent than ours. It was not possible for them to identify themselves with the race, to recognize that all men are made of one blood, and that whenever one suffers injustice wrong is done to all. But for us nationality has ceased to be the limit of individual sympathy, and the oppression of peoples, however remote, often affects us as though we ourselves had been injured, while noble words and heroic deeds, wherever and by whomever spoken or done, fill us with enthusiasm and gratitude. Many causes, of which the Christian religion is the deepest and most far-reaching, have led to the wider views and more generous appreciativeness of modern men. In looking to the one heavenly Father they are drawn together and held by ties, consecrated by faith, and approved by reason. Science, which deals with laws that are universal, that act alike upon the farthest star and the grain of sand at our feet, on the race as on individuals, promotes this catholicity of feeling and interest. Our machinery, too, in bringing the ends of the world together, facili-

tates the intercourse of the peoples of the earth and thereby weakens their immemorial prejudices and hatreds. The commercial interdependence of the nations has a like tendency; while the constantly increasing influence of woman makes for a larger sympathy and love. No great movement can now long remain within the boundaries of the nation in which it originates. The questions of education, of labor, of the rights of woman, rouse attention and discussion in every civilized country. A new discovery or invention is at once heralded from land to land. The telegraph and the printing press mediate a rapid and continuous interchange of thought throughout the world, and thus help to make us all, in a way never before possible, citizens of the world.

TENDENCY OF THE MODERN AGE.

At the present moment America, if simple truth may be uttered without incurring the suspicion of conceit, represents the general tendency and sentiment of the modern age more than any other country. Here the national feeling is larger and more hospitable than anywhere else; here men of all tongues and races more easily find themselves at home than anywhere else. No other country is so attractive, no other affords in such fullness opportunity for self-activity in every sphere of endeavor, no other insures such complete civil and religious liberty. Nowhere else is there so much freedom from abuses which, because they are inveterate, seem to be sacred; nowhere else is there so much good will, so much readiness to help, so much general intelligence, such sanguine faith in the ability of an enlightened and religious people, who govern themselves, to overcome all obstacles, and to find a remedy for whatever mishaps or evils may befall them. Here, too, more than elsewhere possibly, men feel that there is a higher love than the love of country, that the citizen can serve his country rightly only when he holds himself in vital communion with the eternal principles on which human life rests and by which it is nourished. The American's loyalty to his country is, first of all, loyalty to truth, to justice, to humanity. He feels that its institutions can be enduring only when they are founded on religion and morality. He is less inspired by the fortune of the Republic, its material advantages, and possibilities, than by its spiritual significance and destiny. He is, indeed, filled with a sense of gladness when he beholds it stretch from ocean to ocean, from the lakes to the gulf; when he sees the Northern pine salute the Southern palm as a fellow-citizen, when he looks on its prairies teeming with harvests sufficient to feed the world, on its mountains and plains filled with silver and gold, with iron and copper, with coal and oil. But he is less impressed by this geographical and material greatness and splendor than by the intellectual and moral conditions which America presents. Nature is fruitful in vain where man is contemptible. The palace makes ridiculous the occupant who is a beggar in mind and spirit. To no purpose is the country great if the men are small. Life is more than life's circumstance, man more than his environment. The American patriot then more than others seeks grounds for his love of country chiefly in the world of man's higher being. For him freedom, knowledge, truth, justice, good will, humanity are the essential needs, and it is a little thing that America offers facilities for satisfying the physical and material wants if here the soul is starved. Democracy itself is not an end, but a means. The end is a nobler, wiser, stronger, more beneficent kind of man and woman. How shall such men and women be formed except by opportunity—opportunity for all of worship, of education, of culture, of work that strengthens and purifies, while it creates material comfort and independence? If a nobler race is to spring forth in this New World, all the influences that are active and potent in the national life must conspire to form public opinion, by which in the end we are all ruled—a public opinion which shall be favorable to pure religion, to the best education, and to sound morality. The better

kind, however otherwise they may disagree, must unite and support one another in ceaseless efforts to create such a public opinion. They must not merely lead loyal, brave, chaste, and helpful lives, but they must so live that the atmosphere in which they move shall receive from them a magnetic quality—the power to stimulate all who breathe it to nobler thoughts and loves; to a deeper and more tender solicitude for the rights and needs of all men, of women and children, of the sick and forsaken, of the criminal and captive.

GOOD PATRIOTS AND GOOD MEN.

Goethe, who never utters a foolish thing, says that in times of peace patriotism properly consists merely in this: That each one sweep before his own door, attend to his own business, learn his own lesson, that it may be well in his own household; and what he says, if but partial, is nevertheless essential truth. He himself, indeed, even in times of war and disaster for the Fatherland, seemed to act on this principle, and he has consequently been accused by some of his own countrymen of a lack of patriotism, though in fact he did more to make possible the political union of Germany than any other man, for he, more than any other, awakened the self-consciousness of the German people, and thus inspired them with a more intense longing for national unity. A good patriot is first of all a good man, true to himself and true in his relations to his fellow-men. If false to himself, he is false to all. If he love not rightly his father and mother, his wife and child, the neighbor who dwells beside him, how shall he rightly love his country? If he respect not the dignity of human nature in himself, but degrades it by drunkenness or lying or sensuality or dishonesty, how shall he feel a genuine and generous interest in the common weal and earnestly strive to do his part in correcting the evils and abuses which impair or threaten the national life and prosperity? It will indeed be easy for him to make his patriotism a theme for declamation, and easy, too, to throw suspicion on the loyalty of others, but if he is not a real man it is not possible that he should be a real lover of his country. Whoever deliberately wrongs an American wrongs America. The worst enemy of the country is not the drunkard, but the buyer of votes, whether at the polls or in council chambers or in legislative halls; not the petty thief, but the capitalist whose insatiate greed urges him on to crush all competitors; not the selfish man, who cares not at all for the general good, but the politician who makes his patriotism a cloak to cover him while he sneaks into public office, which he prostitutes to private gain; not he who refuses his assent to measures, however popular, unless he can give it honestly, but the demagogue who is ever ready to run and cry with the crowd; not the ranting anarchist, but the editor who for money impugns the known truth. * * * The saloon is bad. The worst evil, however, resulting from it is not drunkenness, but political corruption; for if just laws were rightly administered the saloon would cease to be a source of degradation and ruin.

AMERICANS LACK DISCIPLINE.

Our civilization is still incomplete. It is, as Emerson says, "A wild democracy; the riot of mediocrities and dishonesties and fudges." If numbers were enough, if wealth were enough, if machinery were enough to constitute a great people, for us the question would be settled; but the kind of man, not numbers, or wealth or machinery, is what we have to consider, and it is a favorable omen that we are not self-complacent, that our defects and faults are not hidden from us. We suffer from the absence of the discipline of respect, from a certain hardness and materialism, from a fondness for exaggeration and boastfulness. The fear of Demos and the demagogue prevents us from speaking the simple and salutary language of truth when far-reaching and vital issues are in question. We are so accustomed to bow to the will of majorities that we easily forget that votes count

for nothing when we have to consider what is true and wise and just. Here there is every likelihood that the minority is right and the majority wrong. The multitudes everywhere and in all ages are dominated by the present. They are unwilling to wait, unwilling to deny themselves now that they may become capable of higher things hereafter. The success of a day robs them of the glory of a lifetime. They are fickle, because, since they see only what is immediately before them, their opinions change as the road turns. They are selfish because they are shortsighted and but feebly influenced by large ideas and generous aims. Being a crowd, they are easily hypnotized and are quickly hurried from one extreme to another. They follow the cry of chance leaders, and being little able to think for themselves, they resent independence of thought in those things precisely in which such thought is most needed, for in the deepest and most critical questions concerning the national life and policy what is popular is rarely what is most wise. The voice of the most serious minds is not only not heeded, it is drowned in the clamor and vituperation of those who are themselves led by men who know little and who have at heart chiefly their own popularity and profit. We suffer ourselves to be hypnotized by glaring type and loud shouting. * * * A false opinion is created and we are commanded to accept it without question as the will of the people, and our highest officials, when they yield to the outcry of the mob, are commended for their wisdom and patriotism. Our best minds do not guide us, our best men do not govern us. By faithful adherence to the principles with which our national life began we have grown to be a prosperous and mighty people. We have been taught to cherish these principles as being scarcely less sacred than our religion. Our climate is healthful, our soil fertile, our territory is as large as all Europe. Our industry, intelligence, and mechanical skill have in the brief space of a century made us the richest of the nations, while the growth of our population has been phenomenal. If success be an argument for continuing in a given line of policy and conduct, no people ever had so good a reason for following in the old way. Our success has been marvellous, but, after all, it is still only the success of an experiment. It has not yet been proved that a stable and enduring civilization can be built on a democracy such as ours. We occupy a continent stretching east and west, north and south for thousands of miles. It is not easy to reconcile the interests of regions lying so remote from one another. Our population is composed not only of heterogeneous elements from Europe, but also of a large and increasing and but partially assimilated body of Africans. * * *

Here, at our hands, lies the task God sets us. It is the development of our inner life, the enriching of our minds, the purification of our hearts, the education of ourselves through liberty and labor, the reform of our politics, the rooting out of cant, lying, vulgarity, greed, and dishonesty, of drunkenness and lust, the correcting of our extravagant estimate of the value of what is merely matter, of life's accompaniments as distinguished from life itself, which is thought and love, strength and courage, patience and forbearance. We have to learn that what makes a millionaire spoils a man; that a people who think trade and commerce the one thing needful have no permanent place in history, because they have no influence on the spiritual, which is the real, life of man. The people that is the bearer of the largest thought, the deepest love, the holiest faith, lives and works forever in the race, while merchants and traders perish and are forgotten like the wares they deal in. See how quickly elated and how quickly cast down are they whose hope is in riches, for riches are akin to fear, to change, and death; while they who live for truth and righteousness move forward serene and unafraid, upborne by the unseen powers, for truth and righteousness are life. Beggars and outcasts, if but some divine thought or immortal hope upwelled within, have survived the fall of empires, the ruin of civilizations, and the utter vanishment of the people from whom they sprang. We have to learn how to be happy and noble,

for, as Ruskin says, till we have learned how to be happy and noble we have not much to tell, even to red Indians, and he goes on: "To watch the corn grow and the blossoms set; to draw hard breath over plowshare or spade; to read, to think, to love, to hope, to pray—these are the things that make men happy. * * * The world's prosperity or adversity depends upon our knowing and teaching these few things; but upon iron or glass or electricity or steam, in no wise." The absolute, the highest is a person, and the civilization which issues in the noblest personalities is the best. By them we estimate the worth of our nature, by them the value of our political and religious institutions. But noble men and women do not spring forth in isolation. As an individual, man is insignificant; in fact he can not become human at all except in a social environment, in a medium in which he is made partaker of the life of the race, receiving the thoughts, hopes and beliefs, the aims, aspirations and ideals which are the food of the spirit of man, of that which places him in opposition to nature and lifts him above its fatal laws. It is the patriot's business to strengthen and purify the institutions by which the citizen is educated—the family, the church, the state. To whom the life of the home is not sacred nothing is sacred. The child that does not drink pure love and religion from this fountain-head can never be rightly educated. It is in vain that we build churches and schools if the home does not fill them with teachable hearts and minds. It is here that each one receives his better self—the self which makes him conscious that he is a center toward which infinities converge, where truth and justice and love are felt to be the real and permanent good. What burns in the hearts of the fathers will glow in the breasts of the children. Patriotism, like charity, begins at home. It is not a philosophy, it is a sentiment inspired above all by the mothers of a people, from whom also we receive religion and morality, which Washington calls the indispensable supports of political prosperity; and, therefore, he refuses to give the title of patriot to those who "labor to subvert these great pillars of human happiness, these firmest props of the duties of men and citizens."

The end of all worthy struggles is to establish morality as the basis of individual and national life, and morality can be firmly founded only on pure religion. To make righteousness prevail, to make justice reign, to spread beauty, gentleness, wisdom and peace, to widen opportunity, to increase good will, to move in the light of higher thoughts and larger hopes, to encourage science and art, to foster industry and thrift, education and culture, reverence and obedience, purity and love, honesty, sobriety, and the disinterested devotion to the common good, this is the patriot's aim, this his ideal. And if ever a minority, a remnant, work in this spirit, and strive with this purpose, the star of the Republic, which rose to herald the dawn of a new and better era, shall not throw its parting rays on the ruins of an empire, stained with blood. [Long-continued applause.]

The University and the Teacher.

Address by Bishop Spalding, of Peoria, at the convocation of the University of Chicago, October 2, 1899.

"The chief concern of every man is not, as it should be, the formation of his character. The most wish merely to find a recipe for comfort or a way to acquire riches and whatever else they aim at."—*Goethe.*

Whether the rule of the people shall approve itself as a wise, beneficent, strong, and enduring government will depend largely on its attitude toward religion and education, the fountain heads and safeguards of right human life. When power is placed in the hands of the multitude and opportunity is offered to all alike, whatever makes for utility, for comfort and ease, for physical health and well-being, will be held in high esteem, will be cultivated and promoted, for the need of all this is felt by all, and where there is freedom all will labor to provide it.

Consider for a moment this great metropolis, where but yesterday the wild fowls screamed among their fellows. Its growth and wealth are the marvel of a century of wonders. Not in London, or Paris, or other centers of the Old World shall we find more stately structures or more commercial and industrial activity. In the presence of this vast achievement of human energy the most thorough idealist can not but stand in awe, for such power, such energy, such efficacy of will, on whatever objects it may be exerted, is awful. Here, assuredly, it has been exerted almost wholly on what is material, on what is simply useful. Look on these lofty buildings, observe the eager throngs hurrying through these busy thoroughfares, and ask yourselves what it all means. Why have these edifices been erected? Why are these streets filled with people who hasten on as though pursued by death?

One thought, one purpose, dominates the whole. This city, with its population of two millions, has been created for commercial and industrial ends. It exists to provide the useful—to feed, clothe, house, warm, and carry men—and it does this work with such enterprise and skill, with such unremitting toil, that it is not possible to withhold admiration. All honest work is sacred, and they who labor with the hands not less than they whose mightier instrument is the brain are, if they are filled with the right spirit, God's workmen; and since it has not yet been found possible to teach the multitude to make efficacious use of their nobler endowments, manual labor is their salvation, and therefore the safeguard and basis of civilization.

But there are higher things than those which are merely useful, and consequently there are men whose function is of vastly more importance than that of the toilers who provide us with food and drink and clothing. These are indispensable; all must have them and the whole world takes care that they shall not lack; but genuine human life emerges, not when we eat and drink, for this we do as mere animals. We first become men and women when we think and love, when we hope and believe, when we listen to the voice of duty, however hard its command; when we rise through aspiration and imagination to those inconceivable heights where time and space are no more and the soul is alone with God. In this world, which is the proper human world and man's true home, it is not easy to dwell. It is within us, it is likest unto what we really are, but to become conscious of it and to feel the need of the blessings it holds, man must ascend from his primitive to his ideal nature, and the effort to do this with method and system is education, which is a conscious striving to fulfill in one's self the ideal of the perfect, and as a means to this end to transform both one's self and one's whole environment. The aim is to make one's self the best it is possible for a man to become and the world he lives in the most suitable to the development and play of the higher faculties.

Even the savage succeeds in getting what is simply useful—food and drink—and, when it is necessary, some sort of clothing; but there must be at least a beginning of civilization if man is to undertake the task of raising himself from his primitive to his ideal nature—endless task, not to be accomplished by any one individual or people. It is the work God imposes on the whole race for all time; and the highest individuals and races are those that contribute most to this divine consummation.

In this metropolis, created by the spirit of the wide-spreading and teeming Mississippi Valley to be a purveyor and provider of whatever ministers to man's material needs and comforts, to the wants of his primitive nature, it is altogether right and desirable that a center of intellectual light and moral influence should have been established where great teachers may dwell and work, men whose thoughts and aspirations and lives are suffused with a glow caught from higher worlds. A university, I think, is not so much a place where all that is known is taught as a place where noble and luminous minds create an atmosphere which it is impossible to breathe and not feel the quickening of new and larger hopes and aims—minds that are less concerned to impart information about anything whatever than to solicit, call forth, sustain, strengthen, and to bring into act the powers which lie latent in the human soul, striving themselves day by day to become wiser and more loving, that with each access of new life they may thrill, inspire, and impel others to generous and persevering self-activity. It is only in a university that such minds can be brought together, and they, be they few or be they many, are the life and essence of university teaching, for they create an intellectual and moral climate in which one can not live without imbibing the spirit of self-culture.

The important consideration for those who have the will to become all that is possible for them to be is not what they shall study, but where they shall find a genuine vital man who teaches anything, who, while he teaches, still continues to learn and upbuild his own being. The teacher, then, must first of all be a real man. Scholarship is secondary. The only wholesome influence which man can have on man is exerted by his personality. It is admitted that where observation is possible we may not rest content with explanation. Let the pupil be brought face to face with the thing itself, that he may exercise his powers on this and not on words about the thing. This is the method of all right teaching, which is never merely talk about science, or philosophy, or literature, but is, above all, exemplification, concrete presentation of the subject; and since the highest we know on earth becomes concrete only in man, the first thing to be asked for, when there is question of a school of whatever kind, is a genuine, noble, wise, and loving personality. This is the presupposition in all theories and problems of education. Like begets like, and to hope to illumine, exalt, and purify, when we ourselves are dark, low, and unclean, is to hope for a reversal of the laws of nature. He who would develop in the young a sense of religion and duty, of honor and freedom, must himself be all alive with these elemental powers.

There is doubtless a science and an art of education, and consequently there are principles and methods of which the teacher must make use if he is to do good work. Is it not plain that history or literature, or geography, or mathematics, may be rightly or wrongly taught? Is it not necessary that the methods of teaching be adapted to the subject as well as to the mental condition of the pupil? Now this is pedagogy—it is little more than good sense applied to the purposes of education. The object is to control individual experience by general experience. It is certainly most important that the teacher should live and act in the light which the history of education throws on his work.

Nevertheless, it is a fundamental error to suppose that the principles, rules, and methods of pedagogy are the chief requirements in education. Neither a fund of

accurate and pertinent information nor the most approved methods can supply the essential and indispensable pedagogical requisite—the awakened mind, the loving heart, the quick and comprehensive view, to which, as to the eye of a skillful general or physician, the exigencies of each moment and situation are revealed. The true teacher is at once a leader, an inspirer, and a healer. He is neither a slave of methods nor a victim of whims and hobbies. He knows that rules are but means, and he does not enforce them as though they were ends. He is not a machine, but a living soul, obedient to the light of a cultivated intelligence and to the impulses of a generous heart. His task is as difficult as it is important, as full of trials and hardships for himself as it is of blessings for those whom he influences. Let him, then, be free, let him be trusted, let him be cheered in his work.

To make him the slave of minute observances, the victim of a system of bureaucratic regulations, is to render it impossible that he should find joy and delight in his work, is to superinduce in him a servile disposition, is to degrade him to the level of a machine, is to make him unfit to mold and inspire free men. If he is to train his pupils to a wise self-confidence, without which nothing great is ever achieved, he must not be made to feel that he himself is unworthy of confidence.

Montaigne holds that the teacher needs a well-made rather than a well-filled head, which is his way of saying that learning is of less importance to the educator than an open and sincere mind, capable of judging with fairness and of reasoning with accuracy. Thus a father or a mother, simple and unlettered, but endowed with good sense and with love of truth and justice, has a more profound and lasting educational influence on the child than any which may be exerted by the doctors of the universities. Nothing has such power to draw forth human strength and goodness as love. The teacher's first business is to win the heart and through the heart the will of his pupils; and to this end a generous faith in them is the most effective means. By trusting them he shows them how to trust themselves; by believing in them he leads them to believe in themselves, thus awakening in them a desire to realize the high things of which they see they are held to be capable.

Nothing destroys the confidence of the young so quickly or so thoroughly as to know that their teachers are insincere or unjust. Better rule by brute force than by deceitful devices. If there be anything false in them, it can not be hidden from the quick glance of youthful eyes. "A man passes for that he is worth," says Emerson. "What he is engraves itself on his face, on his form, on his fortunes, in letters of light. His sin bedaubs him, mars all his good impression. Men know not why they do not trust him; but they do not trust him." The weak and the ignorant are the quickest to threaten and punish, and it is only where teachers lack moral and intellectual power that they resort to harsh measures. The bitterness they feel makes their own and their pupils' lives bitter. How pleasant it is to hear Montaigne tell that his father did not permit him to be awakened except by the sound of some musical instrument. So, possibly, does God awaken us from life.

Whatever others may hold, let the teacher be persuaded that the faults of the young are due to weakness and ignorance rather than to malice; and if he find a few who have inherited or acquired a vicious disposition, let him not imagine that they can be corrected and improved by anything but patience and loving kindness, assisted possibly by medicine and hygiene.

The master must first be master of himself. He must be sympathetic and lowly-minded; must often efface himself and suffer his presence to be felt only as a guidance and encouragement to the awakening minds of his pupils. And how shall this be made possible for him if his heart is not filled with the love of God and of human perfection? Behold the mother hen moving among her little brood, who, when she has found something of worth, lovingly calls their attention to it

and passes on, leaving them to decide whether they shall take or neglect it. If the teacher show his pupils how far he excels them in mental power and culture, he discourages them; for the more susceptible of education they are, the greater is their modesty and self-diffidence.

Let him be as one of his little ones—a learner and striver. Such have been and are the mightiest and noblest souls. Only a free spirit can educate the freedom, only a reverent and devout mind can inspire faith in God. The love of liberty springs from the love of truth—truth makes free. Indeed, it is only in the world of truth, speculative and practical, that man feels himself free, at home in a realm above that of physical law and determination. Healthful work is the mother of brave and joyful hearts; where learners are dispirited and heavy-hearted they are not doing the right work or they are not doing it in the right way. When young souls are bursting into bud and bloom their world should be as bright as the blue skies of spring, overhanging flowering orchards, where the birds sing and the bees hum, and the sparkling waters leap to see and hear. Throughout life they should be able to associate the memory of this fair time of spiritual growth with all that is pure, fragrant, and inspiring; for, should the experience of those early years make it impossible to believe in the surpassing worth of culture. they inevitably become the victims of arrested development and lead a stunted existence.

In a family in which the spirit of cheerfulness reigns there is peace and happiness; each one finds his task and performs it gladly. The school is a larger family. If the masters are harsh and morose, the pupils discouraged, the school is bad. The effectiveness of school methods depends upon the character of the teacher. If he lack intelligence and individuality they become mechanical devices, in which the pupils can take but a mechanical interest. Rules and laws are of little use in those who have not been brought up to desire and love the guidance of law. He who is grounded in faith in the principle of law will become a good man, a good Christain, a good citizen, and nothing else will make him so. Faith in the principle of law is faith in God. If we form true men, the rest will form and reform itself.

Schools where many things are taught, but where will, courage, seriousness, love of truth, great-mindedness, and respect and reverence for all that is high and holy are not cultivated, are institutions of perversion rather than of education. Let the teacher leave nothing undone to make brave, honest, chaste, unenvious men and women, even though they fail in scholarship. If conscience is not sovereign it is nothing. "Moral education," says Kant, "should begin not with reformation of conduct, but with renovation of thought and formation of character." Whatever may help to make a man is the teacher's business. In him indifference is imbecility; it is impotence. The gift of eloquence is of inestimable value to him, but he should not, like the orator, seek to captivate and carry away his hearers; but he should inspire, illumine, and prepare them for independence of thought, for freedom of view.

They are the best teachers who make study most attractive. This is the best genius does for its possessor; for what is it but an inner impulse which urges him joyfully to the pursuit of truth, goodness, and beauty? Nothing fatigues like dullness. From the weariness it begets there is no escape. The teacher's character is the best reproof. The mother does not occupy herself with projects for carrying her child; she is busy teaching it to walk alone. This is the aim and end of all right education. Suggestion is a large part of the teacher's business, hence there should be a magnetic something in him—the power to interest, to charm, to inspire, to impel, while he enlightens and guides. Courage is contagious. Brave thoughts, brave words, brave deeds—courage in his whole attitude toward life and death, toward God and man—this makes the teacher an educator,

constitutes him a former and creator of men; for the heroic mood leads to contact with divine things and has vital power. Refuse to entertain thy troubles and sorrows and they will leave thee. A great mind can console and heal as well as time. Our attitude toward circumstances determines what effect they shall have on us. A generous and active spirit turns to divine uses the things which weaken and corrupt the timid and indolent.

To do for the pupil what he should be inspired and impelled to do for himself does not help but hinders his progress. Teach him to teach himself by looking, listening, observing, and reacting on the impressions he receives. The imparting of information is but a small part of the teacher's business; his chief concern should be to develop faculty, to form character, and to point out the means whereby knowledge may be acquired, and, if need be, communicated.

In the presence of the infinite possible, nay, of the vast accomplishment of nature and of mankind, the work of the individual, though he be the greatest, is insignificant. Let not this discourage thee. Thou wast born to do but a man's work. Do thy best—it will make thee worthy. Each one's character is determined largely by heredity, environment, and the education he has received. None the less is it each one's duty to shape and build his own being into ever-growing harmony with what is eternally true and right. Only the gentle and loving know how to guide souls, for they are patient. They alone can stoop to all infirmities without losing their trust in God or their faith in man.

The teacher accomplishes more by making strong impressions than by constructing lucid arguments. If the heart is moved, if the conscience is awakened, the reasons for right doing become manifest. Hence the great moralists have been impelled to utter themselves in vigorous and sententious thoughts, in maxims which penetrate the mind and remain as an incentive or a reproach. "Do not withhold him from doing good who is able; if thou art able do good thyself also." "The wise shall possess glory; the promotion of fools is disgrace." "Get wisdom, and with all thy possession purchase prudence." "Take hold on instruction; leave it not. Keep it because it is thy life." "Choose knowledge rather than gold, for wisdom is better than all the most precious things, and whatever may be desired can not be compared with it." "The words of the wise are as goads and as nails deeply fastened in;" and unless for us they are as goads and as nails deeply fastened in they profit us in no way.

All things belong to thee, if thou but love them, and what thou possessest will give thee pure delight, if thou hold and use it for the benefit of others. The life is the best which issues in the highest knowledge and the purest virtue—all else is frivolous. When our moral convictions are profound and living we easily communicate them to those about us; but if the essential goodness is lacking in ourselves, the words we utter, however fine, will not bear to others the seed of divine life. Make thyself free within, for turn outward whithersoever thou wilt, thou shalt find that confining walls proclaim thee prisoner.

Educableness is man's true characteristic, and the teacher who loves his calling and understands his business will give his chief thought and labor to education, whether it be his own, or that of a few, or of the whole race. Where is the learned? Where is he that pondereth the words of the law? Where is the teacher of little ones? In the right spirit, which is the important thing, whatever we do, there is either knowledge or a genuine yearning and striving for knowledge; but the teacher's knowledge, whether of method or psychology, or of whatever other pedagogical art or science, is of little worth to him as an educator unless he have the right spirit; for it is this that creates devotedness, gives insight, arouses interest, and stimulates self-activity.

As a wise man thinks little of his success and much of his failures, that he may learn to make them good, so when teachers shall have become educators less

attention will be paid to the bright pupils and vastly more to the weak and the slow. A school is more safely judged by those it fails to improve than by those it helps. What more worthy end can the teacher propose to himself than to accustom his pupils to find pleasure in the practice of virtue and to turn with disgust from what is base or wrong? If they be led to dwell habitually with high and true thoughts they will become part of their being, give warmth and glow to their feelings, and impel the will along the paths where their light falls.

We are transformed by what we meditate not less than by what we do. The word which God spoke in the beginning is the word which he forever utters: Let there be light; let knowledge grow, let wisdom increase, let love prevail. The light of the mind makes the world harmonious and beautiful. The noblest people is not the richest or the strongest, but the people whose soul is filled with the highest thoughts and the divinest aspirations.

Take from any country a hundred of its greatest men in religion, philosophy, poetry, science, and art, and the life of all falls to a lower plane. Let the teacher, then, strive day by day to lift his pupils to the world where these hundred best have made their home. The only serious instruction is that which cultivates reason and conscience. The words which the teacher utters, however true or wise, have less influence on his hearers than his character. The man, not the speech, is eloquent.

A hero, like a beautiful woman, persuades by simply appearing. It is the spirit that is divine, and words have irresistible force only when they spring from the hearts of Godlike men. They who create new and beautiful ideals, which give a new and holier sense of the worth and goodness of life, are our greatest benefactors. How blessed it is for a country to have good soldiers, good thinkers, good priests, good artists, good workers in every sphere! The supreme need is of good men, for only they upbuild the kingdom of earth and heaven. It is hard to love the multitude for what they are; the wise love in them the ideal of a higher life which they strive to realize here, believing and hoping that they thereby cooperate with the Eternal for ends which are absolute.

Sadden not the hearts of the young. Their worth as men and women will be in proportion to the joys of their childhood. Forbid as little as possible, but help thy pupils to do gladly wholesome and profitable work. Only they know how to teach who know how to rouse, to encourage, to incite. This is everything; for they who go bravely to work with joyful hearts will learn whatever is needful. The power to awaken ideas, so to use words that, like an enchanter's wand, they make what they symbolize rise into view, as though it stood before the eye, is a gift of genius, but it is also a talent which may be cultivated, and there is none which gives to the teacher's work more life and charm. It is important to make things plain, to throw about them the revealing light of the mind, but they who set the world aglow with the warmth and magnetism of an ardent and passionate soul are the true inspirers and teachers.

We little suspect what power of devotion and heroism there is in the simple people by whom we are daily surrounded, and who often appear to us altogether commonplace. Let but the proper occasion arise, and we shall behold their souls transfigured by the light of higher worlds and clothed with almost superhuman strength. Thus there is in the humblest man or woman a divine something before which the greatest may bow with reverence. Let, then, the teacher learn to recognize the good there is in every child's soul and let him strive religiously to unwind the bonds which hold him prisoner. "He who undertakes to form a man," says Rousseau, "must first have developed true manhood in himself." Again: "The pedant and the teacher say much the same things; but the former says them in and out of season; the teacher only when he is sure they will produce their proper effect." What we are capable of knowing depends on the power

and quality of our minds. Deep truth grows shallow in the shallow brain. Hence the genuine teacher gives little time to cramming his pupils with information for which they are not prepared, but he devotes himself to their whole being, which he exercises in every way, that they may gain strength and freedom, that they may become self-active, and address themselves gladly and perseveringly to the pursuit of truth and perfection.

The shadows, at least, of great thoughts fall on all, but for the most they are like the shadows cast by the wings of birds that pass for a moment above their heads. For a moment the soul feels the nearness of higher and holier things, and then suddenly finds itself again in the profane world of its everyday life. It dwells habitually on the hard and noisy earth, like the body, instead of rising to its true home in the serene realm where God reveals himself as everduring light and love. The sensual appetites exist for the preservation of the individual and the race. They are means, not ends, and to seek happiness in their indulgence is to smother the soul in filth and blood—it is apostasy from truth, from God. Our thoughts go forth to external things, or if we think of ourselves it is only in so far as we are affected by what is outside ourselves. Our desire is for such things; in them our hope is placed.

Shall we never learn to live with ourselves, that we may become alive in God? Thus alone is it possible for us to live truly, and to be no longer mere centers where a vain and transitory world mirrors itself. To live truly is to be good; and he who is good does good. In striving to improve thyself thou laborest for the good of others, and in helping others thine own life is made richer and purer. If we are to be teachers of men we must be soul-inspirers; we must work in the spirit of prophets, priests, and poets. Mechanical drill is the mill wherein the corn is ground; but once it is ground it will never take root and grow.

Religion brings into accord our intellectual, moral, and emotional natures; it appeals to the imagination as nothing else can. It is the inexhaustible fountain of hope, courage, and patience; it is the chief consoler in the midst of the troubles and sorrows of life; it is the eternal light which shines on the grave and lifts our thoughts to enduring worlds; it gives an immovable basis to the ideas of right and duty; it justifies faith in the superiority of mind to matter, and of pure and generous conduct to gross indulgence; it is the bond which holds men together in the family and the state; it is the source of the ardor and the enthusiasm which suffuses morality with fervor and gives it contagiousness; it is the consecration of our holiest yearnings and highest aspirations; it is the force which enables us to transcend the sway of the fatal laws of a mechanical universe, and to rise to the pure sphere where God, the Infinite Spirit, lives and loves and is free. How shall the teacher be a builder of character, a former of men, if he be not illumined, strengthened, and consecrated by divine faith? How shall he communicate the thrill of awe if he feel it not himself? How shall he teach reverence, which alone saves from shallowness and vulgarity, if his own spirit is profane? Culture, like religion, is propagated from soul to soul, not developed.

The ideal of culture is expansion and elevation of mind; that of religion, purity and lovingness of heart, to attain the wholeness and perfection of which human nature is susceptible. We must think and strive in the light of both these ideals. The open, flexible, and exalted mind must be nourished and steadied by the religious and moral sentiments which are the sustenance of our being. If the teacher himself has not made the everlasting affirmation, if his life is not enrooted in a noble faith and sustained by unalterable convictions, what vital thing can he say to his pupils? What that it is worth while to say? They whose religion is a code of rules and a system of practices, but who are not gentle, loving, and enlightened, are repellent forces. They have no power to educate. The greatest grow the longest time, and they whom nothing can arrest in their onward march to the

fountain head of truth and love are divine men and women. That which, like a mathematical demonstration, is wholly evident, leaves us indifferent; it is the infinite unknown that fills us with boundless yearning and draws us ever on and upward. Our aims and ideals are revealed by the objects and ends which we seriously strive to attain; by what, day by day, we labor for with heart and soul, unafraid and undiscouraged.

He must know how to govern; for what is education but the art of governing? But how shall he learn to govern unless he forget and deny himself that he may think solely of the good of his pupils? Is not this the secret of the mother's power, who, if she know how to love, is the world's first and highest teacher?

Passion of some kind lies at the root of human activity, physical, intellectual, and moral. Study springs from a desire to enjoy, and they who can not be made to feel that to know is itself joy, lack the inner impulse without which lasting mental effort is not possible. The inferiority of the multitude is due to their spiritual indolence. Their routine work performed, they sink at the end of each day into somnolence and lethargy; and this is true whether they read or talk or are silent, for in all cases they are passive. Their attention is not really aroused, and their minds are not really at work. In their social gatherings and amusements they are distracted, and in their intercourse with one another there is no spark of genuine intellectual and moral activity. Hence in the domestic circle the young receive no incitement to high and worthy effort, and they carry with them into the school the careless and indifferent habits which they have acquired from their parents. So long as this remains true so long will the multitude, in spite of schools and teachers, remain inferior.

"In my dealing with my child," says Emerson, "my Latin and my Greek, my accomplishments and my money, stead me nothing; but as much soul as I have avails." The highest wisdom is that which teaches us how to strengthen the will and to turn it resolutely to the love and practice of virtue, without which life is worthless. Hence it is unwise, not to say immoral, to commend virtue on the ground of policy, for virtue may not be policy, and to love it for anything else than its own rightness is to sin against its very idea; and so if we would seek truth profitably we must learn to feel that it alone can rightly nourish our intellectual and moral life.

If we wish to distinguish between education and culture we may say that education ends with our life at school, while culture, the self-imposed task of upbuilding our being on every side, then properly begins. Is it not plain, therefore, that the impulse the teacher gives is more important than the knowledge he imparts? In the home, in the sick room, on the battlefield, the great helper, consoler, strengthener, and light-bringer is a loving, cheerful, brave, and luminous spirit. Where he breathes and acts, suffering and death even lose their terrors; and the strength and wholeness which are born of such a spirit alone make the best work possible. Let the teacher, then, put far from him all worry, cowardice, pettiness, and spite, as well as whatever else may weaken hope, confidence, and love. "All things are hard. Man can not explain them by word." In the end as in the beginning, true wisdom lies in reverent faith and devout striving.

Without an ideal of some kind life has no significance. Above every doorway that leads to action is written "Why?" Over the lintel of the house of pain and sorrow we read "Wherefore?" Why should a man do and dare? Wherefore must he suffer and bear? For the right? But right supposes the eternally righteous one. For truth? But there is no truth if at the core of being there is only emptiness. God is the ideal or there is none. Turn resolutely then from whatever may weaken thy trust in God and in thyself, whether it be the love of money or the favor of the high-placed or sensual indulgence. Use as best thou canst what force is thine, nor doubt that aught which is needful to a worthy life shall

be lacking to thee. Keep thyself alive, eager for light and warmth, nor be troubled because thou drawest thy nourishment also from earth's soil, for whatever is an aid to strong, generous, human life is from God. If thy mind is open and sincere every real view will bring thee joy and strength, though it disturb thee by forcing thy old opinions into a new light.

What matter whether truth be profitable? It is to be sought, followed, and loved though it bring calamity and death. Accept the fact wherever and whatever it be, for not to accept it is to stultify thyself. The passions are good; they are the source of power and energy, but power misused is evil. Let not thy sympathy weaken the inner source of life and thus rob thee of vital force, for thy first duty is to be strong and self-contained, since so only canst thou be wisely loving and helpful. If thou hast good will, if, like God, thou lovest all that He has made, what else dost thou need but knowledge and strength, the power to make thy good will prevail?

The universal obstacle to progress is within. The light of heaven shines on all, but it shines in the midst of darkness as in interstellar space, because only here and there are there minds and hearts which offer a fit medium for its diffusion. The fatal fault is in ourselves, and the awful discouragement comes of the consciousness of what we and all men are. Let thy past be for thee as if it had not been. Forget the good and the evil thou hast done and begin to-day as though now for the first time thou heardest God's voice bidding thee win immortal life.

They are not wise or brave who are not able to draw greater profit from insult than from praise.

> Then welcome each rebuff,
> That turns earth's smoothness rough,
> Each sting that bids not sit nor stand, but go.

If thy life seem to thee a useless burden, still bear it bravely, and thou shalt find at last that, like St. Christopher, thou hast carried a god across the troubled stream of time. Whosoever does what is right in a generous and brave spirit feels that he acts in harmony with eternal laws, and is, in his deep soul, conscious of the divine approval.

"Woe," says Bossuet, "to the sterile knowledge which does not fulfill itself in love." And again, "God is with us when we love." There is a love of the soul for souls—it is the only love which may be called love; it springs from the infinite soul, and makes us feel that there alone is our true and eternal home. Become conscious of thy soul, bend thy ear to its whisperings, and thou shalt hear the voice of God. In the depths, in the depths—here alone is life. And the noise of the world, the desire to be known, the thirst for pleasure and gold, and whatever things draw the soul to the surface, separate it from the source of its being and joy, whose waters are clear and deep, where silence reigns, where the calm, eternal face of God is mirrored.

An external authority may enlighten and guide us, but it can not give us the power of knowing and loving. "Let not Moses, nor any one of the prophets, speak to me," says À Kempis, "but speak Thou to me, O, Lord; Thou, from whom proceed the inspiration and the illumination of all the prophets." Think nobly of thy life, for thy habitual thought tends to become thyself. Renew day by day the will to live, to live in all that is true and good and fair; to live within the mind and heart, where glow the light and love which are eternal.

We blunder fatally in our schools in laying stress almost exclusively on what the pupils know. The young can know little, and nothing truly; but it is possible to inspire them with reverence for what is worthy and with faith in what is good, and this, which is almost the whole duty of the teacher, we neglect, while we apply ourselves to bring out in them a mental quickness which leaves

untouched the fountain whence human life springs and by which it is nourished. Man is infinitely more than a shrewd animal, and the teacher who fails to recognize this does little else than harm. The instrument of knowledge itself, of the knowledge at least which is wisdom, is not so much the intellect as the whole man, to whom we must address ourselves if we would make a man. Not the truth we hold, but the truth by which we are held, nourishes and shapes our lives. Keep open the way which leads from the seen to the unseen, for it is only by moving therein that thou shalt find strength and joy.

We live in the center of divine worlds, and how slight a thing will reveal the godlike virtue which lies asleep in the humblest heart! Not to the most wretched being alive is it lawful to speak a harsh or disheartening word. Though all else in his life be hideous and full of despair, yet shall the teacher bring to him the atmosphere of beauty, courage, and love. How much of our strength is derived from the opinions we have formed of the moral purity and goodness of the persons with whom we have lived, whom we have known and loved? Were it no longer possible to believe in their truth and worth, the foundations of our spiritual being would be shaken.

Suffer not, O teachers, that the all-believing, all-hoping souls of children find that the ideals they have worshiped are but idols. The good scatter blessings. In their company all divine things seem possible, even as cowards lose their fear when a hero leads them. If we could live habitually as live those who truly love, what joy and wealth should be ours! How easy it would be for us to become poets, heroes, saints. A thought one lives by, however simple; a desire which fills the heart, however humble, is enough to make life rich and fair. We make our proper world according as we believe, hope, desire, and love. A loving soul illumines and warms the house better than a blazing hearth and a lighted lamp.

It is not difficult to know what is good, but it is difficult to cherish this knowledge and to live with it until it becomes love and the substance of our being. "There is," says Ruskin, "no fault nor folly of my life which does not rise up against me, and take away my joy, and shorten my power of possession, of light, of understanding." Yet, though thy sins be as scarlet, believe that God's love can make thee white and pure. If with all thy heart thou seek the best things, failure is not possible. Strive then bravely to be true, gentle, chaste, loving, strong, and magnanimous, and thy life shall become sweet and noble. The light and peace of heaven shall enter thy soul, for thou shalt feel that God himself upholds and bears thee on. They who cherish right ideals are better than their characters, for they are ceaselessly rising out of themselves toward higher worlds.

How good is silence. It soothes and refreshes like sleep. It keeps us home with ourselves, wraps us like a blanket, cherishes the vital warmth, provides leisure, and shuts out the discords and contentions which are never wanting where words abound. Learn, O teachers, ye who are immolated to talk, how precious are the hours of solitude in which you may be alone with God and your own thoughts. There are no opportunities for those who have no life purpose. Let thy purpose be the making thyself a man, and whatever happens thee, the good and the evil will forward thee in thy work. There is no time but now, and in this now lies the promise and the secret of immortal life. There is no good but good will; it is the root of selfhood, the free and divine godward and manward impulse of the soul. Will to be and do right and thou art right. Make, then, the education of thy will the prayer and purpose of thy life. The foundation of thy being is moral. Knowledge must fulfill itself in deed or it is vain.

To conclude, a university is not so much a place where all the faculties are represented, where all knowledge is imparted, where original research is prosecuted, where men are prepared for the various professions which minister to human

needs, as a place where great minds and generous hearts and noble souls are gathered to bring their wisdom, their love, and their faith to bear upon the young to develop and raise their whole being toward the ideal of right life, of perfect manhood. The whole question of educational reform and progress is simply a question of employing good and removing incompetent teachers, and they who have experience best know how extremely difficult this is. In a university at least it should be possible, for a university is a home of great teachers or it is not a university at all. Costly structures, rich endowments, well-filled libraries, thoroughly equipped laboratories, many students, are but symbols of those delightful and luxuriant climates where "all save the spirit of man is divine," if great teachers are lacking. The chief value of a university lies in its power to attract and hold such men by giving them the fairest opportunity for the exercise of their high gifts.

The hero of a brilliant naval exploit, but just returned to his country, fills the whole land with the noise of acclaiming voices. It is a tribute of the popular heart to the worth of courage, skill, and daring. It is a privilege to be able to feel the thrill of genuine admiration in the presence of any high human quality, but the noblest hero is he whose achievements are wholly beneficent, who triumphs and scatters blessings without bringing sorrow or death to any child of man. Such a hero is a great teacher, who lives from generation to generation in minds made luminous, in hearts made pure, in wills confirmed in the love and practice of truth.

The University: A Nursery of the Higher Life.

By the Rt. Rev. J. Lancaster Spalding, D. D.

"In my time and country learning cures the disease of the purse fairly well; that of souls not at all. To him who has not the science of virtue all other knowledge is harmful."—Montaigne.

An irresistible instinct impels man to preserve and diffuse life, and therefore it is his nature to think it good—not only good, but the standard by which all values are measured.

Life is good, and the highest life is the highest good. The morality of action is determined by its bearing on life. Religion and conduct spring from faith in its worth and sacredness, and urge to efforts to attain its maximum. That men may have life and have it more abundantly the Savior came and the church was established. For this the state also exists. To increase the power and quality of life, schools are founded, literature and science are studied, the arts are cherished.

Life, more life, ever-increasing life, is the aim and end of all we think and do. To inquire whether life is worth living is absurd, for life loves itself, and love originates all worth. Misconduct or misfortune may in individual instances enfeeble or even destroy the will to live, but the love of life, and therefore the belief in life's goodness, are indestructible.

Each new soul as it rises into consciousness is baptized with the waters of gladness; it feels that to be alive is joy, and its radical impulse is toward more and ever more life; and this is true also of the race, which blindly indeed, and along mysterious ways that often seem to turn and sink, has risen with ineffable yearning and struggle and hope toward larger and freer life, attaining through the lapse of centuries to truer knowledge, to worthier ideals, and to juster standards of conduct. Faith in the worth and sacredness of life is, at bottom, faith in God as essential life. Our courage, our strength, and gladness increase not when we look below but when we look above. From whatever depths we have ascended,

the height which calls us is infinite. The universe is not made of atoms. Atoms are but mental conceptions whereby we represent the world as a mechanism held together and controlled by causes. In reality it is not a mechanism: it is an organism, a system of means and ends. We therefore get at the secret and joy of life not by knowing, but by willing and loving, not through scientific abstractions, but through faith and conduct. The simplest soul wholly intent upon righteousness lives in a higher sphere than the philosopher who, neglecting his own perfection, gives himself up to research and speculation. The highest truth is practical; it is that which makes us wiser, braver, and holier. This is the truth which we should most cherish and diffuse in the home, in the state, in the church, and consequently in the university. They are all schools, and their worth is proportionate to their influence on life. The ideal is moral; not mental excellence, but human perfection.

Civilization is the unity of a people's moral will manifesting itself historically. The universities of the past, as those of our own day, have but partially fulfilled their mission because they have failed to foster a deeper and purer moral life. Nay, often they have been and still are the nurseries of vice. The radical failure is moral failure, and the education which does not promote conduct, which does not build character, bears within itself a mortal taint. Our life is controlled and directed vastly more by what we feel than by what we know, and the power to feel and will is as educable as the intellect. We can be taught to believe, hope, and love, to be brave, kindly, and helpful, more easily than we can be taught to think; and without moral earnestness in the pursuit of truth it is not possible to learn to think to good purpose. When philosophy is studied as an intellectual pastime and conduct is looked upon as a matter of policy, no genuine education can be given or received.

Religious faith and conduct are the basis of right human life, and the student who is not inspired by this principle may become a brilliant or a famous, but not a great or a noble man. Hence, whatever removes the dangers which threaten moral purpose, as wealth and luxury, is helpful to the life of the scholar. "What rendered the University of Paris powerful, nay, positively formidable," says Savigny, "was its poverty. It did not possess so much as a building of its own, but was commonly obliged to hold its meetings in the cloisters of friendly monastic orders. Its existence thus assumed a purely spiritual character and was rendered permanently independent of the temporal order." Its students were distinguished not less by their ardent application than by their poverty. It arose like our own university out of the faculty of theology, wrought in the spirit of a large philosophy, embracing the rational interpretation of the phenomena of mind and matter, was free from professional and technical aims, and was throughout the Middle Ages rightly regarded as the mother of universities. In every true university there must be a great moral purpose, and a great moral purpose to be inspiring and contagious, to have educational efficacy, must draw its nourishment from a deep and pure religious faith. Personal morality must be enrooted in the conviction that righteousness is life; if it be but a matter of convention and prudence, it is a dead and profitless thing.

It is doubtless the business of a university to educate the intellect, to make mental culture its direct scope; but knowledge should not be separate from wisdom, nor moral from intellectual excellence. The primary and essential aim is to form men, not scholars. The scholar, like the author or the artist, is an inferior being unless he is also a noble character—brave, loving, pure, upright. Organization, buildings, endowments, and privileges can not make a school. There must be an inspiring idea, a lofty aim, a living purpose, animating both teachers and pupils. All else is idle if this be lacking. In a university founded on religious faith and principle this truth applies with special force. Though

religious faith is the great fountain head of conduct, religion is not always a synonym of morality. On the contrary, it may associate itself with every human weakness and vice; but to have educational value it must be vital, must have the power to stimulate and nourish man's moral not less than his intellectual life. To be the highest it must be favorable to the highest life, and the highest life is found in seeking not the knowledge which is sterile, but that which fulfills itself in deeds.

They who realize how much of the spiritual activity of the present age is found outside of the church can not but see that the Catholic religion must more and more cease to be a power in the world unless Catholics themselves become morally and intellectually more alive. They must learn to understand that it is more important that they should do good than that they should do it in a particular way, more necessary that they should think than that they should think alike. In the presence of the vast movement of the modern world we Catholics seem to have grown timid, as though we feared lest human opinion should prevail against truth, man against God; and this lack of courage, which comes of little knowledge and less faith, makes us weak and despondent. Whatever is an aid to human progress is favorable to the Christian religion, to the worship of God in spirit and in truth. We must learn to walk without fear in the midst of a world of widening knowledge, to welcome every addition to the treasure house of the intellectual wealth of mankind as a preparation, however remote, for the Kingdom of God, for whose coming the Saviour has taught us to pray. There is nothing in Catholic faith which should impede advance in any department of learning. It is only when we come to draw inferences that the church sounds the note of caution; and this, if rightly understood, is helpful alike to the progress of science and to the soundness of religious doctrine.

All facts are sacred, since truth is sacred; and consequently there can be no reason why a Catholic university should impose restrictions upon inquiry and research. The intellectual interests of mankind, if not the highest, are at least immeasurably important, and to attempt to thwart them would be to place one's self in opposition to the mightiest force which the Eternal Father has confided to His children. It profits nothing to gain the world, if the soul is lost; but the world of which the Savior speaks is that of greed, lust, and ambition, not that of knowledge, science, and philosophy. Hence the Christian ideal excludes pride and sensuality, not intellectual power. It is reason that makes us capable of religion, and therefore to improve the mind, to dispel the darkness of ignorance, which is the cause of three-fourths of our sins and miseries, is to work with God for the good of men. The spiritual union to which all generous souls aspire can not be brought about by authoritative utterances, for we hold vitally only the truths which our own self-activity kneads into our intellectual and moral constitution; and spiritual unity is the result of truth held in common, whether through faith or knowledge, and held vitally, not mechanically. Reason and authority are not antagonistic; on the contrary, no authority is legitimate unless it is approved by reason. Are we not eager to claim great and enlightened minds when they are friendly to our faith? Do we not appreciate the Catholics, at least when they are dead, who, despite human frailty and error, have done memorable things? Do we not extol the church, for what in ages that are gone it accomplished in behalf of literature, art, and science? Do we not hold that modern civilization is largely due to the influence of the Catholic religion?

And what is all this but to proclaim our own shame, if we are retrograde, cowardly, and inactive; if we suffer ourselves to be thrown into antagonism to living and fruitful movements; if losing confidence in ourselves and in our cause we drift aimlessly and pour forth vain lamentations over a past which can not return; for history does not repeat itself. The environment is not the same,

and the human factors change ceaselessly. Hence antiquarian reactions lack vitality. They fail even when they seem to succeed. In America the past has but feeble hold on our young and eager life, and we are too absorbed in our work to think of the present. The future therefore lures us with irresistible power. To commend a religious faith to us for its achievements in other ages is to plead in vain; as to strive to bring back the conditions of former times is labor lost. Were it possible, our world would not have it. If we are to act along an inner line upon the life of America we must bring to the task a divine confidence that our Catholic faith is akin to whatever is true or good or fair; that as it allied itself with the philosophy, the literature, the art, and the forms of government of Greece and Rome, so it is prepared to welcome whatever progress mankind may make, whether it be material, or moral, or intellectual; nay, that it is prepared to cooperate, without misgivings or afterthought, in whatever promises to make for higher and holier life. Why turn regretful eyes to some buried century, which, if we knew it better, we should esteem less? The best things lie before, not behind us.

Out of nothingness the race, like the individual, has come forth and our way leads toward infinity—from God to God—this is the best we know. Knowledge grows, power increases, freedom is enlarged, good will spreads to wider circles. Has faith ceased to be a virtue, hope a source of courage, love the fountain of life, that we should linger amid ruins and funereal monuments, weeping for the things which are no more? He who wrought with diviner efficacy than all the apostles heeded not what was gone, but moved toward the future with a heart which knew neither doubt nor fear. Let the dead past lie in peace with its dead; we are the children of light and life. Increasing knowledge will doubtless lead to changes of which we scarcely dream; but in the meantime wisdom demands that each use what insight and power is given him to educate himself and to help others. We ask not whether one lives in an enlightened or a barbarous age; but whether he is a true and noble man; not whether he dwells in a great city or in a desert, but whether the world of his consciousness is wide, beautiful, and high. Wherever we are, however surrounded and attended, we can not live except in our minds and hearts. If all is well there, the rest need give us little concern. Let us learn to trust the Power by which we live, and to place less reliance on what is adventitious. They who are too much defended and protected, whether by the church or the state, or the school, or the home, never acquire the courage and skill to defend and protect themselves.

The university student reaps the special fruit which such education should bear only when he acquires the philosophic mind, whose attributes, Newman says, are freedom, equitableness, calmness, moderation, and wisdom. "If any man," says Bacon, "thinks philosophy and universality to be idle studies he doth not consider that all professions are from thence served and supplied. And this I take to be a great cause that hath hindered the profession of learning, because these fundamental knowledges have been studied but in passage." In the university the student finds men who really know what they are supposed to know, whose knowledge is derived from original sources and habitual self-activity, and who, while they teach, continue to drink at these fountain heads. They themselves keep growing, and therefore they have the power to stimulate growth in others. Not all, indeed, possibly not many, are such men; but if there be one or two they will become known and be followed; for the larger liberty granted in universities tends to bring the seekers after wisdom under the influence of the best masters; since students, more than others it may be, have a horror of bores, and will, if this be at all possible, flee the halls where they set up their melancholy chairs.

If university students live and die commonplace men or worse, they never were

in a true university or they never should have been in any. At the best the school can but stimulate and guide in the work of mental and moral discipline. The decisive thing for each one, if there be any special significance and value in his life, is not what he is taught, but what he teaches himself. The business of education is "to strengthen man with his own mind," and this each one must learn to do for himself. But the young are little able to abstract for themselves, and if they are to walk in the light of true ideals they must be proposed to them in concrete form in the home, in the school, in the church, and in the state. The feebler their reason, the greater their readiness to follow examples. Hence the all-importance of character in the parent, the teacher, the priest, and the ruler. Nothing is so delightful and bracing as the company of the wise and magnanimous. They create a climate in which the soul prospers, in which it is easy and natural to think great thoughts and form high resolves, in which youthful minds, as Plato says, seize on knowledge so readily that they seem to have come from a previous life and to be picking up again what they had known, not learning something new. Is it credible that influences which remain associated with dullness, monotony, fatigue, and fear should be perennial sources of joy and strength? Things will never improve so long as teachers take up their daily task, not in the spirit of sowers and reapers, who sing in the pleasant air, but in that of hirelings who must work or starve.

Where the young are rightly taught, books and teachers suggest glad thoughts. We tell them that their school days are the happiest and it is our fault that they find it impossible to believe us. The world composes its countenance to the expression assumed by the king, and since great men are rare and are not to be found in many places, therefore must there be a center, a university, where they may lead their lives and set up their chairs of high and contagious wisdom; where, separating themselves from the noise and tumult of current events, they may acquire an enlargement of view, a depth and elevation of thought, which will give them power to mold and fashion hearts and minds; where they may be surrounded by the privileged few, who crave knowledge as the eye light, not chiefly with a view to its use, but because it is essential to the perfection of man's nature, in whom this craving, slowly gathering force, deepens into a passion, and urges them ceaselessly onward, as saints are drawn by the ideal of holiness, as the purest souls are attracted to God, and who therefore stand forth from the multitude whose mental curiosity is soon satisfied and becomes a merely mechanical habit. The teacher is worth what the man is worth.

Great teachers make great schools. Socrates is the first university man. He is followed by Plato, who is succeeded by Aristotle, and they are still the masters of those who think, for they pursued and taught philosophy as a theory of knowledge and life, and there is and has been no great school in which this study is not carried on in their spirit. Alexander the Great, a pupil of Aristotle, in founding a city at the mouth of the Nile, established there, about three hundred years before the birth of Christ, the first university with a distinctive form and organization, and it soon attracted the most eminent scholars, and became a center of inspiration and light for nearly a thousand years for the studious youth of the civilized world, among whom were some of the most famous of the Christian doctors. When we think of Athens, Rome, Alexandria, Paris, Oxford, and Koenigsberg we think of the great, wise, and laborious men whose names are forever associated with them, men whose religious, moral, intellectual, and esthetic genius has illumined, ennobled, and strengthened the race to which they belong. These centers whence has radiated so much of the best we know and love, never lose their interest, because the lives of genuine and enlightened men can never cease to charm and help. What divine purposes does not a real center of the highest intellectual and moral life serve? If we are to have good primary

and secondary schools, good academies and colleges, we must first have genuine universities.

Progress spreads from the summits, as the sun gilds the mountain tops before its light floods the plain. It is in the university that the science and art of education, its history and methods, are studied to best advantage. It creates a demand for more thorough preparatory training. It keeps up a succession of scholars devoted to the pursuit of philosophy and literature. It is not its business to supply legal, medical, and clerical practitioners. The professions, in one way or another, take care of themselves. Its function is higher. It encourages those especially who pursue the study of the arts and sciences for the pure love of knowledge. Whether or not it fit a man to achieve what is called success, it will fit him to live wisely and well, like a gentleman and a scholar. In the university are taught the same things which are taught elsewhere, but there they are taught in a purer atmosphere, in a more liberal and disinterested spirit, in the midst of a body of men who represent the whole cycle of knowledge, who are themselves learners as well as teachers, whose enthusiastic and unselfish devotion to culture, religion, and morality keeps them young, hopeful, and vigorous, making their presence magnetic and their words vital.

Thus it forms spiritual leaders—those who give direction to the thoughts and deeds of the many—men whose minds have been trained and disciplined by studies which have no direct practical end, who take delight in intellectual exercise for its own sake, though their knowledge should have no other value than the enlargement of view it gives them; who deem their gain sufficient if they have learned to think and love great thoughts instead of little thoughts; who, having made themselves a home in their own breasts, feel that palaces and the society of the fairest are poor and paltry in comparison with the worlds they find there; who, clearly perceiving that the essential unity of religion, philosophy, and science is a postulate of reason, hold fast to this root principle and move forward, undisturbed by doubts, denials, and controversies which but waste strength. In the Middle Ages it was the universities of which Rome was the kindly and genial nurse that roused Europe to a sense of its need of greater freedom and wider knowledge. Had it not been for them little intellectual progress would have been made. In our own country, had we harkened to those who were never weary of asserting that the time had not yet come to found a Catholic university, we should still be standing on the river bank, like the rustic of whom Horace speaks, waiting for the waters to run by. The waters will flow on forever and forever, and they alone who have the courage and skill to swim or bridge the stream take possession of the promised land of a richer life. To expect that the lower schools should rise to greater efficiency and thoroughness when they lack the example and inspiration of a university is to show oneself ignorant of the most important educational lesson which history teaches.

Whatever may be thought of the moral and religious progress or regress of America, there can be no doubt that our institutions of higher learning have now for more than a quarter of a century been making rapid advances.

All that zeal, ability, and exhaustless financial resources can accomplish is being done in every part of the country to found, maintain, and improve universities; and the work is destined to proceed with increasing power and speed. It has the approval of public opinion, it is supported by the state, and it enlists the generous, almost lavish, cooperation of men of wealth. It is a protest in favor of the higher life, in the presence of the materialism and greed which threaten to overwhelm us. We feel that to be satisfied with what ministers chiefly to physical needs and comforts is to be superficial and vulgar. A noble nature yearns and strives ceaselessly for the things that feed the mind, the heart, and the conscience. We have come to understand that education in the true and large sense of the

word is our one means of improving men, and that it is a delusion to imagine that a reform which is not based on education can be either deep or lasting. The church which is not also a school exerts no vital influence. What is external is perishable. The source of life is within, and the stronger, the purer, the more conscious of itself it becomes the more is the soul filled with immortal hopes and loves.

This is the root idea of progress, of the progress which enters as an essential element into our conception of life, of the progress which is the soul's effort to realize itself. It begins, indeed, with the environment; for they who have no thought of improving their material surroundings rarely have a desire for intellectual and moral advancement. Material progress enables us first to provide for our physical existence, for health and comfort and length of days, but its proper human value consists in its power to minister to spiritual uses. Mere animals can do something for their physical well-being, but man alone is able to think and act in obedience to eternal laws of rightness. Where there is justice, morality, liberty, and good will there is civilization; and where these virtues are found in the greatest perfection there is the highest civilization. Knowledge is power as money is power; but it is power for good only when it belongs to rightly trained minds and worthy characters. The weak, the superficial, and the incompetent are easily overburdened with knowledge, as the foolish, the prodigal, and the sensual sink beneath a weight of gold; and they who hope to obtain good results by cramming the memory are as blind as parents who think it enough to make their children rich. A strong and flexible mind is better than much knowledge, a brave and loving soul than mountains of gold.

It is the radical fault of our education that instead of cherishing and developing that which constitutes man's proper worth, it is busy with imparting information about many things which are but feebly related to true human life. Human greatness depends almost wholly on moral energy. The mind does not illumine the depths in which the heart lives. Reason can not explain love; it can not explain religion which alone builds love's temple. For this cause mere intellectual culture is superficial, a refinement or a gloss, while religion is the power within which lies at the root of life and transforms the world. Philosophers, like anatomists, dissect what is dead, while souls, alive with faith, move forward to do and suffer. They ask not for arguments, for they are certain of themselves. But they are the mightiest in whom the power of religion is blended and interfused with the power of culture. They are great and luminous personalities, and personality is the highest fact we know. By personalities religion and culture are created, and by them they are preserved and propagated. In the great work the great person is always present as the great factor.

If ever and anywhere men of exceptional intellectual and moral strength were needed, they are needed by American Catholics, thrown as a minority, burdened with many disadvantages, into the midst of the eager, self-confident, and all prevailing democracy of the New World. Here the church lives and acts in virtue of its own power, neither having nor desiring the support of the state, content to lack the privileges which in other ages resulted from social conditions unlike our own. We could not have these privileges if we would, and could we have them they would hurt, not help us. It is enough that we have the rights which in a free country belong to all alike—freedom to teach, to publish, to organize, to worship. Liberty has, indeed, its inconveniences, its dangers even, but the atmosphere it creates is the native air of generous, fair, and noble souls; and where it is not, man's proper good and honor are not found.

God says St. Anselm loves nothing so much as the freedom of his church. In America it is free, free in the only way in which it is now possible for it to be free anywhere, free in the midst of the general liberty of a free people. To lament

that we are fallen on evil days would show lack of knowledge, lack of faith. Things have never been right in this world. God made it, not we. Let us take it as it is and do the best we can. Is it not much that here and now the people whom Christ loved are better fed, clothed, housed, and taught, more thought of and cared for, than they have ever been since time began? Shall we complain because here the priest is respected only when the man is worthy? Shall we murmur because here the word of God issuing from minds and hearts that are alive and faithful penetrates more surely and reaches farther than the splendor and pomp of ceremonial worship? Shall we regret the vanished power of prince-bishop and abbots, who were feudal lords? Is it an evil that if the rich and high placed are drawn to the church, they are not drawn by the hope of temporal gain?

Is it a grievance that here it is impossible that arbitrary and adulterous emperors and kings, in exchange for a protection of doubtful efficacy, should inflict upon us their oppressive laws and disgraceful lives?

Shall we lose courage because we are thrown back on the inner sources of life, whence alone spring joy and strength? We are a minority, and what lesson shall we thence derive but that we are thereby pledged to devote ourselves with all the more zeal to the cultivation of knowledge and virtue and to the practice of good works? The majority, Plato says, are wicked. If the multitude belong not to us, there is all the more reason why those who are ours should be pure, sober, honest, and wise. Not by boasting of the great things the church has done, but by becoming true men and doing something worthy ourselves shall we best commend and show forth the faith by which we live. Liberty is of a boon, the source of the highest good, but it is also a burden, heavy with the weight of responsibility, on which depends man's temporal and eternal welfare; for the free must upbuild their being and bind themselves to the service of God and of men, or the keen air they breathe will intoxicate and drive them to mad excess. "Remember not former things," says Isaiah, "and look not on things of old." Here are we, here is our world, here is our work. We are always in the center of a universe, and whatever we do, whatever happens to us, is great if we but know how to make use of it. If we would labor for the future we must labor in and for the present. Unless we are inspired by the spirit of the age and country in which we live, how shall men know or love us? If we are not at home in our own time and fatherland, in the midst of what God makes us alive to see and do, when and where shall we find a home?

If we occupy ourselves with what is dead our vital power shall grow less; if with what is weak and unhealthy, we shall become morbid and ineffectual. Let us be busy with life where it is strong, wholesome, and fair. If our religion bring us courage, joy, and peace, we shall not rail at the faults of men, but shall rather strive from a happy and loving heart to lead them toward the light. Least of all shall we contend and wrangle among ourselves. The words which a bitter and harsh zeal inspires are from the devil and drive men to him. Spiritual gifts can never be communicated mechanically. He who does not bear them in his own mind and heart can not make them live in the minds and hearts of others. To believe otherwise is superstition—a superstition which is the bane of true religion. Disputes of theologians, like all quarrels, interest mainly the participants—others they annoy or scandalize. They spring less from the love of truth than from the narrow and unsympathetic temper which is often found in the professional mind and which has wrought infinite evil in the world. Medicine, law, and theology, when followed simply with a view to practice are not liberal studies—they rather restrict the mental horizon and subdue the mind to what it works in, unless it first be rendered supple, open, and luminous by philosophy, which is liberal knowledge, a gentleman's knowledge, and a chief scope of university teaching.

Genuine devotion to philosophy, religion, or culture is rarely found in envious and contentious spirits. Disputes please the ignorant and the prejudiced; and they who are least concerned for man's highest good are readiest to wrangle about trifles. The air the true student breathes is pure and serene; the thoughts with which he lives have permanent value, and they are interfused with mild and kindly sentiments. His view is large, and he is tolerant of the little things which irritate the vulgar. He knows that truth does not reveal itself in the storm of controversy, which settles nothing. He cares not for place or popularity, and therefore has not the disposition which makes jealousies and rivalries possible. His clearer vision of the past gives him a greater and more real view of the present. In the dim and sober light of dead empires and civilizations fallen to decay he sees how vain are most of the things which we permit to disturb our peace. He knows that doubts and difficulties are best overcome by doing and suffering, not by arguing and fault-finding. And he understands how easily they who accustom themselves to a circle of narrow thoughts and loves come to think it profane to see God everywhere, and settle in their microcosm, believing it to be His universe. He will not disturb them, for so it is for them. He is aware, also, that the worst egotism is not individual, but corporate; that those who as individuals are kindly or even generous lose conscience and grow hard and unrelenting when there is a question of their party or their clique; and that thus what is called patriotism, or what is called religious zeal, has led men to commit the most atrocious crimes. His prayer is that of Isaias: "Only let peace and truth be in my days." "Let others wrangle," says St. Augustine, "I will wonder."

The true student, drawn by a disinterested curiosity and admiration, occupies himself with the great problems of philosophy as the highest means of intellectual culture. No other discipline gives such distinction to the mind or so reveals the soul to itself when it is taught and studied in a free and noble spirit. What is it but the art of thinking applied deliberately to the questions which most profoundly interest man, and which each one, if he is to rise above the level of vulgar opinion, must solve for himself as best he may? It is the most human of all efforts, the effort of man to know himself, to get insight into the mystery of being and life, of spirit and matter, of time and eternity, of God and the soul; and though one should hold that such effort can never attain its object, it must be admitted that it is a noble mental exercise and the source of pure and enduring delight. It is easy, as it is popular, to speak of metaphysics as empty and sterile studies; but it is easy, also, to be shallow and crude in one's views; and if there be any sphere where the opinions of the many have little weight it is that of pure thought. But those who decry philosophy, like those who decry religion, labor to no purpose, for so long as men continue to think philosophy will interest them, and so long as they continue to believe, hope, and love they will turn to God.

Philosophy, certainly, like religion, may be a pretense merely, but for those who enter the inner sanctuary it is wisdom and strength and joy. Nothing else emancipates so effectually from the tyranny of fact or guides so securely across the treacherous sea of theory. It educates the spiritual even more than the intellectual man, and this is the basis of individual character, which is itself a chief support of humanity. Faith gives direction to our aims and aspirations, hope strengthens and upholds the will, love expands our whole being by making the not-ourselves ours, while philosophy holds the lamp which illumines our pathway through the universal labyrinth. Its soft and equal light shines in the pure regions where the soul delights to essay its wings; where it breathes an ethereal air which gives it steadiness of purpose and enduring power; where it learns to feel how slight a thing is fame itself compared with the vision of the eternal, with the knowledge that wisdom is truth, that truth is love, that love is God. Philosophy leads us into the company of "great thoughts, grave thoughts,

thoughts lasting to the end," where we hear the words of the first world teacher exhorting us to take part in the great combat, which is the combat of life and greater than every other earthly conflict. If we are to be freed from ignorance and sin, our deliverance must be wrought from within. Not so much our circumstances as ourselves must be changed. As soft beds and every kind of delicacy fail to make comfortable those who are ill because the source within has become sluggish and its waters bitter, so nothing external can make us free and joyful if we are prisoners of our own base passions. Without philosophy, in a word, even the most learned men have but a kind of encyclopedic ignorance, for if it bind not the whole it is all chaos.

Whatever scope we may assign to university teaching, whether with Newman we call it liberal knowledge, or with Virchow, general scientific and moral culture, together with the mastery of one special department—whatever the scope, a true and living philosophy is its first and most essential means of discipline. Where this is lacking there is no university. It is this that lays aright the deep infinite foundations of religious faith; it is this that points out the absolute need of moral culture and conduct; it is this that shows how every talent may be developed and every susceptibility satisfied; it is this that assigns a place to every advance of science; it is this that teaches us to welcome men of exceptional gifts whatever their calling or their work; and unless we know how to welcome our greatest men, to give them opportunity and encouragement, to enable them to put their abilities to right uses we are barbarous or decadent. The earth is fit home for a race of much higher average moral and intellectual power than the human has ever attained; and if we are to gain wider life and reach higher plains; if, when degeneracy comes, as it comes to all, we are to leave an eternal memorial of ourselves, we must learn to love and follow the wisest, the best, and the mightiest. In the light and guidance of individual minds of exceptional insight and strength the slow crowd must grope its way to higher things or not rise at all. Whether or not universities shall be ultimately able to maintain their freedom under a democratic social system is a problem. As civilization becomes more complex, the means of oppression and tyranny increase, and if the multitude are permitted to degenerate their jealousy and hatred of superiority will become intensified.

Sparta and republican Rome became strong by sacrificing philosophy, art, and literature to the requirements of a merely practical and civic education. And this, it would seem, is the tendency also of the social democracy. It is a false and downward tendency. Individual man does not exist for institutions—they exist for him; and the practical side of life is valuable only so far as it ministers to the spiritual. As the possession of a world could not bless one who is ignoble in himself, neither could it give worth and distinction to a nation whose citizens are ignorant, base, and venal. This is the teaching of Christ, and it is this teaching which has made the alliance of Christianity with philosophy inevitable, even as the doctrine of the brotherhood of the race has led to that of the equal rights of all, and thus to the rule of the people. "But, however, vox populi vox Dei has prevailed as a maxim," says Locke; "yet I do not remember wherever God delivered His oracles by the multitude or Nature truths by the herd." When the world is rightly governed it is not governed by the many, but by the wisest and the best. The genius, the hero, and the saint can not, indeed, be explained by the schools in which they have been taught, but a true school is none the less our most effectual means of forming true men. Self-made men are poorly made. The higher and the holier the cause the higher and holier should the leaders be.

Here in America we Catholics have a twofold work to perform, and higher or holier task God never intrusted to human agents. We have to upbuild and firmly establish in this new world of universal opportunity, feverish energies,

and tumultuous passions, the church which has been handed down to us through the centuries, and which sprang from the mind and heart of Christ, uttering himself on the cross; and we have to do our part in purifying, uplifting, and civilizing the masses to which we belong, and who, if they are to be and to remain capable of self-rule, must be taught by science, morality, and religion to govern themselves. Knowledge alone will not suffice, and a merely philosophic morality has no significance or efficacy for the multitude. The moral dynamics of a people lie in its religion. Society rests on conscience, not on science. "Religious education," says Balzac, "is the great principle of the life of society, the only means of diminishing the total of evil and of augmenting the total of good in human life. Thought, the foundation of all good and of all evil, can not be disciplined, controlled, and directed except by religion, and the only possible religion is Christianity, which created the modern world and will preserve it."

The Catholic view of education is the result of genuine insight into man's true nature, which is sacred and godlike. To educate him merely with a view to his ease, comfort, enjoyment, and dominion over material things is to take him out of the divine element in which he belongs. Do we not all recognize that to quicken the wits and leave the conscience untouched is not education?

Is not the most vital question which Americans can ask themselves this—How to make our schools centers of moral influence? Can we not see ominous signs of degeneracy in the greed which everywhere is eating away the public conscience, in the universal craving for indulgence and luxury, in the dying out of the sense of honor and of the sacredness of the oath, in the loosening of the marriage tie, in the loss of obedience and reverence in children, in the worship of success, in the exaggerated confidence in the power of machinery, in the turning of the theater into a forecourt of the temple of Astarte, in the popularity of coarse mockers, for whom nothing is holy, who are little else than intellectual malefactors? Is there not need of making our schools centers of moral influence, all the more urgent because most of the churches seem to be drifting away from the eternally vital truth into mere sensationalism? How shall we make the school a center of moral influence? The answer is not difficult. Morality, like culture, like religon, is propagated, not evolved. The devout communicate the spirit of piety, as the luminous mind rouses those on whom its light falls. Character builds character. Which are the virtues that make man worthy and strong? Are they not truthfulness, sincerity, reverence, honesty, obedience, chastity, patience, mildness, industry, politeness, sobriety, reasonableness, perseverance? Who, then, can propagate these virtues? They in whom they are living powers; they and they alone.

National regeneration is not possible without moral regeneration; moral regeneration can be wrought only through a right education of the whole man and the whole people, and this can be given only by men and women who live in the mind, in the heart, in the conscience, whose souls are filled with light and suffused with love; who have made it impossible for themselves to take pleasure in any amusement or occupation whatever unless they can in some way make it contribute to their own improvement and so to the common good. The first thought in every true university is to mold and fashion men, and only in so far as they are a means to this end do refinement, polish, taste, and learning become an aim and ideal. Style and form and various knowledge are important, but they are vital only when they help to express the truth known and loved by ardent souls, inspired by genuine enthusiasm and a great purpose.

To have right principles is an excellent thing, but the worth of a school can be known only through results. Education, like medicine, is largely a matter of experiment. Our schemes and theories are vain unless they stand the test of application. Are schools religious if they do not make men religious? Are they

educational if they do not make men moral? Is universal instruction a good if it weakens faith in the eternal principles which underlie right human life?

That we might have one center where our educational principles should be put to the test under the most favorable conditions this university was founded; that we might make it plain to ourselves that the patience, the self-denial, the unworldly temper, the persevering industry, which alone can mold great scholars and intellectual leaders, are still to be found among us, at least in a few; and that these few should become for us, who are thrown into the cares, distractions, and businesses of the world, as beacon lights to the storm-tossed sailor, as well-springs to thirsty travelers through arid plains, as the voices of valiant captains to their soldiers amid the clash of arms and the roar of battle; that when men tell us that our religion deprives us of mental freedom and of the power to pursue science in a disinterested spirit, we might, instead of having recourse to speculative arguments which are ineffectual, or of going back to past ages, which is not to the point, simply say, Behold our great school and the clear, searching light that is there turned on whatever most interests the human mind; that we, too, we the children of centuries of oppression and poverty, might now stand forth in the front ranks of thinkers and lovers of their fellows, to help illumine this great turbulent democracy, and guide it along the uncertain ways to fairer, wider, purer life; and that we might thus show that there is in our Catholic faith a power of self-renovation, that its vital principle has not been exhausted by the struggles of ages, but that it is destined some day to become the inner and organizing force of society, and will then reveal itself to the whole world in all the depth of its truth and in all the wealth of its blessings—for all this and much more the Catholic University of America was founded.

It came into existence in the midst of doubts, misgivings, and oppositions of various kinds. Its earliest history is one of difficulties and trials. Never before had American Catholics undertaken a work whose significance and influence should be as far extending as the country itself. Diocese after diocese had been organized; churches and schools, asylums and hospitals had been built at a thousand points; a numerous body of devoted priests and religious men and women had been formed; and the most seemed to be willing to rest content with this expansion and growth in numbers. But to some at least it was manifest that if this vast and rapid development of the church in the midst of the greatest democracy that has ever existed was not to end in decay or confusion, it was imperative that we should establish here a common center of the highest spiritual life—intellectual, moral and religious—where men of exceptional gifts might receive an exceptional culture; for such men are urgently needed everywhere, as heads of our dioceses, seminaries, colleges, and parishes. In positions of authority weak and ignorant men do greater harm than men who are wanting in virtue. The worst ruin both in the church and in the state has been wrought by those whose intentions were good, but whom a narrow and unsympathetic temper, a weak and vacillating purpose and an unenlightened zeal blinded and misled.

In a society like ours where there is little reverence, little respect for anything save power, whether it be power of money or power of mind, it is not enough that the priesthood be blameless. The painfulness of the preaching will distract attention from the holiness of the life. If we are to draw and hold public interest we must be able to do more than appeal to the authority of the church and the Bible; we must know how to speak to the god in each man's bosom. Like every true teacher, the priest, though he is not expected to say all that he knows, must survey the whole field of knowledge and be at home in every department of learning; for only they who know the whole can take up a subject with a master's skill and follow it in all its bearings, certain at each moment of their position. "Ignorance," says Benedict XIV, the most learned of the popes, "ignorance

is the fountain head of all evils," and when it is found in a priesthood it is always associated with inner decay, with indolence, indifference, and self-indulgence.

No laborer leads a life of such intense and unremitting toil as a real student. A voice cries out to him ceaselessly that he must renounce. "Do without! Do without!" This is its one message; for it is only by turning away from the hundred things men seek that it is possible to strengthen and temper the mind so that it shall be able to give itself wholly to truth. He is not a degenerate; he is one in whom life's current is rising; for in him the love of knowledge and virtue overcomes the love of ease and pleasure.

To give examples of such a life, to train a chosen few in this high and severe discipline, who shall then scatter throughout the land, as bearers of light and contagious enthusiasm—for this the Catholic University was founded. Quality and power of life, not numbers, is the aim—"holding himself to be a fortunate and a great king, not because he ruled over many, but over the best." That she may show her faith in this high enterprise and become a sharer in the spiritual good which here diffuses itself, Notre Dame opens this college to-day.

She comes, bringing with her the strong heart, the tireless energy, the dauntless spirit of the West. She comes not unknown or unattended, but bearing with her a noble name honorably won by long and faithful services to the cause of education. She comes, proclaiming by the enduring monument which she has here built, that when there is question of uplifting a higher standard of religious, moral, and intellectual life in America it is possible to put away all lesser considerations, to forget differences of place and race, to rise into spheres where petty rancors and jealousies disappear as noxious vapors melt away when the sun, from the mountain tops, looks forth on God's glorious world. She comes to declare that here we shall have not only a Catholic university but a school of schools, a mother of universities, a center around which our teaching orders shall gather to drink wisdom and to learn to know and love one another in the serene air of delightful studies, to breathe which is to grow tolerant, fair, reasonable, and mild.

Not all at once may this come to pass. As an original writer has to create the taste by which he is appreciated, so a true university must diffuse the light whereby its high and holy uses are revealed. Already much has been accomplished. In our teaching brotherhoods and sisterhoods a new spirit has manifested itself, fresh eagerness to learn, a more self-sacrificing zeal, a more joyful confidence in the absolute rightness of the cause to which they have given their lives. The heads of our colleges have come together and agreed to meet annually for the purpose of interchanging views and of reaching conclusions for the advancement of our schools. They are no longer content to accept mechanically the traditional pedagogical theories and methods, but they will have the light of the mind play on them, and will adopt those which reason and experience most approve.

Here, too, under the shadow of the university, Trinity College is even now rising, a monumental witness to our faith in the right of woman to upbuild her being to its full stature, to learn whatever may be known, to do whatever right thing she may find herself able to do. Those who stand with averted faces, looking ever backward to Europe, do not impress us. What sacredness is there in Europe more than in America? Is not the history of Europe largely a history of wars, tyrannies, oppressions, massacres, and persecutions? Has not its lust for gold made it a scourge to all the inferior races of the earth? Have not its people long stood face to face, arms in hand, ready to butcher one another? Why should Europe be an object of awe or admiration for Catholics? Half its population has revolted from the church, and in the so-called Catholic nations which are largely governed by atheists, what vital manifestation of religious life and power can we behold?

In any case we are in America, not in Europe, and to stand in the midst of this vast, advancing world, with averted faces, looking backward, is to sink out of sight and be forever lost as a living force. What country ever had fortune like ours? Where else has there ever been such opportunity for all? Where else has the Catholic Church ever had a wider or a freer field? Does not our Lord say speaking to His apostles, "They who are not against you are for you?" Now the vast multitude of those outside the church here are not against us, and are therefore for us. If we fail, the fault is in ourselves, in our timidity, in our indolence, in our lack of faith. What is there to make us afraid or despondent?

All the sciences prove and glorify God. All progress serves the cause of true religion. In immovable confidence in this principle, taking new courage from the happy omen of this day, let us bless the eternal Father that we are here to work for the church and for America, by doing what men can do to create a university which shall irradiate light and love, be a center of union and peace, and a nursery of the higher life.

XX.—State Universities.

Address of James B. Angell, LL. D., president of the University of Michigan, at the dedication of Academic Hall and the new department buildings of the University of Missouri, June 4, 1895.

* * * In response to your courteous invitation to me to address you, it has seemed to me that I might well ask you to consider what, in view of its organization, are the principal difficulties which the American State university has to encounter, what advantages it has to commend it, and what needs must be supplied to insure its success.

In our present study of State universities it will be convenient first to inquire what have been their chief embarrassments.

First. The business of disposing of the lands granted by the United States for their support has, in many cases, been badly managed, so that a large part of the endowment has been lost. In the early history of several of the States to which grants for universities were made the people did not appreciate either the possible importance or the future needs of a university, and therefore the proper disposition of the lands was not secured. It is not surprising that such was the fact. In some cases errors of judgment, in others, it is to be feared, the greed of speculators, who outwitted trustees and regents, caused lamentable sacrifices. The lesson should not be lost to the States whose lands are still within control.

If we may say so without seeming ungrateful, we may express our regret that the General Government, when making grants of lands for universities, had not given more of what it was then so easy to give. Doubtless when the first grants were made at the beginning of the century of two townships to each university, that was believed to be a very generous endowment. And so it was for the maintenance of universities according to the standards then prevailing. But the progress and elevation of the higher education have rendered necessary much larger revenues for the support of a university than the proceeds from the sales of the lands bestowed can furnish.

Second. A very common criticism on the organization of universities by the State is that political parties will interfere with them from partisan motives, and seek to use them in furtherance of party ends. Theoretically, that seems possible, but in fact, so far as I know, the good sense of our people has prevented this, as it has prevented such interference with the common schools. I think it may safely be predicted that any party which shall attempt to use either the universities or

the common schools for a partisan purpose will lose as it deserves to lose, popular approbation.

It is true, however, that there is a certain peril to the State university from the close relation which it holds to the public. If important differences arise within its governing board or its faculties concerning a line of policy, or concerning the fitness of president or professors for their positions, the discussion becomes more widespread and general and often more impassioned than it does when similar questions are before a close corporation which is practically responsible to nobody for its actions. Such political discussion of university questions is often conducted in large part by men who are fitted neither by reading nor by experience to speak as experts, and whose debates are therefore more heated than wise. No doubt it is possible to cite cases in which serious harm has been done by dragging universities and teachers into the public arena to be assailed by those who were quite incompetent to pass judgment on the question at issue, or were disposed to display their gladiatorial skill simply from the malignant ambition to pull prominent men down from honorable positions, and to cater to that base but too common desire to see them bespattered with abuse.

But, after all, while temporary harm and, in some cases, injustice to worthy persons has resulted from this exposed and open life of the State university, yet I believe that on the whole the university, like the general administration of the State, is the better and not the worse for being to some extent the subject of public discussion. It is thus made known to the whole State. The citizens learn that they have a responsibility and an interest in it. They can not be expected to bear taxation for its support unless its purpose and its management commend themselves to their favor. And therefore the more frankly and fully its life is laid bare to the people the better. The thing it has most to fear is misrepresentation. Under the fire of criticism and public discussion the State universities have, with some interruption, pretty steadily gained, and as a class are more vigorous to-day than they have ever been before.

Third. The State universities have had to contend with a more or less widespread impression that the conditions of their life are to some extent unfriendly to the development of a religious character in the students. Not a few men, speaking in the interests of denominational colleges, have displayed a pretty active zeal in disseminating this impression. The majority of those who desire a collegiate education for their children prefer to have them surrounded by influences which are helpful rather than hurtful to their religious life. The belief that such a life is discouraged rather than encouraged at any college would be an obstacle to its prosperity.

If a State university were open to this charge, it must be from one or both of two causes. It might be so because the regents took action which justified the charge, or because the faculties were made up of irreverent men, or from both these causes combined. It is said that there is nothing in the constitution of a State university to prevent filling the board of regents with irreligious or even vicious men. Sticking to the letter of the law, this is true. Sticking to the letter of the law, it is equally true that there is nothing to prevent us from filling the judicial bench with rascals. But, in fact, under the actual working of our laws, we do elect or appoint to the honorable and generally unrequited post of regents men who fairly represent the better sentiment of the State in regard to morals and religion, just as we do generally elect to the bench men fairly representing the higher stratum of character and talent of the bar.

The public sentiment of all our States is friendly to virtue and religion, and desires the cultivation of them in the young in a reasonable and catholic way, and it will not long sustain in power as a guardian of our schools of learning those who are actively opposed to this sentiment.

As to the faculties, it may be said without fear of contradiction that they are, as a rule, composed of men of exemplary life and of reverent spirit. Men of a different make do not generally incline to teaching as a permanent calling. If they do, they are rarely chosen to professorships in our higher institutions of learning. A large proportion of the teachers in the State universities with which I am familiar, as in all other American colleges and universities, are always actively engaged in work in church and Sunday school and in the religious meetings of students. I know of no kind of legitimate religious influence exercised on students by professors in any college which devout professors in our State universities may not and do not exercise, unless an exception be made in respect to religious services which students are in some colleges compelled to attend. And in my opinion the compulsory attendance on such services of students as old as those usually found in our State universities is of very questionable spiritual benefit.

It is, however, true that denominational colleges have one advantage over State universities in attracting religious students, particularly those who intend to study for the ministry. These colleges are generally furnished with scholarships endowed for the special benefit of such students. And, furthermore, those devout people who have a particular interest in the college controlled by their denominations are active in impressing candidates for the ministry of their communion with the belief that it is their duty to attend that college rather than the unsectarian university. These are, I think, the main reasons why the State universities do not furnish so large a relative number of graduates to the ministry as the denominational colleges, though they do compare favorably in this regard with some of the larger Eastern institutions, as, for instance, Yale and Harvard.

But with regard to the whole subject of the religious influences in and about the State university, I think it is time a frank and honest word was spoken to Christian men. All institutions of whatever kind are in the end controlled and managed by the persons who are interested in them and who take pains to shape their policy. If all men who have at heart the dissemination of wholesome religious influences in the State hold themselves aloof from the State universities and content themselves with criticising them, it may fairly be expected that the control of them will fall into the hands of men of different views. No one can reasonably doubt that the State universities are here to stay, for good or for ill. In accepting the United States grants of land for the maintenance of the university, each State has in reality bound itself to support such an institution. However, the States in addition have invested so much money in the plant, and so strong a sentiment in favor of the universities has been created, that they are certain to continue in some form.

Is it not, then, the part of common sense for all the good men of the State, however interested any of them may be in the support of other colleges, to exercise their legitimate influence as citizens in determining the policy of the university? In this prosperous State, whose future greatness is assured, it is certain that whatever your denominational colleges may do there will be work enough for the university to do—much of it work which the colleges are not likely to be able to do. See to it, citizens of the State, that the university is sustained by the sympathetic and active interest of all good men.

Fourth. The State universities have suffered from a certain instability of plan and purpose. This has resulted in part, as in the case of many independent agricultural colleges, from our inexperience in conducting such institutions. But it has also sometimes happened because one legislature has given the means to establish some department or some kind of work and the next legislature has failed to continue the needed appropriations. This uncertainty of plan is greatly to be deplored. It shakes the confidence of the students and of the public in the wisdom of the administration. It creates in the teachers a kind of solicitude

which is in a high degree detrimental to their work. We have now had experience enough so that we ought to be fairly agreed on what is the proper scope of the work of the university. We should be careful in filling out the broadest plan to undertake no department or work until there is a high probability that the time is ripe for it, and that it can have a permanent support if it proves successful. One legislature, of course, can not bind its successor to continue its appropriations. But the public mind may come to be as well settled, and in some States it is as well settled, concerning the necessity of continuing certain kinds of university work as it is concerning the necessity of continuing the maintenance of prisons and asylums. And certainly a legislature may not ruthlessly check the development of a department which has been begun in good faith by its predecessor and which is achieving good results. Still I fear that this danger can not be wholly escaped whenever a university is dependent on appropriations renewed annually or biennially by legislatures. But it is well enough to speak plainly on this subject and to remind legislatures that this instability of plan is a real and serious misfortune. The best plan to be devised for securing this stability of support is the enactment of a law providing for a tax of a fraction of a mill upon the property of the State. Experience shows that this tax law is not likely to be repealed, and of course the sum increases as the State grows wealthy, and so keeps pace in some degree with the increasing needs of a growing and prosperous university. Laws of this kind are now in force in Ohio, Michigan, Wisconsin, Minnesota, Nebraska, Colorado, and California.

We have thus considered, and with the utmost frankness, some of the chief difficulties which have thus far beset the path of the State universities.

Let us now consider some of the advantages which have accrued to State universities and to the public from their peculiar organization.

First. Most of these universities have saved to one, if not to two, generations the advantages of such an education as would otherwise not have been within their reach. The settlers of these Western States were poor, but generally intelligent and fairly educated. Not a few of them were graduates of colleges. They appreciated the value of advanced education. They desired it for their children; but they had not the means to send their children to the East or to found and maintain well-equipped colleges at home. The national endowment, however, supplemented in some cases by gifts of land by the States, sufficed for the founding of institutions and for the development of them within a few years to a strength which no college dependent on private benefactions could have reached for many years. But for the State universities, their children, and perhaps their children's children, would have looked in vain for the help of a college furnished for the excellent and varied work now done in this and other similar institutions. They have thus enabled the poor to gain an education, and in the days when these new States have greatly needed educated men. The few rich men could easily have sent their sons and daughters to Eastern colleges. It was of comparatively little consequence to their children whether the State provided a scheme for higher education. But it was of the first consequence to the children of the hardy settler who was rescuing a farm from the wilderness or the prairie. And it was of even greater consequence to the State that its population was not divided sharply into two classes—the men rich and educated and the men poor and ignorant. Wherever such a division exists you have all the elements of discord, strife, and civil war; but give the poor boy with brains and character education as good as the rich boy can have, and you need not fear an undue ascendency of the rich. The chances are, as all history shows, that the poor boy, the son of the day laborer or of the washerwoman, will take the precedence of the rich boy, whether in church or in state. If the contrary is the fact in any case, the rich boy deserves to lead, and his leadership causes no heartburnings or conflict.

Second. The State university crowns and completes the public school system, and, by strengthening it, blesses the State. It is constantly exerting an inspiring and lifting power on the public schools. It does this by furnishing competent teachers for the high schools. It is a maxim of experienced educators that a teacher ought to have received a more advanced education than is given in the school which he teaches. Those high schools which have relied simply on their own graduates for teachers have made a grave mistake. Such teachers can not, as a rule, bring to the school the stimulus which a competent college graduate can impart. The State universities in most of the Western States have naturally come into a closer, more nearly organic relation with the schools than the denominational college can establish. In this State and elsewhere the university has established relations with the high schools most fruitful of good to the schools, as well as to the university. The schools have been incited and helped to larger and better work. A virtual unity in the State educational system has been secured. The power of this unity is felt by the youngest and humblest scholar in the most primary school in the State. Every child, even the poorest, knows that this generous State has opened and made clear and easy to him the way from the modest schoolhouse to and through the university.

Who can say in how many souls this knowledge is to-day kindling an ambition and molding a purpose which shall give you gifted leaders in every branch of human activity? For, thank God, this gift of genius is bestowed with no partial hand. It is as likely to be found in the hut of sods as in the marble palace. And when with your lower schools you have kindled in the heart of a child the unquenchable flame of a worthy ambition for larger and richer intellectual culture, are we to starve his soul on the meager fare of the common school? Will we say, "Thus far shalt thou go in this divine quest after knowledge, but no farther?" If you are thus to tantalize him, if you are thus to fire his holy passion and then furnish him no means of gratifying it, one might almost say that you had better never made him conscious of the illimitable powers within him. At any rate, you can do nothing nobler, nothing more justifiable on the grounds of regard for the public good, nothing which will prove more beneficial to your State, than to introduce him to the treasures, the stimulation, the inspiration of a university like this. To reap the fullest benefits from its common schools, the State should crown them with the university, and give a unity and completeness to the whole educational system. The public schools find their logical sequence in the university.

Really, the same arguments which justify the maintenance of the public high school justify the public support of the university. The line which divides them is constantly changing. The high school to-day teaches branches which the university taught yesterday. Hardly anyone now advocates limiting public education to the elementary branches. All recognize the fact that society must have a large number of men and women whose education has been carried far beyond those branches. When society has furnished such persons with this advanced education, society reaps the benefits quite as fully as they. The advantages of such education can not be confined to the possessors of it. The teacher and the physician bless others by their labors even more than they reward themselves. Those who have gone forth from these halls are returning to the State far more than what their education has cost the State by their active and intelligent lives, by becoming centers of intellectual light and stimulus in various parts of the State, by their influence in helping to shape a sound public opinion, by their sympathetic support of public schools, and by all the thousand ways in which a person of cultivation and character blesses the community of which he is a part.

Third. The State university, with its comparatively ample resources, has not only furnished a good college education at an earlier date than it would otherwise

have been secured in most of our Western States, but it has furnished a greater variety of instruction in the collegiate department, and has also afforded instruction in technical and professional studies. Most of the Western colleges, not sustained by the State, have been compelled by their narrow means to do their work with small and overtasked faculties, and to restrict the range and variety of their work more than they could have desired. The larger endowments of the State universities have enabled most of them to make more generous provision for teaching than those colleges, to employ a larger corps of well-trained instructors, to furnish better laboratories and apparatus for teaching science by the most approved modern methods, to give instruction in engineering and in other applications of science to the arts, and in several cases to establish schools of law, medicine, pharmacy, and agriculture. They have thus brought within reach of all the citizens of the State, at a nominal cost to them, every kind of higher education, except theology, which is required for the best civilization of the age. They have stimulated the other colleges and every kind of institution of learning to a higher standard of attainment than they would otherwise have reached. In cooperation with our excellent public school system they have almost entirely saved the West from that wretched sham which long afflicted the East, the so-called female seminary, which gave girls the only chance they had for education, but which in so many cases gave only the thinnest veneer of an education.

In view of what has been accomplished by the State universities in their comparatively brief history, and of their promise of much larger usefulness in the future, have we any words but words of commendation for the wise and good men who, in laying the foundation of these new States, made generous and farsighted provision for the substantially free education of every boy and every girl, not only in the common school, but also in the university? The generations shall rise up and call them blessed. The States which find in every hamlet and on so many farms men and women with minds trained for the most intelligent discharge of every duty of life and for fulfilling with wisdom all the responsibilities of citizenship, will ever gratefully remember that through the provision of the fathers they have come to realize the platonic ideal of States, in which philosophers are kings. Not wells flowing with oil, nor mines teeming with silver and gold, nor plains covered with flocks and herds so enrich a State as noble men and women, equipped by training and culture to meet all the demands and high opportunities of our Christian civilization. That the State university is helping in a conspicuous degree to make her sons and daughters such men and such women must be its abiding glory, of which it can not be robbed.

Fourth. Even an institution which is rendering so great and useful a service as the State university can succeed in its beneficent work only in case the conditions of success are furnished. It has certain inevitable needs which must be supplied. Let us see what its principal needs are.

(1) Its affairs must be well administered by its board of curators, its chief executive officer, and its faculties. This may seem a commonplace remark. But an explanation of it will relieve it of its commonplace aspect. I mean to say that the proper administration of a university is a profession, a special business, which calls for experience and certain peculiar gifts in the administrators, and especially in the executive. The administration of the old typical colleges was comparatively simple. The curriculum of study was stereotyped. The faculty was small. The income needed was not large. The public, regarding it as something if not sacred yet mysterious to them and concerning them but little, never ventured to criticise any of its methods or its general policy. In fact, they gave very little thought to it. Almost any clergyman who could make a good appearance in the pulpit of his denomination and teach from text-books the elements of intellectual and moral

philosophy could fill the presidency acceptably. The trustees were seen at the college only during the crowded hours of the commencement season, and their business was usually performed in the most perfunctory way.

How different is the case with the State university, and, indeed, with many universities to-day. The courses of study are varied and manifold. They require large faculties and costly appliances. The annual expenditures are many times those of the college of other days. Not only must collegiate education be furnished by the university, but, in most cases, technical and professional training. Since it is under the control and dependent, in some degree, on the appropriations of the State, it is at once the pleasure and the duty of its officers to lay its affairs open to the public and to take all proper measures to keep the public acquainted with its operations. It must invite inspection and challenge criticism. It must be ready at all times to justify its policy before the people. Its curators, therefore, can not well be so neglectful of their duties as many college trustees permit themselves to be. They should keenly feel themselves responsible to the public for the manner in which they execute their trust. They should have meetings frequently enough to understand the affairs of the university and to decide upon the scope of its work and its general policy. They may safely leave, and practically they must leave, the details of the work inside the university to the faculties, reserving to themselves, of course, the right of ultimate control. Considering that they have generally been men who have engrossing business pursuits or heavy professional cares of their own, and that their labors as regents have been unrequited save by their consciousness of useful service, it must be admitted that they have for the most part been very faithful to their duties.

(2) It is in the highest degree desirable that the State university should, so far as possible, be understood and appreciated by the people of the State. To accomplish this is not easy. The proportion of the citizens of any State who can pursue their studies at any university or college is so small, the number of them who can ever even visit its buildings and grounds is so limited that it is very difficult to give to the great masses of the people an accurate idea of the precise nature of the work done at the university, much more of the method and spirit in which it is done. There is, therefore, a not unnatural tendency on the part of some to suppose that the university is a sort of aristocratic institution, intended to confer special privileges on a chosen few, and that it is conducted with extravagance. No pains should be spared by curators, teachers, and students to correct erroneous impressions on this point. By speech, by official reports, by the aid of the press, the indisputable facts should be made known that the overwhelming majority of the students in every one of these institutions are the children of parents who are poor or of very moderate means; that a very large proportion have saved by hard toil and by heroic self-denial the amount needed to maintain themselves in the most frugal manner during their university course, and that, so far from being an aristocratic institution, there is no more truly democratic institution in the world than the university; none in which wealth and birth pass for so little, and brains and character for so much.

So far as practicable, without neglect of their classes, the university teachers should improve such opportunities as offer to address the people of the State, especially upon educational, scientific, and literary themes, to manifest their interest in the public schools, and to show the people in every proper way that it is their interests which the university and all connected with it desire to subserve. I deem it of great consequence that the financial conduct of the institution should, with the utmost frankness, be made known to the State by publishing official reports. The more thoroughly people come to feel that the State university is their university, sustained in large part by their money, and for the benefit of

their children, and through these children for the benefit of the State, and that it is economically administered, the more strong and secure is the life of the university.

(3) The university needs, as a condition of success, that provision should be made for its growth and development. In this prosperous Western life, which increases wealth and population at so rapid a pace, the demands of the State university must constantly and rapidly increase. In these circumstances, for the university to stop growing is to begin to die. If it is not continually enlarging its facilities for instruction and improving its methods, so as to keep abreast of other first-rate universities in the qualities of its work, then it is relatively, if not absolutely, going behind, and bringing discredit on itself and on the State. If the State is not merely willing that it should grow, but, if still further it is not proud that it should grow, then the State had better kill it at once. Instant death is greatly to be preferred to death by starvation or torture. Men of high worth and noble spirit will not long work in an institution which is forbidden to grow and improve. If it is to have a wholesome growth, it must be conducted on some well-considered plan. It must be so supported and administered as to have a certain steadiness of life. Its abler teachers, whose ability and reputation give it a name, should be so compensated, and should be so sustained by the governing board and by the public, as to have comfort and a sense of security in their positions. It can not be too emphatically declared that it is not fine buildings nor great colleges that make a university, but gifted and learned men, endowed with the power and fired with the love of teaching and inspiring their pupils. If these can be retained on conditions which allow them to be reasonably free from solicitude, to enjoy intellectual independence, and to throw their whole energy and enthusiasm into their work students will flock to their rooms, sit delighted at their feet, and catch their spirit of scholarship and industry. And wherever you have great teachers and enthusiastic students you have a university, even though they dwell in log cabins, and teach and study upon the open prairie.

Nor should it be forgotten by any of us, especially should it not be forgotten by the students themselves, how largely the growth and prosperity of a university are dependent on the students. The regents and the faculties do not make a university. The regents, the teachers, and the students make a university. It is of the first consequence that the students appreciate the responsibility which rests on them in making a good name for the university and in promoting its prosperity. Nor are they generally delinquent in this regard. If occasionally they are tempted into youthful indiscretions, or if, with that affectation of cynicism which sometimes appears with the first sprouting of the beard, they indulge in overwise criticism of their elders, yet, as a rule, with a beautiful enthusiasm they sound abroad the praises of their favorite teachers, stand loyally by the colors of their institution in the face of all opponents, and gladly do what they may for its honor and glory. This comes, perhaps, generally from a wholesome and hearty impulse rather than from a consciousness of the power they really have to commend the university in all parts of the State, and so to build it up. The ardent affection of the graduates of a university is a richer treasure than the uncounted gold of a stranger. Who so well as these students that I see before me can perform that needed work of which I have before spoken, of making this university understood and appreciated by the thousands who can never see its real life. As the years go on, the students who have dwelt in these halls will be found in every city and town and hamlet and rural district in the State. If everywhere they shall have some good word for the dear mother, there will soon exist everywhere that public pride in the university which is the best guaranty that it shall have the means of healthy growth.

Fifth. Does not this study of the difficulties, the advantages, and the needs of the State university inspire us with hope for its future? The difficulties are not

insuperable, the advantages are positive and great, the needs can for the most part be readily supplied in these prosperous Western States. Each of these States has the territory and the resources of a European kingdom. There should be in each at least one vigorous university. Germany has one for each 2,000,000 inhabitants. Most of these States will at no distant day each have more inhabitants than that number. Some of them have more already. Can anyone who measures the strength the State universities have already attained cherish a doubt that the one great university in each one of these States, if there is to be one great university in each, will be the State university? Then the State in its legislation and the university in shaping its development should lay their plans in view of this fact.

Think of what a future this State may have before it. In area she is larger than England and Wales, and more than twice as large as Scotland. The population is about half larger than that of the Kingdom of Denmark. Lying in the very heart of the continent, favored with a matchless climate, watered by the two great rivers of the continent, teeming with agricultural, mining, and manufacturing resources, which can hardly be measured, with the amplest communications by river and by rail for the transportation of her abundant products to the markets of the world; with a population drawn from the choicest stocks of other States and of the Old World, a population abounding in energy, lofty in character, with a history lustrous with the achievements of men renowned in every honorable vocation, what elements of an imperial State, what assurance of a brilliant future are wanting to her? But with all these advantages, one thing she must make sure of, or they will prove powerless to retain for her that commanding position she has long held, and which you are hoping and predicting she will continue to hold. That one thing is a goodly number of men trained by the best education which the age can furnish them for leadership in all departments of human activity, for eminence in all branches of civic life. In the hot competition of these times those communities and States which produce the best intelligence and the loftiest character will press to the front. The whole nation is looking to the West, which is marching to the front with such tremendous strides, to wield the preponderating influence in guiding our national affairs and shaping our national destiny. But the West can not win this high honor, and does not deserve it, unless, while abounding in natural prosperity, she can rear generations of broad-minded, thoroughly-trained, high-souled men to speak and act for her in all posts of responsibility in the hour of the nation's need. In this great work may this State and her university do their full part.

XXI. THE SCHOOL SYSTEM OF CUBA.

Communication of "A. G. R." to the New York Evening Post of March 13, 1899.

RESULT OF AN INSPECTION OF THE MATANZAS DISTRICT. CHARACTERISTICS OF THE SCHOOLS UNDER SPANISH RULE. BRIGHTNESS OF THE PUPILS. RECOMMENDATIONS.

MATANZAS, *March 4.*

Through the courtesy of Maj. Gen. James H. Wilson, commanding the district of Matanzas, I am enabled to give the following review of a report made to him regarding the educational system in the province of Matanzas and the facilities provided for the instruction of the children of the district. The report was submitted by Maj. Eli D. Hoyle, chief ordnance officer on General Wilson's staff. A better appointment for the work could hardly have been made. Major Hoyle combines a broadly developed faculty of close observation with the training of

West Point and long service in the regular army, during a part of which time he has filled the post of military instructor. His work of inspection and investigation of Cuban schools has been admirably done, and his report bears the unmistakable marks of both breadth and thoroughness. As the same general conditions obtain throughout the island, the features of this report may be taken as distinctive and applicable to the whole territory.

Ten days were devoted to the inspections. Major Hoyle was greatly assisted in his work by Señor Claudio Dumas, the principal of the High School in Matanzas City, and by Señor Pablo Llorach, a merchant of the same city. Señor Dumas is a gentlemen of education and cultivation, who has traveled extensively in the United States and in Europe, making a specialty of the study of educational methods. His time, his strength, and his limited means have been unstintingly devoted to the education of the children of Cuba. Mr. Llorach is a Matanzas business man, who has had the advantage of an education in New York. The two investigated not only the schools of this city, but those of the country districts as well. From lack of space I am obliged to omit much that I should gladly include. Major Hoyle finds as follows:

Organization.—As organized under the Spanish laws, the public schools of Cuba are divided into two classes, the superior and the elementary. The elementary are divided into four classes, the first, second, third, and a very elementary group denominated "incomplete," and intended for small rural communities. The law of 1880 governing public instruction has been so modified by royal decrees and by regulations that the whole matter is complicated, difficult to understand, and much more difficult to execute. There is, in fact, no difference between the four classes of elementary schools. Much time and attention have been given to instruction in religion and sacred history, and no free thought in religious matters has been permitted.

Attendance.—Under the law, attendance was compulsory for children between the ages of six and nine, inclusive, but the law was never strictly enforced at any time. After the beginning of the insurrection it would have been impossible to enforce it on account of the poverty of the people, and the consequent lack of clothing, shoes, and even of food for the children. A Spanish regulation made obligatory the wearing of shoes at school, and this, as much as anything else, decreased attendance. The law was not enforced, and it is the fact that some children did attend who were destitute of foot covering, while others were provided with such crude substitutes as became possible for them. The deterring agent appears to have been less in the law than in the matter of personal pride. Shoe wearing became a matter of social caste, and pride and caste are an inherent trait of the race. Notwithstanding the law, school attendance in its operation is purely voluntary, even as to hours of appearance. Children seem to come and go pretty much as they please. The hours are generally from 9 a. m. until 3 p. m., with intermissions for recreation and for the customary midday breakfast. In some cases the schools begin at 7 a. m., and in some cases they close at 4 p. m. The laws recognize no distinction between white and black children, but unwritten social laws do have some measure of influence in that department.

A recent house-to-house census, made under the auspices of Professor Dumas, determined the number of school children in the city of Matanzas as 8,144. This included all between the ages of 7 and 18 years. Of these, 926, or less than 12 per cent, were on the rolls. Only 474, or less than 6 per cent, were in attendance. The largest number found in any one school was 56, and the smallest 7. Five hundred and forty-nine, including 21 colored, were found to attend private schools.

School buildings.—There are no public-school buildings. The structures commonly used for the purpose are private residences, occupied in part by the teacher

as a domicile. This often leads to an undue cramping of the space occupied for school purposes and can only result in inadequacy and limitation.

Teachers.—The high school (escuela superior) is an institution for boys only. It is provided with a principal and an assistant. The elementary schools have each one teacher, regardless of the number of pupils. The sexes are always separated, the boys' school (escuela de niños) being always in charge of a male teacher, and the girls' school (escuela de niñas), in its distinct building, always in charge of a female teacher. (How far this obtains throughout the rural district, I am unable to say, though I do not recall a single instance in which a mixed school was indicated.—A. G. R.)

School-teachers were appointed by the central authority at Habana, generally through favoritism, and with very little regard to qualification, though passing a nominal examination for fitness. This resulted in a frequent placing of Spanish teachers among children with whom they had little sympathy, and in magnifying the importance and the prominence of Spain in the instruction given. Teachers were paid a stated salary, and a fixed allowance was made them for house rent and stationery.

High praise is due to many of these teachers, who, amid hardships almost beyond belief, have kept the schools open during the years of the war, and have pursued their unselfish work with a devotion so rare as to deserve the admiration of the whole world. These teachers have received no pay whatever in many months. Their salaries are in arrears for periods varying from eighteen months to three years. They have pledged their personal credit for materials necessary for the schools, and in many cases it is not easy to see how they have obtained even their own daily bread.

Furniture and text-books.—The furniture of these schools is most meager and uncomfortable. It usually consists of long wooden benches, usually without backs, placed behind rude desks. The schools are generally provided with blackboards and maps of Spain and Cuba. A few had maps of the world and diagrams for explaining the metric system of weights and measures, simple geometric figures, etc. Text-books were those prescribed by the Spanish Government. They were deficient in number, of various editions, and many of them were old and worn by service.

Punishment.—As a rule no punishment was inflicted. This was because it was not often merited. The punishment which was given was of a mild type. The children are orderly, amenable to the discipline imposed upon them, and ambitious to learn.

Instruction.—In the elementary schools instruction is limited to reading, writing, and arithmetic for the majority, with geography, grammar, linear drawing, and the metric system for more advanced pupils. The children read fairly well, and their writing is unusually good. Irregular attendance was shown by some large children who knew very little, while some of the smaller ones were well advanced. The general system which is employed is antiquated. Instruction in arithmetic is especially poor. Mental arithmetic is but little practiced, and pupils generally follow purely mechanical methods. The fault lies in the instruction, for the children are remarkably apt and alert mentally. The girls are carefully instructed in needlework, Saturday being usually devoted to that branch. Some beautiful specimens of embroidery, drawn-thread work, and plain sewing were exhibited. Even the little ones are skillful with thimble and needle. Calisthenics is no part of the established school programme, but a few progressive teachers have taught a few simple movements with good results, and to the evident enjoyment of the boys.

Medical inspection.—Medical inspection for the prevention of the spread of contagious disease seems unknown. Cases of mumps and of itch were encountered

in schoolrooms. A teacher stated that during his thirty years of service in the schools no medical inspection had ever been made, and that no inspection of any kind had been made within the last ten years.

Characteristics of children.—The children of the public schools are decidedly quick and intelligent. They are docile, obedient, and ambitious, both to learn and to show their learning. They are greatly influenced by the capacity and the personality of their teachers, and a good teacher means a good school. On the whole, the material is promising, and these children give hope for the future of the island.

In the foregoing review of Major Hoyle's statements of the educational conditions I have sought as far as possible to confine myself to his expressions, and have, I believe, confined myself entirely to his views. My own more limited observation supports his experience in every particular. In the course of his comments Major Hoyle made one significant statement. "It is claimed," he said, "that the Spanish Government desired only a show of education, a system on paper; that useless restrictions were imposed; the attendance of children was discouraged; and that the schools and the teachers were continually subjected to neglect. What I saw lends color to this claim." Major Hoyle states his conviction that anything like violent changes in the school system of Cuba should be avoided in order to allow the people to adjust themselves by degrees to modern conditions. His idea is that change should come through a process of evolution which should be made as speedy as possible with due regard given to effectiveness. To that end he makes the following suggestions, which might well be immediately adopted, provided funds were obtainable for their prosecution:

(1) The location of the schools in city wards and in rural communities according to population, and in the best buildings obtainable until proper school buildings can be constructed.

(2) Abolition of small schools, below 25 pupils, where possible, and the making of the schools as large as will be permitted by the buildings selected.

(3) Mental, physical, and professional examination for teachers, with moral character as a sine qua non.

(4) The appointment of a superintendent of schools in each district, whose duty it shall be to direct and supervise the instruction and constantly to visit and inspect the schools in his department.

(5) The establishment of high schools for girls (there being none at the present time) for the encouragement of a much-needed higher education for women.

(6) The appointment of school boards, to consist of five members of the town councils, whose duty it shall be to examine teachers for fitness, and to appoint and assign them; to secure buildings for school purposes; to provide furniture, stationery, etc., and, in short, to manage all the business affairs of the schools. The question of attendance should be left to the discretion of the board, and should lead gradually to compulsory attendance.

It will be noticed that all these suggestions are purely elementary. Their most interesting feature lies in the fact that, in spite of their simplicity and their purely elementary character, no one of them has received the slightest recognition under the Spanish system.

XXII.—MATERIAL PROGRESS IN MEXICO.

[Extracts from message of President Diaz, September 16, 1899.]

MINING MATTERS.

The progress of mining may be appreciated by the number of new mining properties that have been acquired under the law on the subject. From July, 1892, up to the present date 10,099 titles, covering 86,426 "pertenencias" of one hectare, have been issued. The constant increase in the exportation of metals and ores of all kinds also affords the measure of the increase of the output. During the last fiscal year the exportation of mineral products, metallic and nonmetallic, was valued at $95,273,000, showing an increase of $3,835,000 over the exportation of the previous year. The increase in the exportation of gold, which exceeded by $2,633,000 the exportation of the previous year, is to be noted; and the same observation applies on a lesser scale to copper, lead, and antimony. The exploitation of copper mines is progressing, concessions for the operation of deposits of that metal having been applied for for the first time in the State of Colima.

The discovery of gold placers at a place called Santa Clara, in Lower California, aroused great interest both in this country and abroad, and attracted to the placers a considerable number of people, both miners and merchants. This gathering of miners and the nature of the placers required the establishment at that point of a new mining agency, the sending thither of an inspecting engineer, and the taking of certain measures which, while facilitating the exploitation of the placers, might prevent the disorders which are so frequent in such cases. With the same object in view, steps were taken by the war, finance, and interior departments, respectively, but as it has turned out that there is little gold at the placers and that living is very dear there, the greater part of the people who went there have departed again, and operations have subsided to the scale prevailing in other placers in the territory.

PUBLIC LANDS.

During the period that has elapsed since my last report 289,995 hectares of land have been converted into private property, either by grants of vacant lands, the sale of national lands to private individuals and colonists, free grants to poor farmers, compositions, and disclaimers as to the existence of vacant lands during the revision of title deeds. These transfers have been attended with the cancellation of $164,565 in securities of the public debt. The constant conversion of national lands into private property and the confirmation of titles that are more or less ancient, subject to the liberal provisions of existing legislation, as well as the improvement in methods of cultivation and concessions of water rights for irrigation purposes, have all been attended with a noteworthy progress in agriculture, the increase in agricultural production being evinced by the corresponding increase in exportation. During the last fiscal year vegetable and animal products were exported to the value of $49,500,000 in round numbers, showing an increase of $6,000,000 as compared with the exportations in the previous fiscal year.

ELECTRICAL MANUFACTURING PLANTS.

The manufacturing industries also give evidence of noteworthy progress, the following plants, which have been erected under concessions from the Federal Government for the utilization of water powers, being especially entitled to mention on account of their evident importance. The Industrial Company of

Vera Cruz erected a dam on the Rio Blanco in order to utilize a volume of water which, under a suitable elevation, produces 1,500 horsepower, consumed in the spinning and weaving factory of Santa Rosa, inaugurated in May of the present year. The Industrial Company of Orizaba constructed another dam on the Tlilapam River with a race of 1,700 meters in length, conveying the water to 4 turbines connected with dynamos, with a head sufficient to develop 2,250 horsepower. The electrical energy thus generated is transmitted along overhead wires to the cotton factory of the Rio Blanco. The San Ildefonso Company has completed all of its waterworks on the Monte Alto River, including an aggregate of 25 kilometers of races, with dams, sluices, and other engineering works of importance. Along the Tlalnepantla River 25 more kilometers of races are nearing completion. The ensemble of these works, with their respective electric plants, will produce an effective energy of 5,500 horsepower, which will be transmitted to this capital, for which purpose the line of posts for the transmitting cable has been completed, and work is in progress upon the receiving station. The above does not include the power that is already utilized in the San Ildefonso woolen factory. In the district of Atlixco, State of Puebla, another company has erected waterworks sufficient to produce 1,125 horsepower, to be utilized in a new spinning and weaving factory. Still another company has completed works on the Cuautitlan River of sufficient magnitude to produce 810 horsepower.

The concerns that have been mentioned have obtained concessions from the Federal Government under the new legislation governing water rights. Other similar undertakings of minor importance and without any special concession are being established at different points of the Republic. The development of the manufacturing industry is also proved by the increasing value of the exportation of manufactured products, amounting in the last fiscal year to more than $2,600,000, showing an increase of more than $700,000 over the preceding year. A considerable increase is also observed in the importation of machinery, copper wire, iron, steel, and coal. A corporation has recently been organized in Europe, composed of firms of high standing at Paris, Berlin, and Geneva, to undertake industrial enterprises in the Republic.

RAILROADS.

Since last April the railroad system has increased by 210 kilometers. The largest contributions to this increase are the Central's, 37 kilometers, on the branch from Yurecuara to Ario; the Xico and San Rafael Railroad's, 51 kilometers, and the International's, 21 kilometers, approximately, on its Guanacevi branch. The Mexico, Cuernavaca, and Pacific Railroad has been extended to the Mexcala River, and the road from Juile to San Juan Evangelista has been completed. The railroad system now aggregates 13,369 kilometers, including 193 kilometers of private branches connecting with the lines subject to federal jurisdiction, and 432 kilometers of tramways belonging to the States.

On April 29 last the general railway law was promulgated under the authorization granted to the Executive by the law of December 17, 1898.

ROADS AND BRIDGES.

The Texapan bridge in the State of Oaxaca has been completed, and thus the road from Chilchotla to San Antonio, a station on the Mexican Southern Railroad, has been completed. The contractor has also completed the Jayamita bridge spanning the Ameca River in Jalisco.

XXIII.—THE COMMITTEE ON THE NATIONAL UNIVERSITY PROJECT.[1]

On November 2 and 3 an important meeting of the National Educational Association's committee to make a thorough inquiry into the plan for a national university was held at Washington. This committee, it will be remembered, was authorized by the National Council of Education in July, 1898, and a report from it is hoped for in July, 1900. Twelve of the 15 members of the committee were present at the meeting recently held, namely: Presidents Harper, of Chicago University (chairman); Eliot, of Harvard; Schurman, of Cornell; Draper, of Illinois; Alderman, of North Carolina, and Wilson, of Washington and Lee; Librarian Canfield, of Columbia University; Dr. J. L. M. Curry, of Washington; Superintendents Maxwell, of New York; Soldan, of St. Louis, and Dougherty, of Peoria, and Professor Butler, of Columbia University. President Angell, of Michigan, and Professor Moses, of California, were unavoidably absent from the meeting, as was Professor James, of Chicago University, who is in Europe.

The committee devoted its first session to listening to the reports on topics previously assigned to some of its members for investigation. The first of these was the careful paper on the constitutionality of a national university by Professor James, which appears in full in this issue of the Review. Then followed short papers on the history of past efforts to establish a national university, by Mr. Canfield; on the bill now being urged upon the Congress by the so-called committee of one hundred, by Professor Butler; on the funds and bequests supposed to be available for a national university, by Professor Butler; on the action taken by the presidents of the land-grant colleges in asking the Government to extend to their students certain facilities at Washington, by President Harper; on existing educational institutions and agencies in Washington, by President Eliot; on the collections and establishments of the Government available for higher instruction and research, by President Eliot; and on the probable attitude of existing universities toward the proposal to establish a national university at Washington, by President Angell.

These reports placed before the committee in concise yet comprehensive form the information necessary to take up intelligently the main question before them. The committee had full and free discussion of the pending scheme and of some more acceptable and practicable method than it appeared to afford of utilizing the resources of the Government at Washington in aid of the higher education of the country. The committee finally agreed unanimously upon the following five propositions, much time and care having been devoted to the formulation of the fourth one:

1. It has been, and is, one of the recognized functions of the Federal Government to encourage and aid, but not to control, the educational instrumentalities of the country.
2. No one of the bills heretofore brought before Congress to provide for the incorporation of a national university at Washington commends itself to this committee as a practicable measure.
3. The Government is not called upon to maintain at the capital a university in the ordinary sense of that term.
4. That a subcommittee be requested to prepare for consideration by the full committee a detailed plan by which students who have taken a baccalaureate degree, or who have had an equivalent training, may have full and systematic advantage of the opportunities for advanced instruction and research which are now or may hereafter be afforded by the Government; such a plan to include the cooperation with the Smithsonian Institution of the universities willing to accept a share of the responsibility incident thereto.

It is understood that the financial administration of this plan should be such

[1] From the Educational Review, December, 1899.

that, whether or not Government aid be given, there shall be no discouragement of private gifts or bequests.

It is understood that the scope of this plan should be indicated by the governmental collections and establishments which are now available, or as they may hereafter be increased or developed by the Government for its own purposes.

5. The Government, through the State Department, might wisely maintain in Washington a school for consuls, analogous to West Point and Annapolis, and, like those schools, leading to a life career in the Government service.

The subcommittee appointed under the fourth proposition consists of President Harper, Dr. Curry, and Professor Butler. A full report is expected from this subcommittee in February, as the full committee adjourned to meet in Chicago at the time of the meeting of the Department of Superintendence.

The fifth proposition, relating to a school for consuls, was referred to a subcommittee consisting of Presidents Wilson and Schurman and Dr. Canfield, who will also report in February.

It will be noticed that the action of the committee looks toward the fullest possible development and utilization of the educational resources of the Government at Washington, but in a manner which will involve the cooperation and support of existing institutions and agencies rather than the erection of a statutory university organized along the familiar university lines, and duplicating, at unnecessary expense, work already in progress in different States throughout the country. That a workable and helpful plan will be developed by the committee along these lines we confidently believe. Such a plan, by avoiding the difficulties and dangers of the scheme for a statutory university, while accomplishing all that is good or useful in that scheme, ought to obtain widespread, if not unanimous, support.

XXIV.—THE CONSTITUTIONALITY OF A NATIONAL UNIVERSITY.[1]

The chairman of the committee to investigate the project for a national university has requested me to prepare a memorandum upon the constitutional aspects of the plan for a national university to be founded and supported by the Federal Government in the city of Washington.

It is fitting that the question of the constitutionality of such an enterprise should be taken up and discussed first of all, for if upon examination it is the opinion of this committee that such a scheme would be unconstitutional our work would be very simple and limited to the formulation of one of two propositions. We should either recommend to the national council that, inasmuch as the Federal Government has received no authority to establish and maintain a national university, the national council should not lend its support to an attempt to carry out the undertaking, or, in case we become further convinced that such an institution would be desirable, our recommendation would be to the effect that the national council should assist in securing such an amendment to the Constitution as would enable the Federal Government to carry through the enterprise.

Probably the best way to present the subject to this committee is to give a brief account of the history of this project so far as it has involved the discussion of constitutional questions. All parties in the United States agree that the Federal Government is one of limited and delegated powers; that it is in no sense a depository of residual authority, and that it can have no power to establish and maintain a national university unless this power is given to it in the Constitution of the United States. All parties agree that the burden of proof that the pro-

[1] A report by Edmund J. James, of the University of Chicago, submitted at Washington, November 2, 1899, to the committee to investigate the project for a national university, appointed by the council of education, National Educational Association.

posed measure is constitutional rests upon the party urging the Federal Government to adopt it.

We can not accept the view, therefore, that such action would be constitutional unless we become convinced that the authority to take it is vested in the Federal Government by the Constitution of the United States. It is plain that no such authority is vested in express terms, as there is no mention made in the body of the Constitution of the subject of a national university, nor indeed of education at all, either elementary, secondary, or higher.

If this power has been vested in the Federal Government by the Constitution, it must therefore be by virtue of some implication contained in the powers which are expressly granted, or because it constitutes an essential or necessary part of some authority which is specifically enumerated, or because it is necessarily bound up in the very idea of a government such as that organized under the Constitution. It must be, to use technical language, either an implied, a resulting, or an implicit power. Under which of these heads such an authority may be placed, if we shall find it to be actually conferred, will appear perhaps most plainly, as suggested above, from an examination of the history of the constitutional discussions relating to this subject.

There seems to have been a general notion abroad in the country during the period preceding the drafting and adoption of the Federal Constitution that the new Federal authority would establish and maintain a national university at its seat of government. The current literature of the time contains many hints and suggestions to this effect, and there seems to have been a generally felt need at that time of some such central and adequately endowed institution in order to supplement the existing educational facilities of the country.

In the constitutional convention itself the project appeared on several different occasions. In Charles Pinckney's draft of the Federal Constitution, submitted to the convention May 29, 1787, a clause was contained in the enumeration of the powers of the new government giving to the Congress the authority "to establish a national university."[1] In James Madison's proposition to confer additional powers upon the Congress, made August 18, 1787, a similar clause was contained.[2]

When the report of the committee on revision came up for discussion on September 14, Madison and Pinckney united in the motion to insert in the amended and revised draft, from which had been dropped their former recommendations, a clause conferring upon the Congress authority to establish a national university.[3] Wilson supported the motion. Gouverneur Morris opposed it on the ground that such a clause was unnecessary, since the power proposed was already included in the grant of exclusive jurisdiction over the seat of government. Four States then voted to insert the clause, six voted against such insertion, and one State was divided.

The proposition to add this authority to the list of enumerated powers in the Constitution was thus rejected, but there was nothing in the minutes of the convention going to show the grounds upon which this rejection was made. Whether it was because the members of the convention were opposed to conferring such an authority upon the Congress, or because they thought it had been conferred by some other clause, and therefore did not need specific enumeration, does not appear.

It is interesting to note, however, that so far as the records of the convention show there was no objection to the principle of the proposition. No one hinted that it was not desirable to vest such a power in the Federal Government or that such an institution was not necessary or expedient.

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[1] Journal of the Federal Convention, kept by James Madison, edited by E. H. Scott, Chicago, p. 66.

[2] Ibid., p. 550.

[3] Ibid., p. 727.

The current discussion of the time contains many traces that the view of Gouverneur Morris expressed in the constitutional convention was correct, namely, that the Federal Government had received authority by other clauses than the one proposed to exercise such a function. There seems to have been a sort of general agreement that the new government had the power to establish such an institution if it desired, and there were many who urged the desirability of such an institution upon the attention of Congress and the country.

Washington himself, to whom this project was especially dear, and to whom it grew ever more precious as he approached his end, evidently took it for granted that the authority to establish such an institution had been conferred upon the Federal Government by the Constitution. In his second annual message, dated January 8, 1790, Washington declared that there was nothing which better deserved the patronage of Congress than the promotion of science and literature. He adds: "Whether this desirable object will best be promoted by affording aids to seminaries of learning or by any other expedients will be well worthy of a place in the deliberations of the Legislature."[1]

The Senate, in answer to this address, seemed to accept the view that the Federal Government had the function of promoting literature and science,[2] as did the House in its response to the same address.

By virtue[3] of the authority conferred upon Washington to set aside certain sites for the needed public buildings in the new District of Columbia, he assigned a site of nearly 20 acres for a national university. And in his message to Congress dated December 7, 1796, he urged in strong terms the establishment of a national university. The Senate, in its response, seems to agree that such a step would be wise.

At the same Congress the Federal commissioners appointed to lay out the city of Washington made a report to Congress, in which they urged very strongly the establishment of a national university in the city of Washington, in the District of Columbia, in accordance with Washington's proposal.

That portion of Washington's annual message referring to this subject and the report of the Federal commissioners upon the same topic were referred to a select committee, of which James Madison was the chairman. This committee made a report on December 21, 1796, to the following effect:

Resolved, That it is expedient at present that authority should be given as prayed for by said memorial to proper persons to receive and hold in trust pecuniary donations in aid of the appropriations already made toward the establishment of a university within the District of Columbia."[4]

It will be seen from this that the Federal commissioners, while in favor of establishing a national university endowed and supported by the National Government, did not feel that it was entirely wise to make such a recommendation, and proposed, therefore, simply that a charter of incorporation be granted to certain trustees to accept gifts or donations from private parties in furtherance of this purpose.

It will be noted, also, that this resolution speaks of appropriations already made toward such a university, referring doubtless to the lands set aside by the direction of the President for this purpose.

This recommendation of Madison's committee was debated at some length in the House. The friends of the motion urged that they were not asking the approval of the House for a motion looking toward the establishment and maintenance of a national university at Federal expense, but that they were simply

[1] Annals of Congress, First Congress, vol. i, p. 933.
[2] Ibid., p. 936.
[3] Ibid., p. 1052.
[4] American State Papers, Miscellaneous, vol. i, No. 91, p. 153.

asking for the incorporation of a board of trustees who might accept any money which should be given for this purpose. The opponents of the motion emphasized the fact that this would be a mere entering wedge for the establishment of an institution to be supported from the Federal Treasury. Madison himself declared that he would not vote for the report except with the understanding that the institution was not to become a burden on the nation.

It will be seen that this special proposition, therefore, was not for a national university in the sense in which we are using that term in our discussion, but merely for the establishment of an institution under the auspices of the Government, to be supported by private contributions.

Even so, the opposition to the proposition was so great that, after a debate of some two days, action was finally postponed by a majority of one, ostensibly to find out whether the State of Maryland might not grant this charter of incorporation instead of the Federal Government, and the motion was not again brought up.

There is no indication in the record of this debate that such a proposition was considered unconstitutional, at least by any great number of the members. The whole course of the debate went to show that such an institution, owing to the conditions of the time, difficulty of transportation, etc., would be largely a local and not a truly national enterprise, or went to show that education was something which the States ought to look after themselves, and in the support of which they should not be encouraged to expect aid from the National Government.

This action did not deter Washington from still insisting, wherever it was possible, upon the desirability of such an institution nor from his giving a considerable sum for its endowment.

In the following years the intense excitement over international relations, the struggle over the alien and sedition laws, etc., gave rise to keen discussions of constitutional authority, ending with the debates over the Virginia and Kentucky resolutions, in which the whole question of the powers of the National Government over against those of the States was canvassed as never before, and indeed but as few times since in the history of the country.

When Jefferson became President of the United States he urged, in his message of December 2, 1806, that the income from taxes should be rather applied to the great purpose of public education, roads, rivers, canals, etc., than to the reduction of duties on imports and other similar burdens. He adds: "I suppose an amendment to the Constitution necessary, because the objects now mentioned are not among those enumerated in the Constitution." From which it would appear that, in his opinion, the Federal Government did not have authority to establish a national university.

In his message of November 8, 1808, he says, speaking of the surplus funds in the United States treasury: "Shall the revenue be reduced or shall it not rather be appropriated to the improvements of roads and canals, rivers, education, and other foundations of prosperity of the Union under the powers which Congress may already possess, or such amendment to the Constitution as may be approved by the States." It will be remembered, however, that while Jefferson thought that Louisiana could not be purchased, and that money could not be appropriated for internal improvements under the Constitution, yet he not only negotiated the Louisiana purchase, and signed the bill to appropriate money in accordance therewith, but that he also, on March 29, 1806, approved the first Cumberland road bill, which involved the expenditure of money from the United States Treasury for the purpose of carrying out internal improvements within the States.

Madison, in his message of December 5, 1810, recommends "the establishment

of a seminary of learning instituted by the national legislature within the limits of their exclusive jurisdiction, the expense of which might be defrayed out of the vacant grounds which have accrued to the nation within its limits." In other words, he recommends a national university, to be supported, not by appropriations from the Federal Treasury nor by appropriations from the sale of public lands in general belonging to the Government, but by the sale of lands belonging to the Government situated within the District of Columbia.

The committee to whom this part of the President's message was intrusted in the House of Representatives declared in their report that, while Congress might incorporate a private seminary of learning for the benefit of the people of the District of Columbia, it had no authority to appropriate money from the Federal Treasury for its support. "The erection," they declared, "of a university upon the enlarged and magnificent plan which would become the nation is not within the powers confided to Congress." As to Madison's suggestion about the proceeds of vacant lands, they did not believe that such proceeds would amount to enough to make it worth while to start anything upon that basis, even if there were no constitutional impediments. They recommended that no action be taken in regard to the President's proposition relating to a national university.[1]

Madison, however, repeated his recommendation of 1810 in his message of December 5, 1815. A committee was appointed by the House to consider this recommendation, and reported a bill February 20, 1816, for establishing a national university based upon Federal appropriations. The attempt was made to call it up on April 12, but the House then refused to consider it, and on April 27 the bill was indefinitely postponed.

Madison, not deterred by the fate of his previous recommendations, urged this subject in his message of December 3, 1816, upon the attention of Congress in still stronger terms than in his previous message:

"The importance which I have attached to the establishment of a national university within the District of Columbia on the scale and for objects worthy of the American nation induces me to renew my recommendations of it to the favorable consideration of Congress."

The special committee to which this recommendation was referred made a lengthy report to the House December 11, 1816. It took the ground that "the means were ample, the end desirable, and the object fairly within the legislative powers of Congress," and consequently that a national university should be established, and in accordance with that recommendation it reported a bill to establish a university upon the basis of Federal appropriations.[2]

Mr. Atherton proposed, on the next day, December 12, 1816, an amendment to the Constitution conferring on Congress the authority to establish a national university; but the House refused to consider it by a vote of 54 to 56.

Mr. Wilde attempted to have the report of this committee considered by the House, but, failing repeatedly, asked finally for the discharge of the committee on March 3, 1817.

President Monroe, in his first message, December 2, 1817, recommended that Congress propose an amendment to the Constitution whereby it should be authorized to institute seminaries of learning. From which it would appear that, in his opinion, the Constitution conferred no such authority upon the Federal Government.

It was in the same message, however, that he expressed the same opinion in regard to the power of the Federal Government to appropriate money for the carrying out of internal improvements, holding that no such authority existed, and

[1] Annals of Congress, Eleventh Congress, third session, p. 79, February 18, 1818.

[2] Annals of Congress, Sixteenth Congress, second session, p. 258.

that, before such a policy could be adopted, it would be necessary to obtain an amendment to the Constitution authorizing such action.

But President Monroe experienced a change of view on this question, and his message to Congress on internal improvements, submitted May 4, 1822, in connection with his veto of the Cumberland road bill, marked an epoch in the constitutional history of the United States, as it gave us what has turned out to be an authoritative exposition of the meaning of one of the important clauses in the Constitution, and that in a sense different to that adhered to previously by Monroe himself, and by Madison and by Jefferson, and different to that underlying the general theory of the policy of the Government from its foundation; in harmony, on the other hand, with the views of Hamilton and Washington, and with the action of Jefferson himself, of Madison, and of the other Presidents—an exposition which was accepted by John Quincy Adams, by Andrew Jackson, and, generally speaking, accepted and acted upon by every succeeding President. This theory of constitutional interpretation is of especial importance to the subject in hand, since, if it be correct, there can be no doubt whatever of the constitutionality of Federal appropriations to a national university.

In his message[1] Monroe declares that his own opinion as to the power of the Federal Government over appropriations had undergone a profound change, and whereas he had formerly held that the Federal Government might not appropriate money for any other purposes than those specifically enumerated in the Constitution, he had now come to believe that the Federal Constitution in the first clause of section 8 of the first article conferred upon the Federal Government "an unlimited power to raise money, and that in its appropriation Congress has a discretionary power restricted only by the duty to appropriate it for the purposes of common defense, and of general, not local, national, nor State benefit"—in other words, that when the Constitution of the United States vests in Congress the power to lay and collect taxes to provide for the common defense and general welfare, it gives to that body power to raise any sum of money which it chooses, and to devote it to any purpose which in its judgment will promote the general welfare, subject to the limitation that it should be for the general, not the individual, for the national, not local, benefit.

In this message Monroe accepted the doctrine laid down by Alexander Hamilton in his celebrated report on manufactures made to Washington in 1791, "That there seems no room for doubt that whatever concerns the general interests of learning and agriculture, manufactures, and of commerce is within the sphere of the National Council so far as regards the application of money."

This is the only theory upon which all of the items in any of the general appropriation bills passed by the Federal Government from the time of Washington to that of McKinley can be justified.

It is the only theory on which the actions of Jefferson, as distinct from his pronunciamentos, can find a constitutional basis.

As said above, this doctrine was subsequently accepted, though under protest, by Andrew Jackson, having been fully adopted and acted upon by his predecessor, John Quincy Adams.

This theory of the power of Congress over appropriations has been accepted by the great commentators on the Constitution almost without exception.

Story raises the issue distinctly by asking the question: "May Congress appropriate money for any other purposes than those pointed out in the enumeration of powers?" His answer was yes, and based upon the following three considerations:

First, on the language contained in the first clause of the eighth section of the

[1] Compare Annals of Congress, Seventeenth Congress, first session, vol. ii, p. 1810.

first article, which can not receive any reasonable interpretation except in accordance with this view.

Second, on the nature of the power conferred, rendering it highly expedient that such a power should be given to the Federal Government, and indeed making it almost impossible for anyone to organize and administer an efficient central government without such authority.

Third, on account of the early, constant, and decided maintenance of it by the Government and its functionaries, as well as by many of our ablest statesmen from the very commencement of the Constitution.[1]

He then declares (par. 1274) that Congress may appropriate to any purpose which is for the common defense and general welfare.

This view was followed by Kent in his great commentaries.[2]

One of the most recent and one of the greatest commentators on the Constitution, Judge Hare, takes the same view.[3] He calls attention to a very interesting feature of this whole discussion, namely, that, owing to the principles of our constitutional law, it is almost impossible for the courts of the United States to decide this question, since it is primarily a question for the Legislature and not for the courts. He speaks of Monroe's recantation, contained in the message above referred to (p. 245), and says that it was, like that of Madison's of the earlier date, "a virtual adoption of the Hamiltonian theory, that the power of the Congress over the Treasury is in effect absolute as to the appropriation of money for any object which in their judgment will conduce to the defense of the country or promote its welfare. Such, in fact, has been the practice since the Government went into operation, and the right can scarcely be questioned in the face of a usage which will soon extend through an entire century."

It would thus seem to be as well established as any constitutional doctrine can be that the Federal Government of the United States may appropriate money to any amount for any object which in its judgment will conduce to the common defense and will promote the general welfare.

Surely under this head may be brought appropriations for a national university at the seat of government. The argument has sometimes also been advanced that the Federal Government might establish a national university under the authority given in the preamble, which declares that one of the purposes of ordaining the Constitution of the United States was the promotion of the general welfare. This argument deserves little attention, and would not be mentioned by your reporter if it were not that one finds it oftentimes urged in support of this and other measures in the current literature of the time. Such an argument certainly deserves little consideration. In the first place the preamble is a mere introduction to the Constitution and does not confer any authority whatever. It simply enumerates certain purposes for which the powers subsequently conferred by the Constitution were vested in the Federal Government. In the second place, such an argument leads to a reductio ad absurdum, since if the Federal Government receives from the preamble authority to promote the general welfare in any way which may seem to it good the whole idea of a limited or delegated government becomes baseless. The other provisions of the Constitution which vest authority, which enumerate powers, are idle and meaningless.

Two other arguments in favor of the constitutionality of a national university deserve, however, a brief mention.

It is claimed, namely, that the Federal Government has received power by the Constitution to establish and maintain a civil service, exactly as it has authority to

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[1] Story: Commentaries on the Constitution of the United States, 2d edition, Boston, 1851, paragraph 977.

[2] Commentaries on American Law, by James Kent, Boston, 1884, 13th edition, vol. i, p. 268.

[3] American Constitutional Law, J. Clark Hare, 1899, 2 vols.

establish and maintain a military and naval service, and that it has the implied authority to establish a civil-service academy exactly as it has established a Military and a Naval Academy; and if it has authority to do all this, it alone, under the generally accepted principles of constitutional interpretation, is to be the judge of what is an adequate civil-service academy and what is necessary to the establishment and equipment of such an institution.

Now, a proper training of men for the civil service, at least for all the higher branches of the civil service, is a training in the sciences underlying the functions of such positions, and the best training in such sciences can be afforded in the modern world through the medium of a properly equipped and properly managed university.

This is recognized, for example, in Germany, where the universities are declared by law to be primarily academies for the preparation of men for the civil service of the country, and to a smaller degree in England, where attendance at the university is a prescribed condition for admission to certain examinations in the civil-service department.

There is certainly much cogency in this argument, and it is difficult to refute it by any other argument than would overthrow the legitimacy of the academies which the Government has already established.

The view above referred to, which was expressed in the constitutional convention by Gouverneur Morris, that the power to establish a national university at the seat of government is included in the grant of exclusive jurisdiction over the District of Columbia, would seem to be also a valid one.

If Congress, by the grant of power over the Territories, may establish in those districts systems of education from the primary school up to and through the university, in districts which are being prepared for later admission as States, surely it may exercise the same authority in the District of Columbia, over which its jurisdiction in every respect whatever has been made absolute, subject to the restrictions of the Constitution, especially since this District can not be regarded as in any sense on the road to admission as a State, and, if it is to have proper facilities for higher education at all, must obtain them from Congress.

And if the Federal Government may establish a university as the head of the school system in the District of Columbia, there is no constitutional limit upon the manner in which that institution shall be organized, upon the amount of money which it may spend in its administration, or upon the purpose which such an institution may be made to serve.

Although the preceding considerations seem to have covered the ground in a general way, there is perhaps one other aspect of the case which, owing to its immediate bearing upon the special problem before us, should not be overlooked. That is the argument that the actual policy of the Federal Government in regard to education can not be justified constitutionally upon any other ground than would also justify the establishment of a national university.

The Federal Government has considered education, almost from the first hour of its organization, as a subject with which it had to do, and whose promotion should be near its heart. The ordinance of 1787 bound the Congress to promote the interests of education in the territory northwest of the Ohio River. And when this ordinance was reenacted after the establishment of the Constitution the same duty was taken upon itself by the Congress. In pursuance of this policy it appropriated from the public lands within the possession of the Government large tracts for the endowment of elementary and higher education. It is true that this referred at first only to the territory northwest of the Ohio River, but it was evident at a very early day that the people of the United States would not be content with the encouragement of education merely in the newer portions of the United States. The older States claimed, and with much justice, that all the

States under the Constitution were entitled to the same treatment, and that if the newer States received assistance in the development of their education from national resources, the older States were entitled to the same advantage. This argument seemed to be especially good, since the public domain out of which this endowment was made had been acquired by the common sacrifices of the older as well as the newer States. Consequently, we find a steady tendency on the part of the National Government to make grants of land for the promotion of education within the States.

This has become such a well-organized policy on the part of the Government that every decade, and, one may say, almost every year since the opening of the century, has seen considerable additions to the educational funds of the States from this source.

The principle received, however, a very clear recognition in the celebrated land-grant act of 1862, by which to each State in the Union were granted 30,000 acres of land for each Senator and Representative in Congress for the endowment of colleges for instruction in agriculture and the mechanic arts.

But President Monroe, in the celebrated message previously referred to, expressed a truth which is coming to be recognized and acted upon more fully with every passing decade, that no distinction can be taken between the appropriation of money raised by the sale of public lands and of that which arises from taxes, duties, imposts, and excises. And so the Federal Government, not content with granting lands by the act of March 2, 1887, granted the sum of $15,000 per year from the proceeds of the sale of public lands to each State and Territory for the establishment of agricultural experiment stations.

This policy was further followed in the act of August 30, 1890, for the further endowment of the land-grant colleges, by which the sum of $15,000 per year—to be increased by an addition of $1,000 more per year until the sum amounted to $25,000 per year—for each State and Territory was voted by the Congress of the United States out of the proceeds of the sale of public lands. If the Congress of the United States may appropriate $2,000,000 a year in cash from the Federal Treasury for the support of higher institutions in forty-five States in the Union, surely it may appropriate a similar or greater amount for the support of a single institution in the District of Columbia.

In view of the facts set forth in the above memorandum, it is the opinion of your reporter that there is a distinct grant in the Constitution of the United States to the Federal Government of the authority to establish and maintain a national university.

This opinion is based:

(1) Upon the grant of exclusive jurisdiction for all purposes whatsoever over the District of Columbia, contained in the seventeenth clause of the eighth section of the first article.

(2) On the right of the Federal Government to establish a civil academy for the education of its civil servants on such a scale and of such a character as in the judgment of the Congress may adequately serve the purpose.

(3) On the further ground that the constitutional history of the United States and the history of the Federal grants to education all go to show that our leading statesmen, including many of those who sat in the constitutional convention, have from the beginning to the present time maintained the view that such power was conferred upon the Federal Government.

(4) Upon the ground that the actual course of legislation by the Federal Government in the endowment of education can be justified only on the same principles as will justify, constitutionally speaking, the establishment and maintenance of a national university.

(5) On the further ground that the first clause of the eighth section of the first

article confers upon the Federal Government the distinct authority to appropriate money for any purpose which in their judgment provides for the common defense and promotes the general welfare; and that if, in the judgment of the Federal Congress, the establishment and maintenance of a national university would be in furtherance of the general welfare, then the authority to take such action is clearly and distinctly conferred by this clause.

XXV.—RELIGIOUS INSTRUCTION AND ITS RELATION TO EDUCATION.[1]

The problems of what is called religious education are part of the problem of education as a whole.

True education, as distinguished from the innumerable false uses of the word, is a unitary process. It knows no mathematically accurate subdivisions. It admits of no chemical analysis into elements, each of which has a real existence apart from the whole. When stretched upon a dissecting table education is already dead. Its constituent parts are interesting and, in a way, significant; but when cut out of the whole, they have ceased to live. They are no longer vital or truly educational. For this reason I hold that while there is and may be a religious training, an intellectual training, a physical training, there is no such thing as religious education, or intellectual education, or physical education. One might as well imagine a triangular or a circular geometry. We do not at once feel the force of this statement, because of our loose, inaccurate, and inexact use of the word education.

In my view education is part of the life process. It is the adaptation of a person, a self-conscious being, to environment, and the development of capacity in a person to modify or control that environment. The adaptation of a person to his environment is the conservative force in human history. It is the basis of continuity, solidarity. The development in a person of capacity to modify or control his environment gives rise to progress, change, development. Education, therefore, makes for progress on the basis of the present acquisitions of the race. Its soundest ideals forbid, as a matter of course, both neglect of the historic past and the blind worshipping of that past as an idol. The importance of the past lies in its lessons for the future. When the past has no such lessons, we forget it as quickly as possible. The survival of a tendency, a belief, or an institution is evidence that it is at least worth studying and that it must be reckoned with. These tendencies, beliefs, and institutions are studied and reckoned with for the purpose of discovering their vital principles and of putting a value upon them. The working out of those vital principles is the future.

In this view, education is first and chiefly a matter of principles. Then, and secondarily, it is a matter of methods. The place, character, and function of religious training are to be settled, and only to be settled, by reference to fundamental educational principles.

The first of these principles, and one of the most far-reaching, is discovered in framing an answer to the question, What is the present environment of a human being. What do we mean by the use of the word environment, and what do we include in it, when we speak of it as that to which education tends to adapt a person? We mean, I think, by the word environment, two things: First, man's

[1] An address by Nicholas Murray Butler, professor of philosophy and education in Columbia University, delivered in St. Bartholomew's Church, New York, October 14, 1899, under the auspices of the Sunday School Commission of the diocese of New York. Reprinted from the Educational Review, December, 1899.

physical surroundings, and, second, that vast accretion of knowledge and its results in habit and in conduct which we call civilization. Natural forces play no small part in adapting human beings to both elements of environment, but the process of education is especially potent as regards adaption to the second element, civilization. Civilization—man's spiritual environment, all his surroundings which are not directly physical—this it is which has to be conquered, in its elements at least, before one can attain a true education. It is of the highest importance that we make sure that we see clearly all the elements of the knowledge which is at the basis of civilization, and that we give each element its proper place in our educational scheme.

We may approach the analysis of our civilization or spiritual environment from many different points of view, and perhaps more than one classification of the results of that analysis may be helpful. The classification which I suggest, and which I have stated elsewhere in detail,[1] is a fivefold one. It separates civilization into man's science, his literature, his art, his institutional life, and his religious beliefs. Into one or another of these divisions may be put each of the results of human aspiration and of human achievement. Education must include knowledge of each of the five elements named, as well as insight into them all and sympathy with them all. To omit any one of them is to cripple education, and to make its results at best but partial. A man may be highly instructed and trained in science alone, or in literature, or in art, or in human institutions—man's ethical and political relationships—or in religion, but such a man is not highly educated. He is not educated, strictly speaking, at all, for one or more of the aspects of civilization are shut out from his view, or are apprehended imperfectly only and without true insight.

If this analysis is correct, and I think it is, then religious training is a necessary factor in education, and must be given the time, the attention, and the serious, continued treatment which it deserves. That religious training is not at the present time given a place by the side of the study of science, literature, art, or of human institutions is well recognized. How has this come about? How are the integrity and the completeness of education to be restored?

The separation of religious training from education as a whole is the outgrowth of Protestantism and of democracy. A people united in professing a religion which is ethnic or racial, or a nation giving adhesion to a single creed or to one ecclesiastical organization, always unite religious training with the other elements of education and meet no embarrassment or difficulty in so doing. During the undisputed dominance of the Roman Catholic Church in Europe, education not only included religious training as a matter of course, but it was almost wholly confined to religious training. Theology was the main interest of the Middle Ages, and the theological interest caused religious training to permeate and subordinate whatever instruction was given in other subjects. Music was taught that the church services might be well rendered. Arithmetic and astronomy were most useful in fixing the church festivals and the calendar. With the advent of the Protestant reformation all this was changed. Religion was still strenuously insisted upon as a subject of study, but the other subjects of instruction became increasingly independent of it and were gradually accorded a larger share of time and attention for themselves alone.

Protestantism, however, would not by itself have brought about the secularization of the school as it exists to-day in France and in the United States. Democracy and the conviction that the support and control of education by the State is a duty in order that the State and its citizens may be safeguarded have necessarily forced the secularization of the school. Under the influence of the Protestant reformation and that of the modern scientific spirit men broke away

[1] Butler, Meaning of education, pp. 17-31.

from adherence to a single creed or to a single ecclesiastical organization and formed diverse sects, groups, parties, or churches, differing in many details from each other, the differences, I regret to add, being far more weightily emphasized than the more numerous and more important points of agreement. When the State-supported school came into existence this state of religious diversity found expression in dissatisfaction with the teaching, under State auspices, of any one form of religious belief. The first step toward the removal of this dissatisfaction was to reduce religious teaching to the lowest possible terms; and these were found in the reading of the Bible, the recitation of the Lord's Prayer, and the singing of a devotional hymn at the opening of the daily school exercise. But even this gave rise to complaint. Discussions arose as to whether a single version of the Bible must be used in these readings, or whether any version, chosen by the reader, might be read. A still more extreme view insisted that the Bible itself was a sectarian book, and that the nonChristian portion of the community, no matter how small numerically, were subjected to violation of their liberties and their rights, when any portion of the public funds were used to present Christian doctine to school children, even in this merely incidental way. The view that the State-supported schools must refrain absolutely from exerting any religious influence, however small, is one which has found wide favor among the American people.

It has led to more or less sweeping provisions in State constitutions and in statutes against sectarian instruction of any kind at public expense. A judicial decision on this subject of great interest and of far-reaching importance is that rendered in 1890 by the supreme court of Wisconsin, in the case of the State ex rel. Weiss and others *v.* the District Board of School District No. 6 of the city of Edgerton.[1] In this case the essential question at bar was whether or not the reading of the Bible, in King James' version, in the public schools was sectarian instruction, and as such fell within the scope of the constitutional and statutory prohibitions of such instruction. In an elaborate and careful opinion the court held that reading from the Bible in the schools, although unaccompanied by any comment on the part of the teacher, is "instruction;" that since the Bible contains numerous doctrinal passages, upon some of which the peculiar creed of almost every religious sect is based, and since such passages may reasonably be understood to inculcate the doctrines predicated upon them, the reading of the Bible is also "sectarian instruction:" that, therefore, the use of the Bible as a text-book in the public schools and the stated reading thereof in such schools, without restriction, "has a tendency to inculcate sectarian ideas," and falls within the prohibition of the constitution and the statutes of Wisconsin.

In this decision there are some very interesting observations on the general question of religious training and the place of the Bible in education. The court says, for example: "The priceless truths of the Bible are best taught to our youth in the church, the Sabbath and parochial schools, the social religious meetings, and, above all, in the home circle. There those truths may be explained and enforced, the spiritual welfare of the child guarded and protected, and his spiritual nature directed and cultivated, in accordance with the dictates of the parental conscience." Judge Orton, in a supplementary opinion, adds: "[The schools] are called by those who wish to have not only religion, but their own religion, taught therein 'Godless schools.' They are Godless, and the educational department of the Government is Godless, in the same sense that the executive, legislative, and administrative departments are Godless. So long as our Constitution remains as it is, no one's religion can be taught in our common schools."

The supreme court of Wisconsin has in this decision given forcible, definite expression to the view held by the large majority of American citizens, and has

[1] Wisconsin Supreme Court Reports, 76: 177-221.

clothed that view with the authority of law. It is in this sense and for substantially the reasons adduced in the decision which I have quoted, that the American public school is secular and that it can give and does give attention to four of the five elements of civilization which I have named—science, literature, art, and institutional life—but none to the fifth element—religion.

In France, the great democratic nation of Europe, the case is quite similar. The famous law of March 28, 1882, excluded religious instruction from the public schools, and put moral and civic training in its stead. M. Ribière, in defending this provision before the senate, used almost the exact language later employed by the supreme court of Wisconsin. He held that the elementary school, maintained by the State, open to all, could not be used to teach the doctrines of any sect; that it must be neither religious nor antireligious, but wholly secular, neutral. M. Paul Bert, who presented the measure to the Chamber of Deputies, pointed out that the "religious neutrality" of the school was the logical outcome of the principle of the freedom of the individual conscience. "In our eyes," M. Bert continued, "this argument has so great force that, without the prohibition of religious instruction in the schools, compulsory education would appear to us to be not an advantage, but a danger." In order that opportunity should be given to parents to provide religious instruction for their children—this is explicitly stated in the law—the schools are closed one day each week, other than Sunday. In France Thursday, not Saturday as with us, is usually taken as the school holiday.

This, then, is the condition of affairs in the United States and in France as regards religious training in education. The influence first of Protestantism and then of Democracy has completely secularized the school. The school, therefore, gives an incomplete education. The religious aspect of civilization and the place and influence of religion in the life of the individual are excluded from its view. This is the first important fact to be reckoned with.

The second fact is that the whole work of education does not fall upon the school. It can not do so and ought not to do so. The family, the church, the library, the newspaper, society itself, are all educational institutions as truly as is the school. The school is the most highly organized of them all. Its aims and methods are the most definite. But it is quite untrue to suppose that nothing enters into education save through the medium of the school programme. Therefore, it does not follow that because the school has become secular, all religious influence and training have necessarily gone out of education. If the school is not distinctly religious, it is even more distinctly not antireligious. The real question, then, is what are the other educational factors, especially the family and the church, doing to see to it that school instruction is rounded out into education through their cooperation? It is the duty of the family and the church to take up their share of the educational burden, particularly the specifically religious training, with the same care, the same preparation, and the same zeal which the school gives to the instruction which falls to its lot.

Before coming to the implications of this position there are one or two suggestions which must receive passing notice. It is said, by a very few, it is true, that there is no such thing as religion other than mere superstition, and that religion is not universal in any event, and therefore that the fifth element of our civilization is but an empty name. It is urged, with Petronius, that fear first made the gods, and with Feuerbach that religion is man's most terrible ailment. These contentions seem to me to arise from simple ignorance, alike of history and of human nature. There is a response from the human heart and from the recorded thoughts and deeds of civilized men, based neither on credulity nor on fear, to the description of Hegel, that "religion is for our consciousness that region in which all the enigmas of the world are solved, all the contradictions of deeper

reaching thought have their meaning unveiled, and where the voice of the heart's pain is silenced—the region of eternal truth, of eternal rest, of eternal peace." If religion may be defined in Dr. Martineau's words, as "the belief and worship of supreme mind and will, directing the universe and holding moral relations with human life," then civilization is unintelligible without it. Much of the world's literature and art, and the loftiest achievements of men, are, with the religious element withdrawn, and without the motive of religion to explain them, as barren as the desert of Sahara. This proposition hardly needs argument. "The religiosity of man is a part of his psychical being. In the nature and laws of the human mind, in its intellect, sympathies, emotions, and passions, lie the well springs of all religions, modern or ancient, Christian or heathen. To these we must refer, by these we must explain, whatever errors, falsehood, bigotry, or cruelty have stanied man's creeds or cults; to them we must credit whatever truth, beauty, piety, and love have glorified and hallowed his long search for the perfect and the eternal. * * *

"The fact is that there has not been a single tribe, no matter how rude, known in history or visited by travelers, which has been shown to be destitute of religion under some form."[1]

But it is also urged that a satisfactory substitute for religious training is to be found in moral and civic instruction. This view is widely held in France, and has led to some rather absurd consequences. So scholarly a writer as Mr. Thomas Davidson has just now urged this view upon us Americans.[2] He is able to do so, however, only by completely identifying religion and philosophy, and, as I think, a bad philosophy at that, in his definition of religion. But, in fact, the field of moral and civic instruction is quite distinct from man's religious life; it belongs to the institutional aspect of civilization. The moral aspect of life has long since come to be closely related to the religious aspect, but nevertheless the two are quite different. A religion, indeed, may be quite immoral in its influences and tendencies. It may lead to cruelty and sensuality and yet be a religion. There have been not a few such. To confuse religion with ethics is to obscure both. Religion must be apprehended as something distinct and peculiar if it is to be apprehended at all. Matthew Arnold was absolutely wrong when he wrote, "Religion is ethics heightened, enkindled, lit up by feeling; the passage from morality to religion is made when to morality is applied emotion." It is still easier to make clear and enforce the distinction between morality and religion, if we substitute for the general term religion the highest type of all religions—Christianity. It is Christianity, of course, which we have in mind when speaking of religion.

My argument thus far has aimed to make it clear that religious training is an integral part of education, that in this country the State school does not and can not include religious training in its programme, that it must therefore be provided by other agencies and on as high a plane of efficiency as is reached by instruction in other subjects, and that moral and civic training is no possible substitute for religious teaching. The agencies at hand for religious teaching are the family and the church, and, in particular, the special school, the Sunday school, maintained by the church for the purposes of religious training.

The Sunday school is in this way brought into a position of great responsibility and importance; for it is, in fact, a necessary part of the whole educational machinery of our time. It must therefore be made fully conscious of the principles on which its work rests and of the methods best suited to the attainment of its ends.

The Sunday school must, first of all, understand fully the organization, aims,

[1] Brinton, Religions of Primitive Peoples, p. 30.

[2] "American Democracy as a Religion," International Journal of Ethics, October, 1899.

and methods of the public schools; for it is their ally. It must take into consideration the progress of the instruction there given in secular subjects, and must correlate its own religious instruction with this. It must study the facts of child life and development, and it must base its methods upon the actual needs and capacities of childhood. It must organize its work economically and scientifically, and it must demand of its teachers special and continuous preparation for their work. It must realize that it is first and above all an educational institution and not a proselytizing one, and that the inherent force of the truth which it teaches is far greater than any attempted bending of that truth to special ends. It must cease to be merely a part of the missionary work of the parish, and become a real factor in the educational work of the community. It must give more time to its work, and the traditional division of time on Sunday will have to be gradually readjusted in order to make a serious Sunday-school session possible. A Saturday session may also be planned for. It must recognize that ordinarily no single parish or congregation can make proper provision for the religious training of all the young people under its care. The very largest parishes and congregations may be able to maintain a fully equipped Sunday school for children from five to eighteen, but the smaller parishes and congregations in towns and cities must learn to combine for their common good. Each parish or congregation may readily and ought always to maintain a Sunday school of elementary grade, but several adjoining parishes or congregations must combine in order to organize and support a proper course of religious instruction for children of secondary school age and beyond, say from thirteen to eighteen years. In a whole city, unless it be New York or Chicago or Philadelphia, one, or at most two, training classes for Sunday-school teachers should be sufficient. Furthermore, Sunday-school teachers, like all other teachers, should be paid. They should be selected because of competence and special training; they should be led to look upon their work not as philanthropy, not even as missionary work, but as something which is larger than either, because it includes both, namely, education. The several Christian bodies, as long as they remain distinct, will naturally maintain their own separate Sunday-school systems; but within any given branch of the Christian church, be it Protestant Episcopal, Presbyterian, Methodist, or other, all of the principles just stated can be applied. Sunday schools so organized could be given the same systematic professional supervision that is provided for the secular schools. Each body of Christians in a given community could have its own Sunday-school board, and its own Sunday-school superintendent and staff of assistants. Between some Christian bodies actual cooperation in Sunday-school instruction ought to be possible. For the proper organization and conduct of this religious instruction there must be a parish or congregational appropriation, or, better far, an endowment fund, to bear the legitimate cost of religious teaching and its systematic professional supervision.

The Sunday-school course of study must be looked after. It is at present—I say it with all respect—too exclusively pious. Religion is much more important in civilization and in life than the Sunday school now teaches. It is more real. It touches other interests at more points. The course of study of the future must reveal these facts and illustrate them. It must be carefully graded and adjusted to the capacity of the child. It must reach out beyond the Bible and the catechism. It must make use of biography, of history, of geography, of literature, and of art, to give both breadth and depth and vitality to the truths it teaches and enforces. It must comprehend and reveal the fact that the spiritual life is not apart from the natural life and in antagonism to it, but that the spirit interpenetrates all life and that all life is of the spirit. The problem, then, is not religion and education, but religion *in* education.

This, it may be said, is a radical programme, a counsel of perfection. Perhaps

so. If so, it will provide something to work toward. It will at least bring religious teaching under the influence of those principles and methods which have of late years so vitalized all secular teaching. It will give to it modern instruments, text-books, and illustrative material.

Before dismissing these suggestions as impracticable, because in part unfamiliar, it is well to face the alternative. It is that religious knowledge—and with religious knowledge a good deal else which is worth saving—will go out of the life of the next generation. What appears important enough to the elder generation to be systematically organized, conscientiously studied, and paid for in a terrestrial circulating medium will deeply impress itself upon the younger. What is put off with a hurried and unsystematic hour on Sunday will not long seem very much worth while.

Already the effects of the present policy are being seen. To the average college student the first book of Milton's Paradise Lost is an enigma. The epithets, the allusions, even many of the proper names, are unfamiliar. This is due to ignorance of the Bible. It is necessary nowadays to know something about Christianity as well as to be a Christian. The study of history and of geography in connection with the spread and development of Christianity is fascinating. The study of biography in connection with the people of Israel, and Old Testament history generally, may be made to put plenty of life into much that is now dead facts to be memorized. For older pupils the study of church history, and of the part played by religious beliefs and religious differences in the history of European dynasties, politics, and literature will make it plain how moving a force religion is and has been in the development of civilization. Such pupils, too, are able to appreciate the Bible as literature if it is put before them from that point of view. It is too often treated as a treasury of texts only, and not as living literature which stands, as literatnre, by the side of the world's greatest achievements in poetry and in prose.

The heart is the ultimate aim of all religious appeals. But the heart is most easily reached by informing the intellect and by fashioning the will. Knowledge and conduct react on the feelings, and the feelings, the heart (so to speak), are educated and refined through them. This fact will never be lost sight of by any competent religious teacher, and his purpose will never be to amass in his pupils knowledge about religion alone, but to use such knowledge to direct, elevate, and refine the religious feelings and to guide and form conduct into character.

It is along such lines as these that the development of the Sunday school from a phase of parish mission work into an educational institution of coordinate rank with the secularized school must take place. There are numerous local problems to be solved, no doubt, and not a few practical difficulties to be overcome, but if the ideal be once firmly grasped and the purpose to reach it be formed, the result can not be doubtful.

XXVI.—COMMERCIAL EDUCATION.[1]

The phrase "commercial education" is likely to remind an American of the commercial course in a public high school or of the fictitious banks, offices, and shops of the private school called a commercial college. The so-called commercial course in an American high school is almost universally a course hopelessly inferior to the other courses, being made up by substituting bookkeeping, stenography, typewriting, and commercial arithmetic for some of the language, his-

[1] An address by Charles W. Eliot, president of Harvard University, at the National Export Exposition, Philadelphia, Pa., October 20, 1899.

tory, mathematics, or science of the classical or English scientific course. This course exists in our public schools because it has for committeemen and parents a practical sound. It seems as if the child who had learned a little about these technical subjects might be better able to earn its living early than the child who had only studied languages, history, mathematics, and science. For the purposes of mental training or of mental power getting this course is never to be recommended, and it is rare that the slight knowledge of these arts acquired by pupils in the public schools proves to be of much use to them in winning a livelihood. The so-called commercial schools supplement for many young people a defective elementary education, but they seldom train anybody for service above that of a clerk. It is not of any such training that I propose to speak.

I ask your attention for a few moments to the chief features of a commercial education capable of preparing men and women for much more than clerical service and much more than narrow retail trading. An indispensable element in the training I have in view is a sound secondary education—that is, an education in a first-rate school, public, endowed, or private, which occupies the whole school time of the pupil from 13 or 14 to 18 years of age. This secondary education should include the modern languages, an essential part of a good preparation for the higher walks of business life. It may or may not include Latin, or Latin and Greek. Thus the German nonclassical secondary education is a very substantial preparation for business life, although it includes no technical subjects whatever. It deals with modern languages, including the native tongue, the elementary mathematics, history, and science, both pure and applied. For international commercial life in English-speaking countries a good knowledge of three languages besides English is desirable, namely, French, German, and Spanish. A reading knowledge of the languages will ordinarily suffice for principals, but for traveling agents or agents resident abroad a speaking knowledge of at least two of these languages is desirable. This knowledge should be acquired at the secondary school.

Let us imagine a boy equipped at 18 with these broad fundamental acquisitions, and let us then ask ourselves what additional subjects should be treated in an upper commercial school. The following list of subjects is by no means complete, but may serve to give a fair idea of the diversity and difficulty of the subjects appropriate to superior commercial education: Economics, statistics, banking, currency, exchange, arbitrage, insurance, Government tariffs, transportation by land and water, commercial geography, climates, ethnology, commercial products by region and by nationality or race, consumption by region and by race, maritime legislation, blockade rights, neutrals' rights, commercial law, industrial combinations of capital, labor unions, and, if I may use a new but convenient word, financing new undertakings. Some of these subjects are already taught elaborately in universities, and the elements and general principles of all of them can be taught systematically to groups of pupils and enforced by examples and problems just as well as styles of architecture, rules of evidence in law, or the diagnostic value of blood examinations in medicine are now taught and enforced in special schools. That a given subject has practical applications and is to be really mastered only by much practice is no reason why it should not be taught systematically in its elements by teachers skilled in expounding principles and guiding practice.

It is obvious from the mere enumeration of these subjects that no young man could master any large proportion of the list in the two or three years which might wisely be allotted to such studies. A system of choice among these studies would therefore have to prevail in any well-conducted commercial school. The variety of business occupations in the modern world is immense, some of them being very broad and others very narrow; and for these various occupations widely differ-

ent bodies of information or knowledges are needed. We can classify these occupations and say that some of them are trade, others are manufacturing, and others are transportation; but there are many business occupations which are concerned with all these three groups, or with portions of them all. The youth who entered the upper commercial school knowing what business he is subsequently to pursue would have sure guidance in the selection of his studies. The youth who had no such knowledge would do well to acquaint himself with the general principles of the most fundamental subjects.

For what classes of persons would such a training, extending on the average through the twenty-first year, be appropriate and desirable? Let me first exclude two classes of young men. An elaborate training of this description is not necessary for men whose occupation through life is to be purely clerical. For that class the investment of time and money would be unreasonably large. Neither would it be the best course for the sons of men who are carrying on a well-established business and are able to introduce their sons into their already organized business and push them up rapidly through all its grades. For a specific business, selected beforehand and entered upon with sure prospect of rapid advancement, the best training is to work up through all the grades or departments of that particular business. But it is only exceptional youths who have such opportunities of acquainting themselves thoroughly with the details of a complicated business which later they are to direct. The thousands who every year come forward into business life have no access to a family business, but must take their chances of employment and advancement in whatever commercial occupation may become accessible to them. To what business careers, then, might young men carefully trained in an upper commercial school, parallel with a college or scientific school, look forward with confidence? For what careers higher than that of a clerk might they be trained? Remembering that such a school would not provide one uniform curriculum for all its pupils, but permit selection of studies among a great number of important subjects, we may confidently enumerate the occupations of the following classes of persons as appropriate to young men so trained. Consuls or government agents in foreign parts; actuaries, public accountants, and auditors; managers of departments in a large business; buyers abroad for home use and sellers of home products in foreign parts; State, city, and corporation officials in great variety; merchants engaged in international trade; junior officials in banks and insurance companies and in transportation companies by sea and by land. In all these cases the instruction received at the commerical school would have to be supplemented by practical experience in an actual industry, office, or trade; but this subsequent requirement would not be at all peculiar to this school. No school of engineering or of applied chemistry or physics nowadays undertakes to turn out students fit at graduation for responsible posts. They simply graduate young men well fitted to enter upon the novitiates of these several professions; well fitted, that is, to begin to learn rapidly and well the practical details of an actual business in these several departments. That is precisely what might reasonably be expected of an upper commercial school, that its graduates should be fitted to learn rapidly and well the practical details of any mercantile pursuit in which they might engage.

It would not be the avowed object of such a school to train heads of great houses, or of great corporations, although it might easily happen that such persons might later be found among those who had received its training. The qualities which make captains of industry or of commerce are in large measure natural gifts. Such leaders must possess extraordinary energy, good judgment, insight in choosing subordinates, vivid imagination, and firm, upright character; and if I were asked what education would be best for a young man known to possess these gifts, and destined for commercial life, I should say, give him the

best attainable college education, and then let him travel. In attempting to estimate the value of an upper commercial school we should not, however, have such persons as these in mind, for they are highly exceptional. An upper commercial school should serve young men of fair parts by the hundred and the thousand. Nevertheless we shall do well to recognize the fact that international trade, and indeed domestic trade also, is becoming more and more complex, competition is growing keener, the percentage of profits smaller, the transactions larger, and the decisions of the principal necessarily quicker. The successful merchant has to know more to-day than he ever did before, and he has to be more alert and more inventive. Hence his preliminary training should be both more ample and more appropriate than it has been in the past.

I may illustrate the various classes of young men to whom an upper commercial school would be useful by stating briefly some of the uses of foreign languages in business. And first, to buyers. The conditions of many industries and trades have now become international. The raw materials of an industry or commerce may come from various parts of the globe in different qualities; and he is the best buyer who gets his material at the exact spot where it is best produced, or induces the cultivation in many places of that best plant or best animal which has heretofore been developed only in one place. The best cotton for a given fabric must be either bought in the one district where it is raised, or the cotton plants of this district must be spread throughout other cotton-growing countries. If China has a better tea plant than Ceylon, tea must be bought in China, or the better tea plant must be transferred to Ceylon. A chocolate industry established in Boston must seek its cocoa wherever cocoa best grows, and must be always inquiring in what other parts of the world cocoa can be well produced. This means that good buyers for great industries must often be polyglot men. As for the drummers or runners who solicit business, it is obvious that they need to speak the languages of the people with whom they would trade and among whom they must study on the spot the existing commercial conditions. The managers of great international industries need to be able to study foreign trade conditions in foreign newspapers and books, to understand the commercial intelligence in a foreign paper, besides knowing all the complications of local currencies, weights, and measures. If an American merchant wishes to introduce his goods into a foreign country, he is not well-advised to send out his price lists in English and in dollars and cents. Year by year, as ocean carriage becomes securer and quicker, and as business is done more and more all over the world by telegraph and telephone, the individual merchant's need of overcoming the obstruction to commerce caused by the variety of languages spoken and written in the business world becomes more and more pressing. We Americans are at great disadvantage in learning foreign languages. We can not pass like Dutch or Belgian boys in a few hours to a nation speaking French, or German, or English. We have to learn the modern languages by main force, as it were, without the advantage of immersing ourselves on occasion in the foreign speech.

Time does not permit me to dwell upon the specific preparation that might be obtained in an upper commercial school for a variety of interesting callings. I can only mention two callings for which very definite preparation might be made in such a school. The first is the calling of correspondent, traveling or stationary, for the commercial press. This function of the press in maintaining fresh correspondence with all parts of the commercial world is becoming more and more important as international trade spreads and fructifies; and it is obvious that this function, if it is to be well discharged, implies in the correspondent discrimination, insight, linguistic skill, and a thorough understanding of commercial conditions. The other calling I wish to mention is the service of government as consuls, or of intelligence departments conducted by trade organizations. We have

so long regarded consulships as mere political prizes that we have lost sight of their real function as commercial agencies. If this country is to enter seriously into competition for international trade the world over, the very first administrative reform needed in our Government is the conversion of consulships into commercial intelligence bureaus. It is obvious, however, that the men who are to discharge this function should have a first-rate training in several of the subjects which I have enumerated as appropriate to an upper commercial school. A government school for consuls would be just as legitimate as a government school for the Army or the Navy, and would be likely to lead to correspondingly good results. Such a school, however, would imply a life career for its graduates, just as West Point and Annapolis do.

An upper commercial school should possess the means of keeping its knowledge of commercial conditions absolutely fresh. No salted provisions or canned goods would be useful in its larder. Its teachers would have to live at a commercial center, and breathe every day a wholesome commercial atmosphere. Boards of trade would be better supervisors for such a school than any bureau of education. Men actively engaged in foreign commerce ought to oversee it.

I can hear the objection of the old-fashioned merchant to this whole project of a commercial school. He is saying, Business can not be learned in a school; it must be learned in a countingroom or a real shop. He is saying, The only way to bring up a boy for business is to set him to sweeping out the office and running errands. In answer I can only say that I believe commerce and industry in their higher ranges to be eminently intellectual pursuits; and that I know no other intellectual calling for which a professional school is not now provided. It used to be the fashion to study medicine by cleaning the doctor's horse and buggy, grinding his drugs, and driving around with him to make his calls; and to study law by copying deeds and briefs in a lawyer's office, and reading books taken from the lawyer's little library in the intervals of clerical labor; but the world has now learned that there is a better way of studying medicine or law—namely, by going to a professional school, where progressive systematic instruction rapidly developed is to be had. The intending physician or lawyer who does not go to a medical school or a law school condemns himself nowadays to hopeless inferiority, even if he ultimately gets into his chosen profession. To deny that young men may be systematically trained for industry and commerce is to assert that industry and commerce are merely imitative arts to be acquired only by seeing other people do the tricks and then practicing them. The gypsy in Asia Minor makes iron nails one at a time with a hammer on an anvil, just as his ancestors did before him for hundreds of years. I have seen him doing it; but I also observed that his small children were stark naked and that his larger ones had only one garment. In short, he was not making much of a living. Moreover, not one-thousandth part of the nails we use in this country could possibly be made in that way. In industry and commerce all things are become new: and new methods of preparing young men for these occupations must be invented with discriminating foresight, established with prudence, and maintained with liberality.

XXVII. HOW TO TEACH CIVIC DUTY TO SCHOLARS.[1]

Before the next issue of the Review of Reviews is in the hands of its readers the municipal elections will be over, and we shall be in the thick of the school-board elections. Every year adds fresh evidence to the urgency of the need for quickening and educating public interest in the careful and continuous discharge

[1] From the Review of Reviews (London), October 15, 1897.

of civic duty, especially in the field of municipal administration. The efficiency, the purity, and the progressive character of the municipal institutions of the Old World constitute a precious heritage which it is our duty not only to maintain, but to hand down to our children with improvements not unworthy of this generation. It is in this particular department of human affairs that the Old World has the advantage of the New. In many things, notably, in its freedom from its crushing burden of imperialism, the New World beyond the sea has an immense advantage over Europe, but in the matter of municipal administration the New World has still to sit at our feet. This position of preeminence can only be maintained by constant vigilance, and by carefully instructing the young in the principles of local self-government.

Of late years much attention has been bestowed upon this subject. A league or society for promoting the education of our future citizens in civic duty has been formed, and much good has resulted from the increased attention that has been paid to the subject. It would be difficult to suggest any more admirable handbooks on the subject than those which have been written by Mr. Arnold Forster concerning the duties of a citizen. They constitute text-books which ought to be in the hands of the teachers in all our public elementary schools. But there is still much to be done in this respect; and I can hardly do better service to my readers on the eve of the municipal elections than by calling their attention to a scheme which has been tried with singularly good results in the city which of all others affords the most painful object lesson as to the consequences which follow the lack of good civic spirit on the part of all classes of citizens.

Where evil abounds there grace sometimes much more abounds, and the very extreme evils which have been suffered by the citizens of New York in the past have been as schoolmasters to bring them to realize the need for adopting the most effective and drastic measures for preventing any recurrence of a similar state of things in future. Whether the plan which has recommended itself to the Patriotic League in New York commends itself or not to our local authorities, the present month is of all others one in which the suggestion can best be brought before the public. I especially commend it to the attention of candidates for the school boards and the town council, and to all those who are practically engaged in the teaching of youth.

The New York project to which I wished to call attention was started last July at a vacation school. It was based upon the experience gained by a somewhat similar experiment tried the previous year at the West Farm school. This school had for some time been very unruly and extremely hard to manage. Last year it was suggested by Mr. Gill to the vice-principal that school discipline might be improved if he invoked the principle of self-government, and a large part of the duty of maintaining order were turned over to the scholars themselves. His plan was to treat the scholars as if they were a nation, and to throw upon them the duty of electing the house of congress, senate, and president. The plan worked extremely well. The president elected by the scholars, aided by his ministers and by congress, effected a magic change in the discipline of the school. From being turbulent and unmanageable, it became an orderly institution which gave the teacher hardly any trouble at all. The success of treating a school as if it were a microcosm of the nation, led Mr. Wilson L. Gill, founder of the Patriotic League, to hit upon the happy idea of developing the scheme, by substituting the organization of the city for the organization of the nation, as the conception before the scholars. American city organization is very different from that which prevails in our country, but there is no reason why, if the principle were accepted, the scheme could not be carried out in any English school with the alterations necessary to adjust it to the different circumstances. Without explaining the altera-

tions that would be necessary, I proceed to set out exactly what was done in the Norfolk-street vacation school, where the first experiment was tried in the city of New York.

Vacation schools in America are held in the public-school buildings, but they are not under the control and rules of the board of education, and it was therefore decided to make the experiment in a vacation school instead of waiting for the assent of the board. It was also argued that consent would be more readily accorded if the experiment succeeded in a vacation school, than if it had to be tried for the first time in a public school. When the Patriotic League took hold of the Norfolk-street vacation school, the first step was to declare all the scholars, irrespective of age, citizens of the mimic city of Norfolk-street school. There was no distinction of sex or of age. Every scholar was a voter with one vote. The first step in organization was to declare that each class was an election district, or as we should say, a ward. As the beginning of all things in America is the holding of a caucus, each class met in a primary and selected delegates for a city convention, composed of delegates elected by each class in the school. This convention nominated two candidates for each of the offices which in American cities are voted upon by the people, to wit, mayor, controller, and president of the board of aldermen. After the nominations were made in due form, polling booths were opened in each class room, the voting being by ballot. When the poll was closed the votes were counted and the successful candidates were duly installed in office. The mayor nominated the president of the board of health, the commissioner of street cleaning, a commissioner of police, and three judges. The board of health consisted of its president, a teacher, and a commissioner of police. The commissioner of police selected a chief, a captain, and a policeman for each class, while the judges named a clerk of the court. The experiment, which began on July 10, lasted until August 20, when the school was to close.

On closing day the mayor of Norfolk-street school, a boy of 14 years of age, wrote a letter to the mayor of New York, inviting him to pay a visit to the mayor of the school city. Two couriers were dispatched to the city hall, where they were ushered into the mayor's presence. Mayor Strong was very busy, but on reading the invitation he laughed, and in ten minutes he entered his carriage and drove off to Norfolk-street school. According to the narrative in the New York Sun, from which I am quoting, the visit of the mayor was a great success:

After shaking hands with the mayor he insisted upon meeting all the other city officials, and then inquired as to the process of law in the city. He was hugely delighted when he was told that a regular trial had been held the week before, that a police captain, accused of dereliction of duty, had been the prisoner, and that he had been convicted and dismissed from the service. Thereupon Mayor Strong asked that the court be brought before him. His amusement was great when he saw that one of the judges was a girl. But the crowning feature to Mr. Strong was when the police force was assembled for his benefit and he discovered that more than half of the policemen were girls. The offense of which the police captain was convicted was "conduct unbecoming a gentleman and an officer" while the school was off on a picnic. His was the only breach of the public peace serious enough during the existence of the city to make a trial necessary.

So successful did the mayor deem the experiment that he has given his support to the movement, the promoters of which hope will result in the establishment of similar mimic cities in all the public schools. The commissioner of the charities and the civil-service commissioners are united with the other officials of the city in drawing up rules. In the new scheme it is proposed to make a considerable improvement upon the simple organization of Norfolk Street School. The chiefs of each of all city departments in New York are at present preparing drafts explaining the actual work and purpose of their departments, the mimic counterpart of which is to be established in the school. By this means it is hoped each scholar will get a good idea of the actual work and purpose of the city

department of which he becomes an officer. The civil-service commissioners, for instance, are preparing a set of useful service questions for office-seekers under the new municipality. The head of the New York police school is preparing a scheme explanatory of the work of the policemen, while Colonel Waring is framing a simple constitution for the school street-cleaning department, modeled upon the lines of his own bureau, which has effected so marvelous an improvement in the outward appearance of New York. The board of health has sketched out a miniature health department on scientific and practical lines, and has added a sanitary code, somewhat like that under which New York City is controlled, adapted to children and their needs in the public schools. The Patriotic League is taking this very seriously, for they believe that the children, while apparently playing, will be learning practically the actual work of municipal government, and will communicate their interest to their parents when they go home.

It is rather staggering to the slow-going conservative English mind to know that the whole machinery of government in a school city is to be turned upside down every month when new elections will take place, so that everyone may have a chance of holding an office. Out of a school of 1,000 children, 150, it is estimated, will be needed as officers. There are about twenty-five classes in a New York City school, each of which will become an election district electing one member to the municipal council. Courts will be established and judges chosen and jurors impaneled in the ordinary way. The most elaborate provisions have been drawn up to enforce sanitation and teach the children the laws of health:

There is to be a sanitary bureau and a bureau of records. The officials are: A president, a commissioner (a teacher, corresponding to the health officer of the port), the president of the police board, 1 secretary, a sanitary superintendent, 5 assistant sanitary superintendents, 10 food inspectors, 15 sanitary inspectors, 5 hygiene inspectors, and several medical inspectors, beside a squad of 10 sanitary policemen commanded by a sergeant.

"The food inspectors," says the sanitary code, "shall inspect all articles of food and drink brought into the city for consumption within its limits. They shall give information to citizens regarding proper food and drink; how prepared at small expense, etc., and shall assist citizens in properly preparing food for consumption (e. g., removal of the decayed parts of fruit, etc.).

"The hygiene inspectors shall examine the citizens with reference to cleanliness of the face and hands, condition of hair, condition of clothes in respect to cleanliness, neatness, repair, etc.

"The sanitary inspectors shall inspect the condition of desks, schoolbooks, clothes, closets, toilets, etc., as to neatness and cleanliness. They shall prevent spitting on the floors, staircases, etc., and shall warn citizens against spitting on sidewalks or elsewhere, except into proper receptacles, and then only when absolutely necessary.

"The medical inspectors shall examine the citizens daily, immediately after they enter the city, and shall report to the assistant sanitary superintendent the names of any who do not feel well."

The sanitary police are to enforce the regulations, and reports are to be made. Verbal reports on the part of each assistant sanitary superintendent to the proper teachers each morning in regard to those citizens who do not feel well, and warnings and complaints are to be issued.

The school superintendent of New York has generally approved of the scheme, but he is at present somewhat dubious as to whether it might not interfere with the regular work of the schools, keeping the pupils longer than the regular hours, or distracting their thoughts from their studies. The Patriotic Leaguers, however, are confident that none of these evils will result:

The teachers are required to be in their class rooms about twenty minutes before school begins every day, they say, and a part of this time would be all that would be required for the running of the whole of the city government.

On one morning the primaries could be held, and the next the convention could sit, and the next morning the election be held. The counting of the votes, the canvassing, and the induction into office of the elected members could each be taken up in turn. On Mondays the commissioners could receive reports from

their subordinates, make their own reports on Tuesdays, and on Friday afternoons the council could sit. Except for enforcing the rules there would be no work or thought required of the pupils during any but the time now wasted in the mornings while waiting on the half hour on Friday when a part of the pupils are now allowed to go home early.

Such is the scheme as it was described to me in New York. It seemed quite the most original and promising project that I came across in my hurried visit to the New World. I, therefore, lose no time in describing it for the benefit of my readers at home, and in the colonies, where I hope that its intrinsic merits will commend itself to those who are practically interested in the teaching of children and the training of our future citizens for their duties to the city and the State.

CHAPTER XII.

THE STUDY OF ART AND LITERATURE IN SCHOOLS.

By W. T. Harris.

Contents: I. Why Art and Literature Ought to be Studied in Elementary Schools.—II. Beauty in Art *v.* Beauty in Nature.—III. The Educational Value of the Tragic as Compared with the Comic in Literature and Art.—IV. The Æsthetic Element in Education.

I.

Why Art and Literature Ought to be Studied in Elementary Schools.[1]

All questions relating to the course of study in the schools must be taken first into the court that decides on educational values, and next into the court that settles the order of sequence. The former investigates the meaning of the proposed study in the light of civilization, and the latter the place of its introduction into the school programme. The first proceeding is to place the question in the light of all human learning, and the second is to place it in the light of educational psychology.

Our present question, therefore, must be examined with a view to see what art and literature mean in our civilization—what they have meant in the past, and what they must necessarily mean in the future that shall be. Then, having settled its degree of importance, we may turn to educational psychology and ask where, in the education of man, can this profitably be introduced, what stages of growth it presupposes as already attained, and what methods are best for the results we wish to accomplish.

By the term art I designate sculpture, painting, architecture, and music. By literature I mean chiefly poetry—epic, dramatic, and lyric. I include also such prose writings as critical miscellanies which furnish reflections on the same general themes that poetry treats. Above all I include the novel, the romance, or the story. While the epic poem has for its theme the conflict of nations, the novel treats of conflicts in civil society and in the family, and has been called the epic of the bourgeois.

In order to see what we have to do with in art and literature, let us look for a moment at its place among the fundamental activities of the soul. (Parenthetically I explain that I group together art and literature under one definition as the province of æsthetics; and hence I sometimes use the pronoun it or its to refer to them.)

The highest idea that man reaches is his thought of the divine as the first principle of the universe. There are three forms in which he attempts to express this idea. First, in religion; second, in art; third, in philosophy. This highest idea appears necessarily as the good, the beautiful, and the true. We call the effort

[1] Read before the Department of Superintendence of the National Educational Association at Indianapolis, February, 1897.

to celebrate the divine and realize it in good deeds religion; the effort to give visible forms or audible forms to it gives us the various branches of the fine arts and literature. The attempt to explain the world by the divine idea and to comprehend ultimate truth is philosophy. Thus we are to regard art and literature as having the same theme as religion and philosophy. The idea that sculpture and painting, music and poetry have no other use than amusement must give way to the view which regards them as among the most serious and worthy occupations of the human soul.

All that man does contributes to a revelation of human nature in its entirety, but art and literature lead all other branches of human learning in their capacity to manifest and illustrate the desires and aspirations, the thoughts and deeds of mankind. Hence the educative value of these things. In the presence of the conflict of moral ideals, the struggle of passion against what is rational, the attacks of sin and crime on the divine order of the world, all that is deepest in human character is manifested. Art and literature portray these serious collisions, and like the mountain upheavals that break and tilt up the strata of the crust of the earth and reveal to the geologist the sequence of the formations from the most primitive to the most recent, so these artistic situations reveal to all men the successive strata in the evolution of human emotions, ideas, and actions. Thereby the single individual comes to know the springs of action of his fellowmen.

I have already named the four provinces of art—architecture, sculpture, painting, and music; and the three general divisions of poetry—epic, lyric, and dramatic. There are, moreover, three great historical epochs of art and poetry, corresponding to the three great stages of advancement of the nations of the world into conscious freedom. For the art and literature of a people reflects its degree of enlightenment and is, in fact, next to religion, the chief means by which its civilization is preserved. We accordingly have as the lowest stage the art of nations that have reached only the freedom of the social world without reflecting it in the individual. The citizen is buried beneath a mass of customs and usages, laws, and prescriptions which he has had no hand in making and yet can not refuse to obey. This form of civilization is only a little above a condition of slavery for its citizens. Its art accordingly does not create forms of free movement, but represents by appropriate symbols the crushing out of individuality. Such is the art of the great nations of Egypt, Eastern Asia, East India, Persia, and Western Asia. It has been described by Hegel, whose Æsthetik is by far the most satisfactory philosophy of art, as symbolic art. Its works of art adumbrate or hint at what they do not adequately express.

The highest form of art is reached by the so-called classic nations—Greece and Rome. They arrived at the expression of freedom in the body—freedom in its pose and freedom in its action. This is properly called gracefulness. The limbs of the body are obedient to the will of the soul. When the limbs are in the way, when the soul does not know what to do with them, we have awkwardness as a result, and not gracefulness. The Greek artist would not paint a family group with their arms folded or their hands folded. Their hands and arms would be in action obedient to some purpose of the soul. But some Dutch painters would show us peasants embarrassed by their limbs, peasants who would evidently feel greatly relieved if their arms could in some way be detached from their bodies—perhaps unscrewed or unhinged in some way and hung up on the hatrack outside the room, with their overcoats and head covering. Greek art seizes for its theme some moment of life when all the limbs are required to express the purpose of the soul, as, for instance, in the Apollo Belvedere. If it takes for its theme a sitting figure—the Olympian Zeus—it poses the body in such a way that we see the full control of the will over the limbs. The sitting Zeus could rise instantly and hurl

his thunderbolt. The "classic repose" of which we hear is ever a graceful repose; graceful because the whole body is pervaded and controlled by the soul.

The third stage of art is Christian art; or, as Hegel calls it, romantic art, which at first is occupied in showing the superiority of the soul to the body, and for this purpose selects for its subjects examples of steadfastness under severe trial—martyrs, and especially the sufferings of Christ. It goes so far in this as to set itself in opposition to classic art, and sometimes indicates its contempt for gracefulness in order to accentuate its preference for inward freedom and spiritual elevation. It portrays freedom from the body, while Greek art shows freedom in the body. In the later development of Christian art we see the attempt to represent gracefulness without losing the expression of the predominance of the inner life of the soul over its corporeal life.

In Fra Angelico's paintings we see Christian martyrs with tortured bodies, but meekness and peace in their faces—a peace that passeth understanding; for they are at one with the divine. There is no longer the expression of the desires of the body, but only the religious longing for spiritual perfection. Classic art showed us the soul in the body and with bodily desires and passions, but purified by subordination to social restraints. Christian art shows, in this first stage, the opposite of Greek art—not freedom in the body, but the renunciation of the body.

Then there is a second and later phase of romantic art, represented by such artists as Raphael, Murillo, Da Vinci, Michael Angelo, Correggio, Holbein, and Rubens.

Gracefulness has been more or less restored by these, but not the classic repose of the Greeks, for there remains even in the latest forms of Christian or romantic art the portrayal of a longing or aspiration of the soul for something beyond what it has achieved.

Here we can pause for a moment and consider the reason for giving the rank of highest phase of art to the Greek.

We have seen that religion realizes the divine in the good, while philosophy defines it in a highest principle and attempts to explain all things by it, but that art manifests the divine in material forms, or at least by images of material beings; so that we may say that art is the union of the spiritual and the material, while religion is the emancipation from what is material.

Now, classic or Greek and Roman art is the perfect realization of this union of the material and spiritual, hence the highest type of art as art. Christian art, representing as it does the struggle of the soul against its physical environment, is a form of art that looks toward religion. It is therefore a transition from art to a higher form of the realization of reason; namely, religion. But art is not a mere transitory phase of human culture; it belongs to all subsequent ages of human history after it has once come into being. Moreover, the classic form of art will more and more come to be admired in all the future Christian ages because it portrays freedom in the form of gracefulness. The earliest Christian ages could not admire Greek art without falling back into sensuality. It had not yet attained a persistent hold of the spiritual. But when the Christian idea had been evolved in history to a point where natural science could be pursued in a free and untrammeled manner, then came the age of inventions, labor saving and knowledge extending; inventions that enable us to conquer nature and emancipate ourselves from that drudgery which had been necessary for the sake of food, clothing, and shelter. We are now in this age of productive industry which is the sequel to inductive natural science. We see all about us the triumph of wealth. Wealth in the form of capital enables not only its possessors to obtain large shares of food, clothing, and shelter and means of access to knowledge, but it enables the unthrifty of the community, to the last man of them, to obtain a proportionately greater share in creature comforts and spiritual privileges. At the beginning of

this century the average total production per inhabitant in the United States was only 10 cents a day, and of course the share of this must have been very small for the poor. But in 1890 the average production had risen to nearly or quite 50 cents per day, and the share of all had proportionately increased.

In the presence of this development of power over nature we desire to see a reflection of our material freedom, and we accordingly gratify ourselves by reproducing Greek art with its graceful forms. The perennial image of free control of bodily forms pleases us, as it did the Greeks, but it does not excite in us a feeling of worship, as it did in the Greeks, for we worship a transcendent God, one who can not be fully revealed in graceful forms like Zeus and Apollo, but who needs religion and philosophy for his revelation, for the Christian civilization needs not merely piety of sense perception, which is art, but piety of the heart and piety of the intellect. We have varied our spiritual wants, and we have a place for art in our lives as a reflection of our freedom.

Literature and art in passing over from the classic type to the romantic become more fully pervaded with the expression of motives and delicate shades of feeling. They show us in a more complete manner the subjective or inner life of the individual. In modern art we can see all of the successive stages by which a blind desire in the mind of a character becomes at length an emotion, and then a well-reasoned thought, and later on a conviction, and finally an action.

The greatest works of art ought to become the most familiar ones to the people. Care should be taken, therefore, in the school to select these great works and to lead the pupil into an understanding of the motives of their composition and, next, to point out the artistic means and devices for the expression of the thought or idea portrayed, for I have said that a work of art is the union of thought and matter. The senses perceive the material object, but a higher faculty of the soul perceives the work of art and enjoys the spiritual suggestion in it.

By successive stages the teacher will carry forward his elementary pupils into an appreciation of the great works of art, and thereby cultivate their taste and make them wise with a knowledge of human nature.

The literary characters painted for us by Homer, Sophocles, Dante, Molière, Shakespeare, and Goethe are better known by the people than any historical characters, and they are thoroughly understood. People learn to do their thinking with them. They furnish keys to our everyday experience; for the great poets have given us characters that are types representing the chief classes of men and women in our civilization. Moreover, the situations in which these typical characters are placed involve the difficult problems of life and furnish their solution. The ambition of Macbeth, the jealousy of Othello, the indulgence of sudden gusts of wrath by Lear, furnish us vicarious experiences of life and widen our knowledge of self. The retribution that overtakes sin and error is seen by us with purifying effect. Aristotle has remarked that this purification through sympathy and terror is one of the chief uses of the drama.

The wrath of Achilles and the selfish pride of Agamemnon; the long-delayed return of Ulysses and the steadfastness of Penelope; the cycles of heroes and heroines of the Iliad and Odyssey have furnished literary categories for European thought for nigh three thousand years. They have grown into great ganglia of apperceptive ideas, and one has to become acquainted with Homer simply to understand the contents of his own literature.

Dante's Divine Comedy gives 500 biographies, foreshortened in the perspective so as to show the life of each sinner or saint as determined for weal or woe by his own deed.

Goethe's Faust depicts for us the life of the modern agnostic who tries to live up to his theory, but finds in the end that the world of human history presupposes the Christian theory of the Absolute. God must be a divine reason rather than a blind, persistent force.

What a large family of men and women, heroes and cowards, learned and simple, moral and immoral, Walter Scott has motived in his poems and novels. It is a liberal education to be familiar with his works.

The school readers do not contain these works that I have here named, but they offer fragments of some of them. Moreover they prepare the way for an understanding of the greatest works by widening the pupil's vocabulary from the merely colloquial one that he brings with him to school, by enriching it with choice selections from Tennyson, Wordsworth, Longfellow, Whittier, Bryant, Carlyle, Emerson, Hawthorne, Swift, Webster, Gray, Campbell, Wolfe, Byron, Shelley, and more than a hundred others.

The pupils of our elementary schools become familiar with at least 200 felicitous literary works of art, containing expressions of thoughts and feelings that would otherwise remain dumb and unutterable in the pupil's mind. The school must, above all, see to it that the pupil makes incursions into great works of art in his home reading. He may be lead to read the Merchant of Venice or the Midsummer Night's Dream, or some part of the Iliad or Odyssey or the Æneid, or especially Walter Scott's Ivanhoe or Rob Roy, and certainly The Lady of the Lake. Once a taste is formed for a work of the great author, a culture is begun that will go on through life.

The photographic art has made possible schoolroom instruction in the great works of architecture, sculpture, and painting. The greatest works should be selected rather than third and fourth rate ones. In the Metropolitan Museum of New York City there is a model of the Parthenon 12 feet long.

Mr. Prang, of Boston, has reproduced for us in colors, for schools, the Eastern façade on which is the pediment group of Phidias, restored by archæologists from the fragments that have been preserved. It shows the scene on Olympus after the birth of the goddess Athene from the brain of Zeus. On the left the god of the sun is urging his steeds up from the waves; in the east and on the right Selene, the moon, is driving her terror-stricken steeds into the western waves—for day is to ascend into the sky for Athens, and night depart. The patron goddess has been born. The Three Fates spin the thread of life for her; the gods and goddesses of the Attic land turn their heads joyously to the newly born Athene, as Iris hastens toward them with the glad tidings. For dignity and repose in action, these figures of the Parthenon surpass all art known to us. Taking the Parthenon for one specimen of architecture, add a large photograph of the Cologne Cathedral for Christian architecture, all of its lines aspiring toward the heavens and seeming to be supported from above rather than from the earth below.

For painting, let the school get good photographic reproductions of Raphael's "Transfiguration," "Sistine Madonna," and "St. Cecilia;" of Holbein's "Dresden Madonna;" of Coreggio's "Holy Night," and Da Vinci's "Last Supper." On stated occasions, say twice a month, explain to the pupils the motives that the artist has depicted in the composition of his picture, for the composition is the first thing to study in a work of art. The pupils will become skillful in interpreting pictures after the analysis of a few famous ones from the great masters.

For sculpture, besides the figures on the Parthenon, get photographs of the "Apollo Belvedere," the "Laocoön," Michael Angelo's "Moses," and the Medici marbles, and also of the antique busts of "Zeus Otricoli" and "Hera Ludovisi."

If these photographs of architecture, sculpture, and painting are made to adorn the walls of the schoolroom, they will produce a permanent effect on the pupil's mind in the way of refining his taste, even if no studies are made of the motives that the artist has brought into their composition. But, of course, the composition lessons should be provided for in the programme of every school.

As to music, our high school pupils learn to perform selections from Mendelssohn, Rossini, Schubert, Mozart, Beethoven, Wagner, and Schumann. There

ought to be studies made of the motives of a piece of Beethoven or Wagner, corresponding to those made on Raphael or Da Vinci.

It is by this study of the motives of the artist and his use of them in creating what is called the organic unity of his work of art that the pupil can be made to see that art is as serious as history, and even more truthful, as containing a logical consistency in the return of the deed upon the doer.

Art and literature preserve for us the precious moments, the elevated insight of seers who are, next to the religious seers, the greatest teachers of the human race.

II.

Beauty in Art vs. Beauty in Nature.[1]

One of the good definitions of art describes it as a means of manifesting the divine in material form for the apprehension of the senses and the reason. This definition makes art one of the three highest products of the soul. The three highest activities of the soul deal with the beautiful, the good, and the true. Religion deals with the revelation of the divine as the good. Art deals with its manifestation as the beautiful, and the truth in science and philosophy deals with the definition of the divine for pure thought. The beautiful must contain two factors; first, a material factor, as stone and other building materials for architecture; stone, bronze, and other material for sculpture; canvas, pigments, etc., for painting; air vibrations produced by the agency of strings and columns of air in wind instruments, etc., for music; mental pictures of sensuous objects created in the mind through the words of the poet. Besides this natural side in art there is the other side, namely, the disposition of the material in such a way as to suggest spiritual activity—the feelings and passions of the mind, the motives of its actions, etc. It is this union of the spiritual with the material that makes art.

Inasmuch as the material has for its general characteristic inertness and receptivity of external impressions and complete absence of self determination, what is material, as such, can not manifest mind, can not manifest intellect and will, because these are forms of self-activity. Material things become works of art when they are so disposed that they seem to manifest self-determination, or self-activity of a living soul within them. It is evident, therefore, that the highest work of art will take on human form because the human body expresses most readily in its countenance, in its attitudes and gestures, the feelings, thoughts, and volitions of the soul.

Regularity, symmetry, and harmony are degrees of the full realization of the art idea. Regularity obeys a hidden principle; symmetry presents identity under a deeper difference than regularity; harmony shows the subordination of regularity and symmetry to a more complete expression of the soul. A string of beads shows regularity, the mere dead repetition of the same form; but even this dead repetition is a manifestation of identity and a suggestion of a common origin of the individuals in one process. Right and left hands are symmetrical but not regular. You can not place the right-hand glove on the left hand. There is correspondence instead of repetition, and this represents the mind more adequately than mere regularity. The mind is an eternal vibration of subject and object. This is manifested in mere regularity; but subject is opposed to object, and this opposition is represented in symmetry. But the essential activity of the mind is much deeper than this. The mind as will modifies the object so as to make it conform to the subject. The mind as intellect thinks out the explanation of the

[1] Reprinted from the Indiana School Journal.

object and finds it a manifestation of divine reason. Harmony, or the sway of material objects by the indwelling soul, which uses it as an instrument and expression of itself, is the highest means of art.

With these principles in view, we are prepared to consider the question whether nature presents the beautiful in as high a form as art. It is obvious that inorganic nature by itself considered does not take on forms that represent freedom. Its forms are all derived from without, and do not express the desires, purposes, or volitions of mind. When inorganic nature is used as material and the artist gives it the human form as a statue or group or makes it expressive of human thought, it may become beautiful.

Some writers on art hold the doctrine that art is the mere representation of nature; but this can not be a true definition, because nature presents the ugly as well as the beautiful, and to represent the ugly of course does not convert it into the beautiful. A picture of the front of the Parthenon is beautiful because the Parthenon itself is beautiful. A picture of the Vale of Tempe, if taken from the right point of view, is beautiful. There are many landscapes that are beautiful, but very few landscapes that are beautiful from all points of view. Nature in its prose reality is very seldom beautiful. The artist must select his point of view and must remove from his picture certain objects which, though real, mar the presentation of the main features.

From our definition of art we can see that it is important that art shall express freedom. But there are many kinds of freedom. There is, for instance, freedom in the body, and there is freedom from the body. The Apollo Belvedere and nearly all the forms of the Greek youth in the pan-Athenaic procession on the frieze of the Parthenon are beautiful. They show the complete control of the soul over the limbs of the body. This beauty is gracefulness, and Greek art is everywhere graceful; it is freedom in the body, but Christian art shows freedom from the body; that is, it portrays martyrs under torture, but with peaceful countenances, showing that the soul reposes in the thought that it has conquered the flesh and attained to holiness. Christian art is the third form of art; Greek or classic art is the second form of art. There is a lower form called symbolic art, in which freedom is as yet an unrealized dream. There is the painting of a struggle, but the material body is too much for the soul, and the soul can not realize itself freely. The art of Asia—eastern, middle, and western—together with the art of Egypt, is symbolic art, and has this character of an ineffectual struggle against the environment. In its sculpture the limbs are not at the service of the will. In its architecture the pillars or columns that support the roof are clumsy and lack gracefulness. The human faces do not express conscious dignity and the repose of the soul. The temples either have an abstract unity which does not admit of ornamental details, or else the ornamental details do not reflect the unity, and the eye gets lost in incessant repetition of trivial particulars which do not adapt themselves to the building as a whole.

Those who look upon nature as the source of the beautiful think of the landscape with its interesting variety of objects, its mountains and vales and winding streams, forests and meadows, the sky and the ocean. There is a sense of freedom which comes to us as we leave the city and pass into the country. In the city we have a burden of care constantly on our minds, because we must be mindful of our human environment. We have complicated relations with our fellowmen, and there is an unremitting pressure of duty. When we come to the country and are alone with trees, mountains, meadow brooks, and other inanimate objects we have a sense of relief from duty and from the worry which a network of relations brings to us. This is not a sense of the beautiful; it is rather a charming sense of relief. The charming and the agreeable is sometimes the beautiful and sometimes not, and in the case of the enjoyment of the green fields and the

wild luxuriance of nature we do not have the sense of the beautiful so much as the sense of relief and freedom from care. There is, however, a symbolic correspondence of a landscape to the soul. Take, for example, Church's "Heart of the Andes." In the distant background the Andes Mountains rise to great height and are crowned with glaciers; not a rock projects through the vast snow fields. All the light of the sun is concentrated on these white summits. In the foreground of the picture we have a beautiful river, with a cataract and rapids in front. On either side are venerable woods, with the gay-colored flowers that one finds in the Tropics. There are birds, with plumage of crimson and bright tints; a road winds along the banks of the stream and disappears in the forest. We trace the stream back through the central part of the picture; collections of houses or pueblos are seen on its banks, and then it enters the mountains and we are sure that it is fed by the water melting from the vast ice fields above.

Away up on the right the eye ascends through great forests, and above the crest volcanic flames are reflected on the ruddy clouds. Such a composition, with variety in the foreground and sublime heights in the background, bathed in sunlight, is a ready symbol of the human nature, which has its petty details, consisting of daily occupations, amusements and disappointments, diversions and griefs, efforts and intervals of repose, for ourselves and for our neighbors; these are in the foreground of the picture of human life. In the background arise the moral elements of our character, the structure of reason itself, especially its moral laws, its intuition of the Divine, its religious faiths, and its philosophical insights; these are abstract, like the white snows on the glaciers. No green thing grows on them, but they furnish, all the same, the fertilizing streams which descend to the vales of our mortal life. The stream of life and the stream of goodness that come from the Divine make glad the terrestrial abode of man.

Correspondence between divine and material things is the basis of poetry and art, and we feel this correspondence in proportion to the degree in which we possess a cultivated imagination. Very few of us are conscious of the æsthetic feeling. When we analyze it we find that it is due to a direct perception of will and intellect animating material things, or it is a dim consciousness of the symbol of human nature as a whole. A beautiful landscape must have heights and depths. Cut off the top of the picture with its distant heights and the foreground with its details will soon weary us. We look from the variety which lies near us up to the eternal mountains, and the feeling of the beautiful arises in our minds. If we cut off the foreground and look only at the heights in the background, the picture becomes too severe and forbidding, and it is no longer beautiful. We look from the cold and deserted snow fields to the foreground, following the charming river to the fertile fields which lie near us, and both extremes become beautiful through the relation. But symbolic art is not the highest order of art. Classic art, with its supreme principle of gracefulness, is the highest order. Romantic art, with its representation of freedom from the body, forms rather the transition to religion and is not the most perfect form of art. Religion is higher than art. Morality and holiness are higher than beauty, but beauty is a good thing in itself, and a religion that condemns the beautiful has not arrived at the perfection of religion. We are told by those who find the beautiful solely or chiefly in nature that nature is a revelation of God: "God is creating the world all the time or it is creating itself under God's laws. Nature is a perfect revelation of God's love and law. Surely they are His laws which govern the universe. These laws never change." But nature does not make human institutions, nor does it make art or the constitutions or forms of states and the laws which secure justice and which make things into property and protect property by laws which secure man's freedom from natural wants. Nature does not make religion nor does religion become Christianity until it sees that will and intellect transcend time and space and can

interrupt the natural causality in which each human individual finds himself. Nature does not make literature nor sculpture. In fact, the human form is not worth sculpturing until it has been trained in accordance with ideas of freedom. Beauty does not come into the faces of human beings until they are civilized. The Greek sculptor had to take for his models the youth who gained victories at the Olympian games and not the bodies of savages or of the people of Asia or Africa. So the revelation of the Divine is not through immediate nature, which is a scene of violence. Fate rather than freedom is realized in nature by itself. The Divine, which is absolute reason, does not realize itself in rocks and soils, in mountains and plains, in oceans and lakes. These are base elements not divine in themselves, though used by the Divine in the creation of a world. And the world is not for itself, but a cradle for the development of individuality through plant and animal. The divine purpose does not reach its end until it produces man, who is an immortal individuality, free and responsible, in the image of his Creator.

The beautiful is distinguished from the useful in the fact that the latter is wholly for another, while the beautiful is for itself. We give in sculpture and architecture, painting and music, and poetry the semblance of being for itself or independence to material objects. But nature is not able to do this except in a small degree.

Hence the beauty of art transcends the beauty of nature as much as man with his institutions excels nature with its inorganic and organic realms in the function of realizing the Divine.

III.

The Educational Value of the Tragic as Compared with the Comic in Literature and Art.[1]

It passes for a commonplace observation to say that the proper study of mankind is man. From the version of the Delphic oracle, "know thyself," down to the sententious maxim in Pope's essay, the dictum has passed with the ready acceptance given to a proverb or axiom.

The poet Tennyson believed that if we once thoroughly knew "the flower in the crannied wall" we should know all that man is and all that God is. If this be so, surely to know all that man is will be to know all that nature is. Indeed, man as an immortal being stands on the highest round of the ladder of nature and connects nature with the divine spirit. He therefore contains in himself the explanation of the purpose of the chain of beings rising from the senseless clod through the plant and animal as far as the first stage of human history. But this purpose originates in the divine purpose. Hence human nature is a revelation of the will of the Highest, if we take it in the comprehensive sense suggested by Tennyson's poem.

Doubtless the knowledge of human nature once fully reached will explain the inorganic as well as the organic phases of nature; the external process of causality as well as the internal process of motives and deeds. Then mathematics will be read in the light of psychology; so will geology and botany.

At present, however, we lay more stress on the difference between human nature and material nature than upon their identity. Sometimes, too, we restrict the use of our term human nature to the aims and aspirations, the emotions and convictions of man, and exclude the common rational elements of his mind such as we find treated in logic and psychology. In this restricted sense we not only sep-

[1] Read before the department of superintendence of the National Educational Association, at Chattanooga, February, 1898.

arate the humanities from the nature studies, but we take a special province of the humanities, namely, literature and art, and consider only its content as revealing springs of action.

In the course of study we place on one side all the studies that belong to mathematics, physics, biology, and astronomy, and we add to these the studies of language and history. We then place on the other side the single branch of study known as literature. We speak of the numerous studies in the first group as relating to nature and mind in general, but we contrast all these with literature, and assert that the branch of study set by itself over against that group, namely, the gems of poetry and belles-lettres, is the one that does more to give us a knowledge of human nature than all the others combined.

Thus in old age a man is apt to say of his studies in the elementary school: "What I learned of arithmetic, geography, grammar, and history has been useful to me, but it has not proved to be so thoroughly practical as the selections from literature which I read in the school readers; for in them I learned to observe and express the feelings and emotions of the heart. I learned to trace these mere feelings in their growth into convictions and clear ideas. They became principles of policy, and finally inspired and guided the acts and deeds of my life. In conning our reading lesson we learned how a blind instinct becomes an emotion, then a well-reasoned thought; later on, a conviction, and then an action; and last of all, a habit. We noted all this in the lives of others and also in ourselves. We came to know human nature in this important respect."

No matter how well equipped we might be as mathematicians or scientific experts of any kind, if we lacked the power of seeing this genesis of actions out of feeling in our fellow-men and in ourselves, our lives would become a chaos of misdirected endeavor. We never could adjust ourselves to our human environment; we should take offense where none was intended and make collisions with our associates, for we should first misunderstand their motives, next seize on the wrong means of persuasion and conciliation; finally end in misanthropy. With regard to ourselves, we should be equally powerless to control our passions and desires, not knowing whither they tended nor where they were to be repressed.

The narrow life can be lived through without much knowledge of literature. Intuitive practice in reading the feelings of one's fellows and in noting their effect on their actions which follow fits the individual for his narrow sphere. But there is as much difference between the knowledge of human nature that rests entirely on individual observation of the people of one's environment and that founded on an acquaintance with the best literature as there is between an Indian doctor's acquaintance with plants and the lore of a skilled botanist.

Let us make this plain by inquiring into the essential characteristics of the literary mode of portraying human nature.

First, we will note that there are two currents or courses of feeling and action; that of the particular individual, and that of the social whole of the community in which he lives. There may be harmony or there may be discord between these; it depends upon the individual.

When at harmony with the social environment the individual does not reveal the limits of his individuality nor the all-conquering might of the institutions of society. It is only in the collisions between the individual and the social order in which he exists that the whole of human nature is revealed in both of its phases, as individual and as social whole.

Thus we have tragedy and comedy as the two educative forms in which human life is served up for us in literature; for the collision of the individual with the social idea takes one of two forms.

Comedy shows us the individual arrayed against some settled way of acting or thinking, some ideal of society, and the discomfiture of his plans through self-

contradiction, but without destruction to the individual himself. The social organism in which man lives is of such a character that it converts his negative deeds into self-refuting or self-annihilating deeds. This occasions amusement to his fellows when they see that he is not seriously injured by his irrational deed. The comic character has mistaken the limits of himself. He has not noticed how the institutions of the social whole reenforce him, and render effective his individual deeds, if they are rational ones. To be rational a man's deeds must not only tend to his own interest, but to the interest of the family, the civil community, the nation of which he is a part. His smaller self must reenforce his greater self or else his greater self will reduce his efforts to zero.

But this comic side needs further discrimination from the tragic.

Tragedy arises from a serious attack on the social whole and the recoil of the deed on the doer, so that he perishes through the return of his deed. This is not all. There must be the justification of the individual's deed by the adoption of a principle from a social order different from that of the social whole which crushes him. He must act in the name of a greater self, or else his action will not be dignified enough to be called a tragedy. The death of the bandit, Karl Moor, in Schiller's Robbers is a tragedy, because it is not mere personal gain, mere selfish interest that causes the collision, but a revolt caused by a tyrannous social whole, whose rulers have done real or imagined injustice. We do not respect the mere thief or the mere highwayman. But we respect the patriotic remnant who struggle against a usurping social whole, even though we may feel satisfaction in their defeat by a more reasonable world order. The Children of the Mist are described by Walter Scott in the Legend of Montrose and in the Heart of Midlothian as the remnant of a once powerful people among the western highlands of Scotland, never tamed by their many defeats at the hand of the encroaching Anglo-Saxons who had obtained the rich and fertile lowlands. They fiercely defended themselves to the last, like the famous chieftan Kocheeis of the Indian tribe (Apaches) in Arizona a few years ago. We respect the Children of the Mist, but we feel the necessity of their subjugation by a more rational civilization. But we do not respect the burglars that hide in the slums of our great cities. The tragic character makes a collision with his social order in the name of another social order, it may be of a less advanced world order or of a more advanced one. Antigone defies the law of the king and offends against the state. But she obeys an older world order which requires the burial of a dead relative by the living member of the family. This collision is made stronger by the art of Sophocles. He interests us in the noble unselfishness of Antigone, while he casts suspicion of selfish ambition on the character of Creon the king.

So, too, we are excited to pity and terror by the events which bring Oedipus into dreadful crimes through ignorance. He, too, attacks the existing world order by a newer one.

There is the tragedy of the life of Socrates, also, who holds up a new world order to the Athenians, the first teacher in the world of the right of private conscience as against the established church of his time. Before Socrates there was no individual moral right—everyone was expected to obey implicitly the social custom without questioning it. This tragedy, however, is called by Hegel the tragedy of Athens rather than of Socrates. He drank the hemlock, it is true, but it was a triumphant death; for his was the entire future of the world history. Since his time there has been unceasing growth of the right of individual conscience among nations.

The tragic, we repeat, must have this collision of the individual against the social whole in which he lives, but he must be backed by the principle of another social whole, either a perishing world principle or one of the future just beginning its career.

A mere attack against the state from motives purely selfish is criminal, but not tragic.

The commission of crime, and the capture, conviction, and punishment of the criminal make a story that interests us. But if we do not discover a moral principle in the mind of the criminal we are liable to injury in dwelling on the details of the story. The Police Gazette is justly excluded from the family, because it educates toward crime rather than away from it. The story of Jack Shepard, as told by Ainsworth, and the other stories of like character idealize the mere selfish revolt against the civil order. They are written from the standpoint of mere selfish individualism. The individualism that Socrates initiated was that of a moral individualism. Spend your life in the inquiry for what is right, and do not refuse the hemlock if it is your reward for preaching the right.

The death of Socrates was the tragedy of Athens; the death on Calvary was the world tragedy. But the world learned and learns its deepest lesson from that tragedy; not merely the right of individual conscience is taught by that, but the worship of sorrow; the sacrifice of the self as mere selfishness for the emancipation of other selves; the principle of divine charity; the missionary spirit.

Tragedy reveals the depths of human nature, while crime does not, because it shows us the struggle between two social ideals, an older and newer, an earlier and a later. These are revealed in their fullness in the struggle.

As tragedy demands that the tragic character must be the bearer of a diverse principle of social order, so, too, does comedy require something more than mere capricious difference from prevailing custom, and something more than mere self-seeking at the expense of the social whole.

Spanish Cervantes has depicted for us the attempts of Don Quixote at resuscitating knight-errantry. Knight-errantry had been a few centuries before a very serious affair for all Europe. Chivalry was an essential epoch in the history of Europe, and there is no epoch in the evolution of modern civilization more important than it, for it was the desertion of the classic ideal for the Christian ideal; it was the celebration of this abandonment of the old ideal and the adoption of the new. The ideas of love, honor, and fidelity were consciously set up as the expression of the new freedom that dawned on the mind of Europe as a result of the world view of Christianity. Each soul has an infinite destiny beyond the grave. All that is secular is secondary to this religious principle. There were three crusades made as a result of this new consciousness: First, the conquest of the land containing the holy sepulcher. This was the outward crusade against Islam. Secondly, the inner crusade, the refutation of the Arabian interpretation of the Aristotelian philosophy by the great thinkers, marshaled by such scholars as Alexander of Hales, Albertus Magnus, and Thomas of Aquino. This was the scholastic crusade. After these outer and inner crusades came a little later the discovery of America, the third crusade, against the darkness of outlying heathenism. Queen Isabella contributed her jewels to fit out the fleet of Columbus in the name of the holy church.

Knight-errantry was a passing phase of one of the most serious of spiritual movements. And when we laugh at Don Quixote's adventures we do not laugh at him as a madman or lunatic, but at the ineptness of the Old World form seriously set up in the midst of a comparatively modern world. Its mediations seem absurd when deprived of the principle of chivalry and its social order on which they had been established.

Just so in Walter Scott's story of Woodstock, and especially in that of Old Mortality the excesses of Protestant individualism, both of Independents and Presbyterians, are found in comic situations because brought against a more advanced or matured theologic view. They furnish comic and not tragic situations, because they do not involve the characters portrayed in destruction for their views, but only in futile acts and endeavors; endless self-contradictions.

Aristophanes ridicules not the older world views, striving for reestablishment in his time, so much as the products of the new movements put forward by the sophists and the freethinkers of that time. He took Socrates as his type and model of a sophist. He ridiculed anything and everything that was offered as a substitute for the old customs, the Greek morality that had come down from the good old times. Nothing could stand up against the inextinguishable laughter kindled in the Clouds, the Wasps, the Frogs, and his other comedies. The bad went down altogether, and the good went down temporarily in the person of Socrates. But Aristophanes did not save Athens from "the newness," after all. Alexander the Great, the pupil of Aristotle, the pupil of Plato, the pupil of Socrates, had to save Athens from the good old times incarnated in Spartan conservatism. The great, grand pupil of Socrates, in the person of Alexander, marshaled Grecian youth to war on Persia, and his conquests extended to India and Bactria, and Greek kingdoms took the place of Persian satrapies. We see how serious were the elements entering the most comic of all comedies, those of Aristophanes. He had serious intentions, but he did not show the deeds of the individual returning upon him to destroy him. His dramas showed only the futility of plan and purpose undermined by inherent self-contradiction.

We have in later comic writers, say, Swift and Sterne, the production of comic situations by means of importing one nation's customs into another nation. Seen through the eyes of one land or native country the daily habits of another land or country seem absurd. The French word outré expresses it. Swift is an Englishman who goes to Ireland and acquires a habit of looking critically on the ordinary manners and customs about him. He does not ridicule the Irish, however, but his own countrymen, the English, and writes the voyages to Lilliput and Brobdingnag, everywhere showing up the inconsistencies and absurdities in the social and political life of England in the first part of the eighteenth century.

Sterne shows French and Belgian life through English spectacles.

Our own Mark Twain shows us border-land life through the eyes of the urban life of the Atlantic slope, and in turn he makes his most comic situations by showing us the border-land traveler, with his local prejudices and ignorance of the history of culture, making his journey through the museums and art galleries of Europe.

But in all these examples we have one serious national order against another, the French against the English, or the American against the European, or the earnest pioneer life against the life of culture.

A definition of comic and tragic situations may be made as follows, using the distinctions of content and form, content standing first for the temporary or transient, the local or individual interest, the less substantial side. When it is placed under the form of the permanent, the ethical or universal or the substantial interest, it is seen at once as ridiculous. The form is a world too large for the shrunken importance of the content to fill. The special interest is given the dignity of the general interest, the local and provincial puts on the airs of the world culture, and we can not help but laugh at it. We have within us the psychologic reaction of making up our minds for a serious and universal interest and then suddenly encountering the local and insignificant. We collapse with laughter, for laughter is the physical counterpart to the inner collapse of our ideas descending from the great to the small.

On the other hand, the content may be a serious matter, a collision of world ideas; the person bearing the new or old ideal, and with all seriousness setting it up against the established usage, proposes a content for which the existing form has no place. It would shiver that form to admit it. The established form must destroy it and its bearer. We may act against the new content and kill the messenger that brings it, but we do it in pity and terror, for it is a tragedy. The new substance is too ample for the old form. The new idea and its bearer can

not yet be tolerated. His time is yet to come. It must be a tragedy under the present circumstances.

We take courage, however, in this thought, that new forms are on their way which will permit without danger to the social whole a greater freedom in the adoption and promulgation of new or old ideas. There will come a larger tolerance and fewer tragedies.

In concluding our survey of the tragic and comic we may ask ourselves whether they belong to the sublime or the beautiful, one or both.

We are disposed to call the tragic the sublime and to see in the comic its opposite, which is said to be the ridiculous. So the opposite of the beautiful is the ugly. Certainly the comic or ridiculous contains the elements of ugliness, but in contrast with what? Certainly not with the sublime. It is the irrational overcome by the rational. But the beautiful is defined as the spectacle of the rational overcoming the irrational. It is a presentation not to the reason or the intellect primarily, but to the senses; to the senses primarily, and only secondarily to the intellect or reason. Nevertheless, both activities, the sense and the reason, must participate in the perception of the beautiful. To the reason alone the beautiful becomes simply the true. "The beautiful is the splendor of the truth," said Plato; it is the glory of the truth seen by the senses. Just so the truth presented to us through the will is the ethical, or rather the good. As the reason must be present and cooperate with the senses in the perception of the beautiful, so the reason must be present and cooperate with the will in the good.

The beautiful certainly includes the works of art in which the tragic and the comic, one or both, are presented. The sublime, therefore, may be considered as falling under the concept beautiful if it is to be applied to tragedy. But it is better to make the sublime a separate idea coordinate with the beautiful, and not containing or contained.

The sublime is properly applied to that whose content and form are not commensurate or in harmony with each other. The Old Testament descriptions of God's power often make nature so inadequate that it is seen to be no adequate revelation of God's omnipotence. The result is an idea of sublimity, but not of beauty. The vast things of the earth, its mountains and seas, the sky and the rocky foundations of the earth, these, together with the sun, moon, and stars, are such inadequate manifestations of Jehovah that we conceive sublimity rather than beauty. The beautiful is an adequate manifestation, something in harmony with that which is manifested in it. The sublime reveals the spiritual as not revealable—that which is to manifest the spiritual is made very distinctly to manifest its incapacity to manifest—hence we have an æsthetic contradiction, art refuting itself.

We now see or may see the educative function of the tragic and comic; for all art must treat as its best subjects the tragic or the comic phases of human nature. In each of these it makes us conscious of the eternal elements of human nature, the divine-human in some contrast with the finite and transitory.

In no way can the individual learn to know the practical problems of human nature so effectually as through art and literature. He learns to see how the deeds return upon the doer to bless him or to curse him. The individual learns to know his greater self, the social whole.

The world view of a people gets its utterance in the national poets, and hence the great works of art, such as have been furnished by Homer, Æschylus, Sophocles, and Aristophanes for the Greeks, by Virgil and Dante for Italy, by Molière and Cervantes for France and Spain, by Shakespeare for England, and Goethe for Germany, contain a vicarious experience. The types of character presented give the people their apperceptive material under which to classify the people they meet with in their lives and the deeds which they see performed.

We learn best the lesson of the deed which we see others perform. Without making the experience ourselves, we profit by seeing others make it. The experience of the poet thus becomes our own vicariously. Human nature recoils against direct advice, and does not like to have personal applications made. But as Aristotle said, the spectacle of the drama purifies the beholder. The lesson is more impressive and wholesome because it is accepted by us in our freedom and not imposed upon us by external authority.

IV.

The Æsthetic Elememt in Education.[1]

In the course of study as we find it in the schools there are five distinct lines of intellectual development which have deep significance, both as regards the unfolding of the mind itself and the adjustment of the career of the pupil toward the social institutions in which he is to live.

These five lines of intellect which the pupil cultivates in school aid him in perfecting his powers as an individual, and also in solving the problem of life. They have both a psychological side and a sociological side.

Two of these five intellectual disciplines are mathematics and grammar, these relating especially to the world of nature and to the world of mind as revealed in language. While mathematics give us the forms in which inorganic matter may exist and be moved, and makes known to us the structure of time and space and all externality, grammar and its kindred studies, pure logic and ethics, give us the form of self-activity and the structure of all that possesses internality.

Here are the two polar directions of intellectual education, relating the pupil to matter and to mind. Psychologically, these branches give him the first use of the two deep-lying categories of the intellect, quantity and energy; the category of quantity deals with results in time and space; the category of energy deals with causal originations. If one does not see, at first, how grammar and logic deal with energy and its laws of self-activity, let him reflect on the fact that logic deals with the ideas of universal, particular, and singular, and grammar shows the devices in speech for their expression; and then next, let him consider that energy or self-activity has just these aspects, being general, if we consider it before it has acted on itself, and particular in the process of activity. It is, moreover, singular, or one activity uniting general and particular. He will find this thought the key to logic and grammar.

Out of these two primordial studies, mathematics and philology, arise three other studies, making up the five.

First, there is the study of organic nature, the first transitions from mathematical nature toward mind, or the pole of energy; not only the plant and the animal belong to organic nature, for they are manifestations of life, or energy, which is active in organizing matter and movement into bodily expression, but, besides these, we have chemical processes, and geological changes, cycles or circular movements of astronomical bodies, sun, moon, and planets, and the meteorological process, all of these belonging to the crude first stages of the manifestation of energy on matter. For, in short, we have a world that is in the process of making. It is ascending out of the mathematical condition, so to speak, to the organic condition, wherein energy, or mind, is manifesting itself in a more direct and adequate form; for the plant and animal show us perpetual readjustment of the internal to the external.

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[1] Read before the National Council of Education at Milwaukee, July, 1897.

The internal readjusts itself to the external, but with a purpose, namely, to make the external environment of nature conform to its ideals and become its instrument. It is, therefore, at first an act of adjusting itself to the external, but finally a readjustment of the external to the internal, all brought about by the power of mind or energy. Thus all studies of nature, not only botany and zoology, or biology in general, but also physics, both molecular and molar (movements of molecules and masses)—in short, chemistry, and the sciences of heat, light, and electricity, also geology, meteorology, astronomy—all relate to the beginnings of the organic process and are a sort of foundation to it.

Hence the two branches that bring the school pupil face to face with nature are mathematics and biology, or the science of organism. In the elementary school geography covers this line of intellectual training, while arithmetic covers the purely inorganic side of nature.

There are two other lines, namely, the study of history and the study of art and literature, both of these subsidiary to the study of energy or self-activity as found in grammar, logic, and ethics.

History shows the spectacle of the will power of individual man consolidating into social units of will power—organizing institutions, the state, the church, and civil society, with its division of labor and its union of labor through commerce. In history the little individual sees his bigger self. In the Middle Ages the philosophers used to speak of the microcosm, or the individual man, and the macrocosm, or the organic whole of individuals. History, in this way of looking at it, enables the microcosm to see the macrocosm.

Even in the most elementary beginnings in the district school or the kindergarten there are scraps of history and biography that initiate the pupil into this great and important field of knowledge and enable him to see in dim, shadowy outlines what the great world (the macrocosm) is doing, and he is astonished to find that there are not only individual deeds for particular uses, but also deeds done by society as a whole—national deeds, and even cosmic deeds. It takes a long time to grow into the use of this category of the mind whereby we can see clearly social action and understand its results critically. The growth of this insight is the development of a moral sense in the pupil. It is something higher than moral habits, which he has already acquired in the family or ought to have acquired before coming to school. The stage of moral habit was learned through obedience to authority. It listened to the commands, "do this, and refrain from doing that." But though moral habit is a great thing in the conduct of life, it is not so great as moral insight, which sees the necessity of morals for the very existence of the social whole. Without ethical action the individual can not be reenforced by the action of his fellow men; he can not have institutions back of him—the family, civil society, the state, the church.

The fifth study, literature and art, is called "æsthetics," or, as in our council programme to-day, "the æsthetic element in education." I am sure that we can understand it better if we approach it, as we have done in this paper, by considering the hierarchy of studies—mathematics, grammar, biology, and history—on the way to it. For we have already become familiar with the trend of the whole. We have the general spectacle of a world of matter acted upon and organized by a world of mind or energy. From the mathematical or inorganic field we ascend to plants and animals organized by the principle of life. Then we come to the world of man, in which individuals unite to form social wholes, and see the ethical idea which forms the structure of institutions. For man as individual can not form a member of an institution unless he is moral. Morality is, in fact, a name for the kind of action which will not injure others nor obstruct their freedom—the name for deeds that will reenforce the deeds of others.

The manifestation of mind or self-activity on matter appears first in plants and

animals. For all living being has self-activity. But there is a higher form of manifestation, and that is found in history. It is, as we have seen, the smaller individual selves of men forming above them bigger selves or social selves, such as States and nations.

Art and literature, which is the æsthetic activity of men, has also for its function the manifestation of energy—or mind or self-activity. And, indeed, it is specially a manifestation, for it essays to create the appearance of it where there is no realization of it. History shows us not only an appearance of divine reason, but also a realization of it. Art shows us an appearance of it in fields of mere inorganic being—the mathematical province. It takes matter and shapes it into living forms, and makes it take on poses and movements that express freedom and moral action.

In short, it turns the world of externality pure and simple into a world of internality made perceptible to the senses of seeing and hearing. It shapes bronze and wood and marble into temples and statues. It brings out by light and shade and color and perspective on surfaces the paintings and drawings that represent rational and moral beings. It produces sound, arranged in a tonic system, and can by this means express feelings in a more direct manner than by the plastic arts. Finally, it makes the words of language its art material and reaches poetic expression, the highest of the arts, because of greater compass than all the others and more adequate in its manifestation of reason.

The school has always had literature in all its grades, but not so generally the other arts, except music.

It is the practical part of this discussion to show that architecture, sculpture, and painting should add their healthful lesson to the curriculum of the school.

Let us briefly consider in the remainder of this essay the nature of the several arts and their respective capacities to educate man by the spectacle of reason.

Plato said that "the beautiful is the splendor of the true." This is a definition good for all time. For art renders visible or audible the world of internality and truth—the world of mind or reason is indeed the object of the several arts or æsthetic modes of expression.

The several fine arts are, in an ascending scale, architecture, sculpture, painting, music, and poetry. Dancing, landscape gardening, engraving, elocution, dramatic art, and rhetoric are accessory to one or more of the five great departments of art, rather than separate departments.

Art appeals to the feelings. It arouses emotions and aspiration, but not appetites. Its effects are, therefore, to purify the feelings. It directs them toward ideals. It is not so much an education of conscious thought as of instinctive judgments in matters of taste. But as it has to do with ideals, it inspires religious and ethical emotions, and through these indirectly develops thought.

Architecture.—The silent lessons of architecture, the impressiveness of its masses, its harmonious proportions, its suggestion of great natural powers overcome by spiritual might—these effects are obvious. Art has an end of its own, and to be art of a very high character it must show that the beautiful object exists for itself, and does not exist for the sake of other objects—not even for morals or religion. But of course the highest art will be found in harmony with both morals and religion.

There are, as shown by Hegel, three stages to each of these arts, namely, the symbolic stage, wherein a spiritual might struggles without pronounced success against the natural powers which hinder it; higher than this, classic art, wherein the spiritual might has completely subdued matter and force into means of expression for its ideals; third, there is romantic art, Christian art, which expresses the ideal with more or less antagonism toward what is material and natural.

Thus the architecture of India and Egypt belongs to symbolic art. The human

is struggling against the natural, but is not able to subdue it and achieve freedom. The highest achievement of Egyptian architecture appears in the pillars or columns of its temple crowned with the lotus, for in the lotus capitals there is an approximation toward gracefulness.

Greek architecture is much superior in its expression of freedom. Its Doric, Ionic, and Corinthian columns fully achieve gracefulness. In a solid wall for the support of roof the manifestation of the forces which are struggling against the power of gravity are not so adequate as when the support is a pillar or column. The column being isolated, the effects of gravity are exhibited in the yielding of its capital, its expansion as in the Doric capital, or the graceful yielding curves as appearing in the Ionic volute, or the graceful bending of the acanthus leaves in the Corinthian capital. Gravity is manifested on the one hand, but the Greek capital shows how easy and gracefully the supporting column resists the downward force.

The Roman arch is converted into a dome by carrying out its principle on all sides, instead of laterally alone. The arch is a ready suggestion, symbolically, of the Roman national principle. Each stone in the arch is relatively a keystone to all the rest. All depends on each and each on all. Each Roman citizen felt and acted as if he were the keystone to his nation. The dome suggests the sky over all, and hence toleration. Under the dome of the Roman Pantheon the gods of all nations were set up and worshipped. The dome is an appropriate symbol for the State or nation. Each patriotic citizen consecrates his life for the life of the social whole, and each is in turn supported and protected by the rest like a keystone.

Romantic architecture comes to its highest completeness in such Gothic structures as the cathedrals of France and the abbeys of England, but especially in the Cologne cathedral and that of Amiens and the Sainte Chapelle of Paris. It celebrates the Divine not as something originating in matter and lifted up away from matter by its self-activity, but it expresses rather the complete nugatoriness of matter except as supported by spirit. For instead of expressing the effects of weight or gravity in its slender columns, it expresses rather the support of what is below by what is above. The columns seem visibly to pull instead of to push or thrust. It is the heavens that support the earth. It seems as if the cathedral floor is fastened to the columns, and these pull up and sustain the floor by fastening it to the roof. All the lines point upward and seem to worship what is above. The Christian religion is expressed in the Gothic cathedral, which has been called a petrified prayer. The Roman dome expresses the universal sway of civil law—a sky of justice, which extends over all. The Greek temple shows freedom in matter. It crowns a hill, like a blossom which has ascended from the surface of the earth to manifest a deep inner self-activity of matter itself.

Sculpture.—The statuary of Egypt and the Orient does not express freedom, it abounds in stiff and ungraceful lines, but the statuary of the Greeks is the supreme achievement of that beauty-loving people. In the highest period of its perfection it represents so much dignity of character, so much rationality and clear consciousness of purpose in its figures of the gods, that the Divine itself seems to be present in material form. Christianity has not been able to express its distinctive ideals in sculpture. It finds painting a far more adequate means. Painting can express sentiment by means of color; it can show subjective feelings and subtle reactions occasioned by the situation in which the theme of the work of art is placed. Modern sculpture is defective through the fact that an attempt is made to express sentiment, rather than action. The highest sculpture exhibits the serenity of the soul even in the presence of danger.

Painting.—The proper subjects of painting are to be found especially in the Christian religion and in the situations of modern life that appeal intensely to our ethical emotions. Greek painting, except what has been preserved for us in the

frescoes of buried cities, is known to us only through descriptions. From the evidences before us it is safe to say that painting did not find with the ancients its appropriate themes. The subjects of Christian painting are divine love and tenderness as seen in the Madonnas; the soul, supported by its faith in the Divine, manifesting its constancy even when enduring the bodily tortures of martyrdom; the Divine, gracious and forgiving even the crucifixion scene; the Transfiguration reflecting the light of the soul when seeing pure truth; the Last Supper exhibiting the emotions of the good when betrayed by the bad; the Last Judgment showing the return of the deed upon the doer; not so much action as reaction, not so much the deed as the emotion aroused in the depths of the soul by the presence of injustice and hate.

Music.—Music has the form of time, while architecture, sculpture, and painting have the form of space; hence it can express all the steps in the genesis of the situation which it portrays, and is not confined to a single moment, like the special arts. The group of statuary, the Laokoon, for instance, must seize the highest moment of the action and present it. In this highest moment we can see what has happened before and what is likely to happen in the time that follows. (Goethe has discussed this admirably in his essay on the Laokoon.) It will not do for the sculptor to attempt to present us in his work of art the entire completion or working out of the theme; he must seize it in the middle, where the spectators can easily read the past series of actions and motives and forebode what is to succeed. Painting is not so closely confined to a point of time as sculpture. Painting can idealize space through perspective, light and shade, color, clearness and obscurity. While actual size, actual length of line, is necessary in architecture, in painting it can be represented by perspective. Not only the largest temple of the world, but even Mont Blanc could be painted on a piece of ivory which could be covered with one's thumb. Painting, moreover, by reason of the fact that it can present to us sentiment through the aid of color, finds the limitation of its theme to a single moment of time less important. But music can take up the whole series of actions and reactions which are presupposed by a serious situation of the soul and can carry these all through to the final denouement. The material side of music is found in the structure and peculiarities of the several musical instruments—vibration by means of strings, columns of air in wind instruments, and, above all, by the vocal chords of the human being. A tone is a repetition of the same wave-length. One tone can produce with another one which has an agreement with it partial or complete chords and concords; with another tone not agreeing with it it produces a discord. There is a natural order of tones, partly discordant and partly concordant, which forms the scale. It includes what is called an octave. An aria starts from the fundamental tone of a scale, or from its third or fifth, and by departing from the fundamental tone or from those kindred with it expresses its alienations and collisions. Finally, it returns to the fundamental tone or one of its close kindred, and the problem is solved. There is also counterpoint, which, like the persons in a drama, expresses a concordant or opposing aria to the chief one. With these resources music excels all the plastic arts in its ability to express problems and collisions of human life and their solution. Emotional disturbances and the restoration of harmony naturally take on this form of expression. But there is the music of sensuous pleasure, and opposed to it the music of moral action. The Italian boat song or the Scotch reel may express the former, and a sonata or symphony of Beethoven will express moral action. Architecture has been called frozen music. Neither architecture nor music deals directly with the shapes of rational creatures or with the image of the human form divine, they are confined to proportions and symmetries.

Poetry.—Poetry is the form of art that unites in itself all the others.

It is closely allied to music—the time art—and through the imagination it can

reproduce each and all of the space arts. It can do more than this; it can, through its appeal directly to imagination, transcend the time limitations of music, and the space limitations of architecture, sculpture, and painting. There is the poetry of the nation, or epic poetry, the poetry of society, or the drama, and the poetry of the individual, or lyric poetry. Comedy shows us a collision which has arisen between the individual and some social ideal in which the discomfiture of the individual is not so deep as to destroy him. The social organism in which man lives is such as to convert his negative deeds into self-refuting or self-annihilating deeds. This occasions laughter when the individual is not seriously injured by his irrational deed. Tragedy, on the other hand, shows us a serious attack upon the social whole and the recoil of the deed upon the doer, so that he perishes through the reaction of his deed. Tragedy, however, requires as a necessary condition that the individual who perishes shall have a rational side to his deed. A mere villain is not sufficient for a tragic character; there must be some justification for him.

The greatest poets are Homer, Dante, Shakespeare, and Goethe, and these artists are in the truest sense educators of mankind. The types of character exhibited in their literary works of art, Achilles, Agamemnon, Ulysses, Macbeth, Hamlet, Wilhelm Meister, and Faust, have helped and will always help all mankind to self-knowledge by showing them how feelings become convictions and how convictions become deeds, and how deeds react upon the doer through the great organisms of human society. The world-wisdom of a people is largely derived from its national poets, not as a moral philosophy, but as vicarious experience. Aristotle said that the drama purifies the spectator by showing him how his feelings and convictions will result when carried out. Without making the experience himself, he profits by participating in the world of experience depicted for him by the poet. It is more or less in human nature to recoil against direct advice, especially moral advice. We do not like to have its application made personal; but in the work of art we see the moral energies of society acting upon ideal personages, and the lesson to the spectator is more impressive and more wholesome, because it is accepted by him in his freedom and not imposed upon him by external authority.

CHAPTER XIII.

THE WESTERN LITERARY INSTITUTE AND COLLEGE OF PROFESSIONAL TEACHERS.[1]

A Chapter of Western Educational History.

By B. A. Hinsdale, Ph. D., LL. D., professor of the science and the art of teaching in the University of Michigan, and Mary L. Hinsdale, A.M., graduate student in that institution.

One of the most interesting chapters in Western educational history, and, indeed, in the educational history of the country, has never been written and is known only in scraps and fragments. This missing chapter the writers here attempt to supply. Its subject is the Western Literary Institute and College of Professional Teachers, commonly called by the second of these names. The origin of this college is involved in some obscurity that it would be difficult or, perhaps, impossible to clear up at this late day; but the main facts are clear and plain.

An educational society called the Academic Institute was founded in Cincinnati in 1829. It was in all respects a pioneer society, and not much is now known about it. If the constitution and roll of members, with reports of the proceedings, are now in existence, the writers do not know where they may be found. The institute was undoubtedly a local association, and it is a significant fact, illustrating the character of educational progress, that it was organized the same year that Cincinnati, having first procured from the general assembly of the State the requisite authority, including power to levy special taxes, organized her system of common schools. The main interest attaching to the institute springs out of the fact that under its auspices was formed the association whose history we are to trace.

The publishing committee that sent out the first volume of Transactions of the College of Professional Teachers furnished in its preface some interesting items of knowledge. It gave this very brief account of the origin of the college:

The idea of the College of Teachers, in its present form, was first cast in the Academic Institute, an institution of similar character, but more limited operations, established in 1829. The project was the work of teachers, as may be easily imagined, but the sympathies of noble-minded and patriotic citizens, more

[1] The principal sources of information for the institute and college are: The Academic Pioneer, Cincinnati, 1831, Vol. I, No. 1; the six volumes of Transactions of the Western Literary Institute and College of Professional Teachers, 1835–1841; The Western Academician and Journal of Education and Science, edited by John W. Picket, Cincinnati, 1837–38; E. D. Mansfield, Memoirs of the Life and Services of Daniel Drake, M.D., etc., Cincinnati, 1855, and Personal Memories, Social, Political, and Literary, with sketches of many noted people, 1803–1843, Cincinnati, 1879; William G. W. Lewis, Biography of Samuel Lewis, first superintendent of common schools for the State of Ohio, Cincinnati, 1857; W. H. Venable, Beginnings of Literary Culture in the Ohio Valley, historical and biographical sketches, Cincinnati, 1891; and W. T. Coggeshall, Ohio System of Common Schools, in Barnard's American Journal of Education, Vol. VI. Mansfield says the College of Teachers was formed about 1833. Venable assigns it to 1831 in one place (p. 317), and to 1834 in another (p. 421). This confusion of dates as well as the contradictory forms of the name is probably due to the fact that the college was an evolution, presenting different forms and names at different times.

ambitious of usefulness than fame, have been the animating cause of its permanence and success. The first general convention of the teachers of the Western country was called in June, 1831, under the auspices of the Academic Institute. The proceedings and addresses were published in No, 1, of The Academic Pioneer.

Resorting to the number of the journal just named for further information, we are met, first, by the statement that, "agreeably to public intimation, the members of the Western Academic Institute and Board of Education met in the First Presbyterian Church in Cincinnati, June 25, 1831, at 11 a. m." The document contains a variety of information. First comes an address preliminary to the constitution, and then follows the constitution itself. Article I, reads as follows:

This association shall be denominated the Western Academic Institute and Board of Education, whose object shall be to promote harmony, cooperation, and the diffusion of knowledge among its members, and to discuss such subjects as may be considered conducive to the advantage of education generally.

There were to be two kinds of members, ordinary and honorary members; the first approved professional teachers, the second such literary and scientific gentlemen as might be chosen for the purpose. The officers were to be a president and a vice-president, recording and corresponding secretaries, a treasurer, a librarian, and seven counselors, who were to have charge of the periodicals, books, and library of the association, and were to make the programmes of the annual meetings. The society was to meet the first Saturday of every month, and the anniversary is appointed to be held in Cincinnati on the last Saturday of June, on which occasion an anniversary address was to be delivered. The significance of the second half of the name of the society is explained in the following article:

The society shall choose annually a board of education, consisting of honorary members, whose prerogative it shall be, individually or in committees, to visit and inspect the schools and academies of the members of the society quarterly, or oftener if they think possible, provided such visits do not contravene the duties of the city visitors of the district schools.

The principal address at the meeting of 1831 was delivered by Rev. Dr. Bishop, president of Miami University.[1] However it may have been seventy years ago, this address is now interesting reading. Dr. Bishop begins with setting forth various arguments for education, as those drawn from its political, religious, and industrial uses. He insists particularly upon the value of education to the people of the United States, dwelling mainly upon common schools, and alleging that improvements in these schools have not kept pace with improvements in other departments of life. He speaks of the disorganization growing out of the fact that each teacher is compelled, in defiance of all common sense and sound principle, to teach almost everything at one and the same time, and declares that a common school, to be efficient and to correspond with the other improvements of the age, ought to be divided into distinct departments, as follows:

In one department ought to be taught, and taught only, the alphabet, including the pronunciation of the vowels and diphthongs, in words of from one to four syllables.

In a second department ought to be taught arithmetic, from notation to the single rule of three.

In a third I would put reading and spelling and English and penmanship.

In a fourth I would put geography, with sacred history and the history of the United States; and

In a fifth department I would put all the higher branches of arithmetic, with the elements of general history, and of mental philosophy.

The advantages of having some such distinct departments would be these:

1. The elements of every distinct article would thus be presented to the young

[1] An interesting but brief sketch of Dr. Bishop, who had been a professor in Transylvania University, Lexington, Ky., for some twenty years before entering upon his work at Miami, may be found in the Decennial Anniversary volume of Miami University. The Republican Publishing Co., Hamilton, [1899].

mind distinctly and clearly, and hence, in the most of cases, everything would be fully understood from the very beginning.

2. A habit of forming clear and distinct conceptions would thus be early acquired. The common mode of teaching children is extremely unfavorable to this important branch of mental discipline.

3. A competent teacher would, under an arrangement of this kind, give a great deal more instruction on any one subject within a given time than in the ordinary mode and with a great deal less animal exhaustion.

Dr. Bishop pauses to glance at the influence that an improved mode of instruction in the primary schools would exert on the higher schools and colleges. More pupils would be fitted for the higher schools, more persons would receive an improved education, students who went to college would go better prepared, and the course of study in the higher schools could be extended and improved. He dwells at length upon the need of competent teachers. The subject of education he declares to be one great whole; no matter what else is done it will be of little value unless republican simplicity is preserved; much time must be devoted to instruction, both by teacher and pupil, in order to secure a good education, and proper social intercourse between pupil and teacher must be fostered. Of the charlatanry that prevailed, he speaks in this decided fashion:

The strolling men of wisdom and of experience who propose teaching grammar and geography and astronomy and chemistry and natural philosophy and Latin and Greek and almost everything, in some ten or twenty or thirty lessons—and thirty lessons generally exhaust all their knowledge and acquirements on any one subject—these strolling teachers follow an occupation about as honorable to themselves and about as profitable to the community as the occupation of strolling beggars and strolling showmen is. There is, in fact, only one class of men who follow an occupation less honorable—that is, the class of strolling blacklegs.

The third address, delivered by Mr. Alexander Kinmont, was explanatory of the objects and designs of the Western Academic Institute. It contained what we should now consider an excessive number of Latin quotations, but Mr. Kinmont was fond of the classics, and such was the fashion of the times.

The committee of publication respectfully solicit information from all parts of the great Valley of the Mississippi concerning the condition of schools, the various improvements or changes that may have been lately introduced, and the state of public feeling on this very interesting and important subject.

The pamphlet closes with the prospectus of The Academic Pioneer, to be conducted by the editorial committee of the institute. The purposes of this publication are declared to be to furnish information in the various departments of education, to give efficiency to the means of instruction, to call to its aid the improvement making by the ceaseless action of the human intellect, and to bring home to the minds and bosoms of parents and instructors the importance and magnitude of the duty of proper attention to the moral, physical, and mental character of the young. The purposes are still further explained, and school committees and parents are appealed to to take a deep interest in the enterprise. As soon as a sufficient subscription should be received to justify the continuation of The Academic Pioneer, it would be published on or about the first of every month. It was to be 16 pages in size, and the price was fixed at $1.50 a year.[1]

[1] The library of the Historical and Philosophical Society of Ohio, in Cincinnati, contains a single copy of a document that bears the following title page: "Academic Pioneer, Vol. I, Cincinnati, 1831, No. 1. Proceedings of the first anniversary meeting of the Western Academical Institute and Board of Education. Held in Cincinnati, June 25, 1831. Quid majus reipublicæ, majus meliusve afferre possumus, quam si juventem docemus, et bene erudimus.—Cicero. Cincinnati: Williamson & Wood, printers, 177 Main street. 1831."

Venable, in his "Partial list of literary periodicals published in the Ohio Valley from the year 1803 to 1860," gives this title: "The Academic Pioneer and Guardian of Education, Cincinnati. Monthly. 1833. 40 8-vo. pages. Price, $2. Organ of the Western Academic Institute and predecessor of The Academician, Albert Picket, editor."—Beginnings of Literary Culture in the Ohio Valley, p. 135.

Mr. Venable calls the meeting of 1831 "a general meeting of teachers" and "a convention."[1] The publishing committee of 1835 also calls it "a general convention of the teachers of the western country." We have no list of the members and are not able in all cases to locate those whose names are given, but it is clear that a large majority of those in attendance were from Cincinnati. Rev. Elijah Slack, A. M., D. D., president-elect, was from Cincinnati, while one of the vice-presidents was from Harrodsburg, Ky., and one from Risingsun, Ind. The long list of officers embraces the names of many of the men who were afterwards best known and most active in the College of Teachers.

It is apparent that the year 1831 was an important one in the history of the organization. Unfortunately, we have but meager accounts of what was done the two following years. The preface of the Transactions of 1834 contains a few bits of information. The second general convention was held in October, 1832, and the College of Teachers was then embodied in a constitution of its own and officered. Apparently the change of name from Western Academical Institute and Board of Education to Western Literary Institute and College of Professional Teachers was made at this time. The committee states that the proceedings came but partially before the public, and the addresses, although replete with spirit and sense, and worthy of being more generally known, were not published. "It was our poverty," said they, "and not our will that consented to this failure." Mr. Venable, drawing upon other sources of information, gives this fuller account of the convention:

> The object of the second meeting in 1832, as announced in the newspapers throughout the West, was to promote the interest of education and to secure the cooperation of parents and the friends of science in aid of scholastic institutions, whether they are of a public or private character. The Cincinnati Mirror described the association as a congress of talent, several displays of which were a treat of the highest gust.[2]

The publishing committee of 1834 tells us further that the third general convention, held in October, 1833, was marked by an increase of power and interest; addresses of various descriptions were listened to by crowded audiences of intelligent citizens, but no more than a brief view of the proceedings appeared; yet even this, they say, when circulated through the Western country attracted general attention and proved how warmly the cause was espoused. It found disinterested friends in every quarter. In November of the same year a similar convention was held in Lexington, Ky.

It is quite clear that in the partial organization of 1831 the ambition of these zealous friends of education had outrun their ability. It would appear that the prospectus of The Academic Pioneer must have failed to accomplish its purpose, or at least that that journal could not have lasted beyond a few numbers, for if it had continued until 1834 it would have furnished the college the organ of publication that it needed, and might even have rendered unnecessary the series of volumes known as the Transactions. It took the College three years to fill out the form of 1831.

We have now reached the time when the promoters of the College were better able to realize their ideas. Beginning with the fourth annual meeting, in 1834, we have six annual volumes of Transactions, which give us a full view of what the College was doing. These volumes contain the minutes of the business sessions, most of the formal addresses and reports, the constitution and the annual list of members, and editorial notes, together with addresses and notices to teachers and to the public. This series of volumes, which is now rare as well as valuable, is quite indispensable to any thorough investigation of Western educational history. Its rareness—which means that it is little known—is a reason for drawing

[1] Beginnings of Literary Culture in the Ohio Valley, p. 421.
[2] Ibid., p. 422.

upon its treasures more fully than would otherwise be necessary. In some respects the minutes of the sessions are even more interesting than the formal addresses. The two together show us very fully what was passing in the minds of the most active educators and friends of education in the Mississippi Valley in the years 1834–1840. We shall go through the volumes in order. They also show, in a measure, what was taking place in the general body of society.

The College of Professional Teachers in 1834 had now become fully organized.[1] Its name might suggest, perhaps, that it was a school, or some similar organization, for the preparation of teachers. It was nothing of the sort, but only an association of teachers and others interested in education. Its character will become very clear when we have taken account of its constitution. The preamble was in these words:

Whereas the convention of teachers assembled in Cincinnati, deeply impressed with the importance of organizing their profession in the Valley of the Mississippi by a permanent association, in order to promote the sacred interests of education so far as may be confided to their care, by collecting the distant members, advancing their mutual improvement, and elevating the profession to its just intellectual and moral influence on the community, do hereby resolve ourselves into a permanent body, etc.

Article 1 ordains the name, the Western Literary Institute and College of Professional Teachers, and defines its sphere of work:

Its object shall be to promote by every laudable means the diffusion of knowledge with regard to education, and especially by aiming at the elevation of the character of teachers which shall have adopted instruction as their regular profession.

It will suffice merely to summarize the other features of this constitution.

The association was to be composed of such teachers of good literary and moral character as might sign the constitution and pay to the treasurer the initiation fee of $1 and an annual assessment of the same amount; and of such societies for the promotion of education as should annually send delegates to its meetings. Any gentleman eligible to membership might become a life member on the payment of $10, and become exempt from further assessment. Honorary members might be elected on the recommendation of the board of directors.

The officers were a president, one vice-president and five directors for each State represented, a corresponding secretary, a recording secretary, and a treasurer, all of whom were to form the board of directors, to be elected at the annual meeting. The president and vice-presidents, the two secretaries, and the treasurer were to perform the duties that the titles of their offices suggest. The board of directors was to have the general management and supervision of the society, appoint competent persons to deliver the annual address and lectures, and recommend to the society suitable persons to serve on standing committees. The board had power to appoint from their number a local executive committee to carry into effect duties that might be assigned to it by the constitution. It was also directed to procure the annual address and lectures for publication, and empowered to examine the reports of standing committees and other communications, and to publish such of these documents as, in its opinion, would throw light on the subject of education. Each section of the directory, through its vice-president within its own State, had power to admit associates of that body, and were charged with the interests of education, but were made responsible to the general institute for their proceedings, to which they were to make an annual report.

The stated meetings of the society were appointed to be held annually in the city of Cincinnati, beginning on the first Monday in October. Special meetings might be convened by order of the directors. By-laws in accordance with this constitu-

[1] Transactions of the Fourth Annual Meeting of the Western Literary Institute and College of Professional Teachers. Held in Cincinnati, October, 1834. Cincinnati: Published by Thomas Drake. 1835.

tion might be made at any time, but no alteration or amendment of the constitution itself could be made unless recommended by the board of directors and agreed to by a majority of the members present at an annual meeting.

Some time before 1834 Albert Picket, sr., had become president of the college, and he continued such at least as long as the Transactions appeared.[1] He opened the annual conventions with an address. In the address of 1834 he defined some of the prominent objects which led to the formation of the college. These were as follows:

(1.) The necessity of advancing the profession by introducing a higher standard and requiring a more complete preparation among its members by rendering apparent to the community the great value of thoroughly educated teachers.

(2.) The desirableness of giving teachers an opportunity of becoming acquainted with each other and freely communicating their views of new modes of instruction as they are introduced.

(3.) The advantages of a liberal discussion on various systems and the accumulation of facts from numerous independent, practical teachers, and the consequent improvement of the objects, the course, and the means of instruction, and the qualifications and characters of teachers.

We shall now look into the secretary's minutes of the session of 1834 to see what we can discover.

For one thing, the local executive committee reported what it had done since the last annual meeting. In particular, it had addressed a circular to the boards of directors of the States represented and others interested urging the establishment of State institutions for the preparation of teachers. In Ohio this circular had had the effect of securing the chartering of an institution for collegiate purposes under the style of the Teachers' Institute, which was expected to go into operation as soon as it could be effected with a prospect of success. It had also brought before a convention held at Lexington, Ky., the previous November a plan of a general association of all who felt an interest in the promotion of education in the West. This subject it now urged upon the present convention. The proposed association should include as members literary persons who were friendly to the cause of education, embracing the College of Teachers as a component part, with a view of securing a sphere of operations and influence coextensive with the Mississippi Valley. The educational condition of the West was deplorable, with some signs of improvement, and educational information scanty and hard to be obtained. The committee suggested that the State legislatures be induced, if possible, to offer suitable rewards for the best essays on the best systems of education for the West. It mentioned, also, but without a recommendation, the subject of an educational periodical to be founded by the college.

There were 125 members in attendance.

The enlargement of the influence of the institute and college occupied much time and attention. The Circleville (Ohio) Association of Teachers sent in a communication suggesting that the college so amend its constitution as to admit auxiliary societies. Out of the discussion grew the constitutional provision relating to that subject that has been quoted above. The board of directors, through the executive committee, in obedience to instructions, also sent out an address to

[1] The authors have failed to find even the slightest biographical sketch of Albert Picket. He first comes into view in New York City in 1818, as editor, in connection with his son, J. W. Picket, of The Academician, the first educational journal published in the United States, and of which only one volume appeared. Mr. Picket was at that time the head of the Manhattan School. He and his son removed to Cincinnati not long before the college was organized, and there carried on a flourishing school for girls. He is said to have been the originator of the college. Mr. Mansfield describes him as "a venerable gray-haired man, who had been for nearly fifty years a practical teacher. He was a thorough scholar, a man of clear head, and filled with zeal for his profession. He presided over the college with great dignity, and I never knew a man of more pure disinterested zeal in the cause of education."—Personal Memories, etc., page 269. Mr. Picket is the author of numerous text-books, a list of which may be found in Barnard's American Journal of Education, volume XV, page 549.

teachers urging the formation of local societies where a sufficient number of teachers could be induced to attend, having in view the raising of the moral and professional character of teachers, the collecting and diffusing of useful information among other societies and adjoining neighborhoods, and increasing the power which springs from associated effort. It was also recommended that the college be notified of the existence of such societies, and that they send delegates to the annual meeting. A resolution was also adopted declaring it the duty of every member of the college to endeavor to establish county societies of education where they did not already exist, and to make a written report at the next meeting.

The discussions of the college were carried on in three ways: Formal addresses by individual speakers, formal reports by committees appointed the previous year, and the floor debates. At this meeting several of the standing committees submitted reports.

One of these reports, made by J. L. Van Doren, Lexington, Ky., related to the course and order of studies to be followed in female primary schools. With the exception of the text-books named, this report was fully approved; to recommend books was held to be contrary to the genius of the institution. This conviction appeared in another instance. Mr. E. D. Mansfield, an influential member of the body, laid before it the proof sheets of two works, one entitled The Political Grammar, of which he was the author, and one The District School, by J. Orville Taylor, of New York, requesting the opinion of the college on their merits; but the convention, having first referred the subject to a committee to report, unanimously voted that it was inexpedient at any time for the convention to constitute itself a tribunal of review.[1] The course of study that was approved has not been preserved.

A committee previously appointed to prepare a manual of instruction for the Mississippi Valley, which should contain the best plans for erecting schoolhouses and organizing schools, the best modes of government, methods of teaching, and branches of study, reported that it had found it inexpedient to prepare such a work, and asked to be discharged. This was accordingly done, but the convention, not satisfied with the outcome, immediately ordered the appointment of a larger committee to prepare such a work.

A committee was appointed to draft an address to the citizens of the Western States in relation to the inefficient modes of instruction that were so prevalent. Furthermore, the questions, "Are there any defects in the common schools?" and, if any, "What are they?" and "How may they be remedied?" were referred to the same committee, to report at the next annual meeting.

Still other action was had. A resolution was adopted soliciting written communications from teachers or others upon improvements in education to be read at the next meeting. There was also adopted, after discussion, a resolution that reminds us of the ambulatory schools of France, the moving schools of Scandinavia, and the traveling schools of New England, viz, that "we recommend the establishment of circuit schools in portions of the Western country where the population is sparse."

The list of officers elected for the succeeding year throws still more light upon the personnel of the college, its geographical distribution and educational status:

Albert Picket, sr., esq., senior principal of Cincinnati Female Institute, president.
Thomas H. Quinan, esq., principal of Cincinnati Adelphi Seminary, corresponding secretary.
David L. Talbott, esq., junior principal of Cincinnati Academy, recording secretary.
Isaac Van Eaton, esq., treasurer.

[1] Mansfield's work was published in 1834. It was one of the early books on what we now call civics, and under a new title continued long in use as a school manual. Taylor's District School was also published in the East, and for a time widely read.

FOR KENTUCKY.

Rev. P. S. Fall, president of the Female Eclectic Institute, Frankfort, vice-president.

Directors: J. L. Van Doren, president of Young Ladies' College, Lexington; S. V. Marshall, professor of languages in Transylvania University, Lexington; O. L. Leonard, esq., Frankfort; Rev. R. T. Davidson, Lexington; L. Munsell, M. D., Danville.

FOR OHIO.

Rev. Elijah Slack, A. M., D. D., Cincinnati, vice-president.

Directors: Rev. W. H. McGuffy, professor of philology and mental science, Miami University, Oxford; M. G. Williams, esq., principal of Dayton manual Labor School; Rev. T. J. Biggs, professor of church history, Lane Seminary; A. Kinmont, principal of a Mathematical and Classical Academy; John L. Talbott, esq., senior principal of Cincinnati Academy.

FOR INDIANA.

Rev. M. A. H. Niles, professor of languages, South Hanover, vice-president.

Directors: John H. Harney, esq.; W. M. McKee Dunn, esq.; Mr. Morrison, Salem; Rev. J. U. Parson, president of Teachers' Seminary, Madison.

FOR ILLINOIS.

Rev. Edward Beecher, president of Illinois College, Jacksonville, vice-president.

Directors: T. M. Post, esq., professor of languages, Illinois College; Rev. J. M. Sturtevant, professor of mathematics, Illinois College.

Still adhering to the committee plan of investigation and discussion, the convention adopted a large programme for the ensuing year. A transcript of this programme will show what subjects were agitating the minds of Western educators in 1834 and also throw some light upon the personnel of the College of Teachers.

(1) To what extent may manual labor be beneficially employed as a means of reducing the expenses of a collegiate education? And should the engaging in such labor extend to all the students, or should it be left optional?

Committee: M. P. Jewett, of Marietta; M. G. Williams, of Dayton; J. M. Sturtevant, of Jacksonville.

(2) On physical education.

Committee: J. Cobb, M. D., John Eberle, M. D., Cincinnati.

(3) Ought anatomy and physiology to constitute a part of education?

Committee: A. Kinmont, A. M., Prof. Joseph Ray, Cincinnati.

(4) What is the best method of teaching English composition?

Committee: D. L. Talbott, Prof. Joseph Ray, Cincinnati.

(5) Elocution, embracing the best method of teaching extemporaneous speaking.

Committee: A. Harvie, Prof. C. Bradford, Cincinnati.

(6) How far is it practicable to introduce the physical sciences into common schools?

Committee: Thomas D. Mitchel, M. D., J. L. Talbott, Cincinnati.

(7) What is the best mode of establishing and forming common schools in the West?

Committee: Samuel Lewis, A. Picket, sr., Elijah Slack, Cincinnati.

(8) What is the best method of employing the principle of emulation (as defined by a resolution heretofore adopted by the college) as a means of instruction in our institutions of learning?

Committee: A. Kinmont, Daniel Drake, M. D., J. L. Talbott, Cincinnati.

(9) To inquire into the expediency of and report on the subject of an improved book of definitions.

Committee: W. Nixon, W. Hopwood, Cincinnati.

Part II contains seventeen discourses and reports on education, as follows:

(1) Opening address. Albert Picket, President.

(2) Discipline. Discourse on the philosophy of family, school, and college discipline. Daniel Drake, M. D., Cincinnati.

(3) The classics. Lecture upon the study of the Greek and Latin languages as a part in the course of a liberal education. Prof. T. M. Post, Jacksonville, Ill.

(4) American education. Oration on the subject that neither the classics nor

the mathematics should form a part of a scheme of general education in our country. Thomas Smith Grimké, Charleston, S. C.

(5) The mathematics. Discourse on the utility of the mathematics. E. D. Mansfield, esq., Cincinnati.

(6) The classical report on the question, "Ought the classics to continue a part of education?" Alexander Kinmont, A. M., Cincinnati.

(7) Physical science. Lecture on the applications of principles to practice in the various departments of physical science. Rev. Elijah Slack, A. M., M. D., Cincinnati.

(8) Government. Lecture on the government of public literary institutions. H. A. M. Niles.

(9) Music. Address on the history and moral influence of music. William Nixon.

(10) Language. Lecture on the best method of teaching languages. William Hopwood, M. D.

(11) Annual report of the local executive committee of the College of Teachers made to the convention of 1834.

(12) Emulation. Report on the question, "Has emulation as a motive in education a favorable or an unfavorable influence?" Thomas H. Quinan.

(13) Emulation. Prof. Thomas J. Mathew's report of the minority.

(14) Emulation. Mr. J. Buchanan's report on the question, "Ought the principle of emulation to be appealed to as a motive in education?"

(15) Calisthenics. J. Livingstone Van Doren's report on the physical education of females.

(16) Common schools. Letter to the president of the college from the trustees and visitors of common schools, Cincinnati. Peyton S. Symmes, President.

(17) Closing address of the executive committee.

Biographical notice of Thomas Smith Grimké. Edward D. Mansfield.

As a rule these addresses were long, much longer than would now be listened to with patience, and several of them are accompanied by explanatory notes. Particular attention will be drawn to a few of them.

The discourse on discipline is one of the long addresses, occupying in its delivery a portion of two sessions. Its author, as well as its character, gives it interest. Daniel Drake was one of the most distinguished citizens of Cincinnati, an eminent physician and man of science, a voluminous writer, and one of the active members of the college.[1] He may be taken, therefore, as an excellent exponent of the best contemporary opinion on the subject that he discussed. When these facts are taken into the account his address becomes as good a base line as one could wish from which to measure the later movement of ideas. Only an outline need be presented.

I. God's universe is a universe of laws; to each law of nature and to each law of society a penalty is attached; the economy of the world is that rewards and punishments are the appointed means of securing obedience. To sustain this last proposition the argument from revealed religion is unfolded. Two and a half pages of texts of Scripture, embracing all the leading texts that were once so freely quoted in discussing this subject, are given.

II. Punishments—what shall they be? The constitution of childhood affords the foundation for physical correction; the Bible bears this out. The punishment

[1] Dr. Daniel Drake, the genius of the college, was born in New Jersey in 1785, and while still a boy was carried west to Kentucky by his father. His opportunities for early education were extremely limited. He was drawn to the study of medicine, which he prosecuted in 1805, at the University of Pennsylvania, and upon the practice of which he entered soon after. It is impossible here to give any adequate account of his extremely varied and active life. He was physician, man of science, author, educator, orator, man of society, and man of affairs, all in one. He was the founder of the Ohio Medical College and one of the active members, as preceding pages show, of the College of Teachers. He died in 1852. Mr. Venable says of him: "So many good works did he undertake, so much did he accomplish, so effectually did he stimulate exertion in others, both friends and enemies, that I think he may be called with propriety the Franklin of Cincinnati. Much of what he did for this Western metropolis reminds us of the philosopher who aided in founding the early institutions of Philadelphia." (*Beginnings of Literary Culture in the Ohio Valley*, Chap. X; see also *Memoirs of Daniel Drake, M. D.*, etc., Cincinnati, 1855, Edward D. Mansfield.)

of the body, even with the rod, is expressly enjoined by heaven as a parental duty. Corporal punishments are of two kinds—active and negative; the rod exemplifies the first, withholding satisfaction from the appetites the second. The familiar argument that corporal punishment leads to self-abasement is refuted from experience, and the explanation added that physical punishment must be attended by an explanation of the causes why it is administered.

III. Physical rewards: These appeal (1) to taste, which encourages love of luxury; (2) smell, which is unattended by danger; (3) hearing, not dangerous, but less potent than smell because habitual with mothers and nurses; (4) feeling, that is, physical exercise, no danger; (5) sight, the noblest of all. These physical rewards are then combined in a description of a school ramble.

IV. Rewards and punishments of the mind: (1) The mother's smile and frown, very effective; (2) appeal to love of ornament, not dangerous; (3) appeal to love of play, commended; (4) appeal to love of property, making lessons of economy possible; (5) appeal to curiosity and wonder; (6) love of knowledge, an extension of curiosity and wonder, and seldom needing to be moderated in a child; (7) appeal to proper pride, or self-esteem, but there is danger of misdirecting pride; (8) appeal to proper ambition, and (9) appeal to love of relative distinction. Popular objections to the employment of these motives are then stated and considered, as that they tend to stimulate some minds to excess; that they generate unkind feelings among classmates, and that they substitute the applause of man for the approbation of God. These objections are not sustained. The resort to emulation is approved in these words: "The principle of emulation, then, is subordinate to the principle of duty to God, and not at variance with it, except when impossibly directed or excessively exercised. Under this view I regard the workings of emulation as not necessarily immoral, and in reference to its influence in schools the inquiry should be, how to obtain its valuable exciting influences without its disadvantages." (10) The innate sentiment of benevolence may be appealed to as a means of discipline; but (10) the highest principle of action is veneration for God. Such veneration is not carefully cherished in the United States, and particularly in the Mississippi Valley; the reasons lie in free institutions, etc.

At the close comes a summary of points essential to the success of any system of rewards and punishments. (1) Children, like grown persons, act from motives; when they transgress they have an object in view; they should therefore be carefully and patiently instructed in their duties. (2) There is great variety of bodily and mental temperament, which makes it necessary to study the character of each child, and to discover the appropriate means of rewarding and punishing him. (3) Children have periods of undefinable indisposition, and consequent irritability; those who govern them should look into this matter, and consider the facts in meting out punishments. (4) The excitation of fear is a legitimate means of correction, but children should not be frightened by goblins or be threatened with supernatural appearances. (5) Both rewards and punishments should be proportionate to offenses. (6) It is sometimes said that rewards and punishments do not change or purify our motives; the truth is, if we habitually make our actions right our motives will gradually improve.

Some of the topics covered by this address were also considered by the authors of the three reports on emulation, and the whole subject was also thoroughly and warmly discussed on the floor, some of the most prominent members of the college taking part in the discussion. Various resolutions declaratory of the sense of the college on emulation were offered, and finally the following, proposed by Mr. Kinmont, was unanimously adopted. It may well be doubted whether if one of our educational societies or associations wished to express itself on this subject it would do better than to adopt this resolution.

Resolved, That emulation, so far as it implies a desire of excelling others for the purposes of self-gratification is inimical to the principles of pure morality,

and ought not to be fostered in schools; but that so far as it involves a wish to excel in knowledge and virtue on their own account, to gain the esteem of the wise and good, and to improve to the utmost those faculties which are bestowed on each individual by his Creator, is praiseworthy and meritorious; but that this convention feel themselves inadequate to devise any universal system of rules, by which the original element, endowment, or affection of human nature might be so directed as to secure the good and avoid the evil: but that they believe it will be found less difficult to fix it in practice than to define it in theory and that therefore it should be left in its own natural undefined comprehensiveness, to be used according to the good sense and discretion of the teacher.

The interest of the meeting culminated in Mr. Grimké's oration on American Education. This distinguished Carolinian had won a wide reputation as a lawyer, scholar, writer, orator, and philanthropist; he was an ardent advocate of education and a well-known opponent of classical studies; very naturally, therefore, the local committee of the college, when it learned that he was to visit Miami University, at Oxford, Ohio, for the purpose of delivering a literary address, took steps to secure an address from him at Cincinnati on one of his favorite themes.[1] Beginning with Lord Brougham's famous saying, "The schoolmaster is abroad," Mr. Grimké plunged at once into the heart of his subject. His main thought was that the schoolmaster who is abroad in our land must be the Christian, the American schoolmaster; he must give a truly Christian and American education to make the people what they should be, peculiarly a Christian and American people. He uttered the settled conviction that the great body of the materials employed in education in our country are altogether unsuited to furnish what he regarded as the only legitimate object of a system of instruction for the people.

First: Of things as they are.

(1) They are not decidedly religious; if the Bible be used as a school reading book or a few verses be committed to memory, still it is not made the subject of daily instruction. (2) The existing plan is in no proper sense of the word American. The whole amount of attention paid to subjects purely American is measured by Morse's or Worcester's Geography, a 12mo history of the United States, and Pitkin's History of the Union, Rawle on the Constitution, The Federalist, or Story on the Constitution. Further than this, American biography, eloquence, history, political philosophy, and constitutional law are unknown. (3) The existing plan is so un-Christian and so un-American that it would suit equally well any other form of government, any other state of society, any other religion, and any other national literature. (4) The existing scheme does not fill the mind with useful and entertaining knowledge. (*a*) The mathematics: as to valuable knowledge, except the first and simplest parts of arithmetic, the whole body of the pure mathematics is absolutely useless to ninety-nine out of every one hundred who study it. (*b*) The classics: the classics have the advantage of the mathematics; but not more than one person in fifty who studies them keeps up his acquaintance with them. How seldom are either the classics or mathematics the subject of conversation. What is there in the classics that is really instructive and interesting? The history is too scrappy; the eloquence, in con-

[1] Thomas Smith Grimké was born in Charleston, S. C., in 1786. He was of distinguished family, Sarah Moore Grimké and Angelina Grimké (Mrs. Theodore D. Weld), who were prominent in the early antislavery movement, being his sisters. He graduated at Yale College in 1807, studied law, and won distinction both at the bar and in politics. But it was as philanthropist and reformer that he was best known. He held radical views on the subject of education, as the above account of him clearly shows. He published a volume of addresses on Science, Education, and Literature, New Haven, 1831. He was a man of the highest personal character. His Cincinnati oration was his last one. He left that city for Columbus after its delivery, but died of cholera before he reached it, October 11, 1834. Mr. Mansfield contributed a biographical sketch of him to the Transactions of 1834. See also Venable, Beginnings of Literary Culture in the Ohio Valley; Mansfield, Personal Memories; and Writings of Hugh Swinton Legaré, Charleston, 1845, Vol. II.

tent and spirit is alien to Anglo-Saxon institutions; the poetry finds themes in treachery and license; the heroes of Homer and Virgil are inferior to those of Walter Scott; the morality is of no more value to those who read the New Testament than Ptolemy is to modern astronomers. (5) The present system has no direct and obvious tendency to create and preserve the habit of intellectual improvement and the love of reading. (6) It does not furnish that discipline of mind which the country needs: First, mathematical reasoning has nothing to do with the materials and modes of moral reasoning; secondly, the classics furnish moral materials that are alien to our age, social state, and government. (7) The study of the English language is sacrificed to the study of Greek and Latin. (8) English composition is very imperfectly taught, extemporaneous speaking neglected, the art of conversation not taught at all. (9) English grammar is taught only by rule, without regard to practice.

Second: Corrections of objectionable features.

(1) Christianity should be made an element of all general education; the Bible should become a text-book from the infant school to the university, not only because it is the fountain of duty and usefulness, but because it contains, (*a*) history the most authentic and valuable; (*b*) biography the most instructive and interesting; (*c*) philosophy the most profound, theological, and moral; (*d*) wisdom the most enlarged and practical; (*e*) eloquence and poetry the most sublime, pathetic, and beautiful. Other theological writings that may be recommended, are Dymond's Essays, Dwight's Sermons, and sermons from English and American divines. (2) The scheme should be decidedly American, embracing American history, biography, and geography. (3) It should be made suitable to our religion, government, and state of society, which may be attained by carrying out the two previous recommendations. (4) It should provide, in every stage of instruction, an abundant supply of useful and entertaining knowledge. The following substitutes for the classics and mathematics are proposed: Natural philosophy, natural history, geography, including travels, American history, American geography, English history and geography (not going back of Henry VIII and including Scotland and Ireland), modern European history, especially the history of France, eloquence. Christian, civil, literary, constitutional history, *e. g.*, Stewart's View of Society in Europe, Adam Smith, Ricardo, Pitkin's Civil and Political History of the United States, and poetry. To New Englanders, whether at home or abroad, the travels of Dr. Dwight are declared to be more full of the instructive and entertaining than the Livy, Cæsar, and Tacitus they study at home; while Mrs. Hemans has written a greater number of charming little pieces than are to be found in Horace and Anacreon. (5) It should look to the creation of love for reading; the substitution of English biography, history, poetry, and fiction for the classics will accomplish this end. (6) Discipline of mind; the studies proposed furnish moral materials and modes of moral reasoning. (7) English grammar or technical English grammar should be deferred till the close of the course. (8) Some practice should be secured in composition, extemporaneous speaking, and conversation; the classroom method should be conversational. (9) Pupils should be required to speak correct English. The conclusion is reached that Christian and American subjects should have assigned them nine-tenths of the time that is now consumed by the classics and mathematics.

Mr. Grimké, with all the rest, was a spelling reformer. His oration is printed in the "Transactions" in accordance with his ideas, which are briefly stated in a prefatory memorandum.

But Mr. Grimké's views were not the only ones that were presented on his leading topics. Before he had delivered his oration, Professor Post had warmly advocated the teaching of the classics, and afterwards Mr. Kinmont presented the report which he had previously prepared in relation to the same subject. Mr.

Kinmont[1] took occasion, when presenting his report, to offer some extemporaneous remarks in immediate reply to Mr. Grimké. He said Mr. G. had not analyzed the terms of the phrase "Christian and American education," and that without such an analysis they were well fitted to delude. He declared that if there was anything valuable, intrinsically so, in the Grecian and Roman intellect, it is virtually and substantially Christian; and that an American education must be an education suited to Anglo-Saxons planted in America, and such an education calls for everything fair, good, and useful, no matter from what country or from what age it comes. A proper American education could not be narrow or exclusive. Mr. Grimké had said that the best way to study history is to go backward rather than to come forward. The history of every people is to a far greater extent independent than dependent on that of preceding nations. Mr. Kinmont showed real grasp of the principle of historical continuity when he said the Anglo-Saxon race did not originate in America, nor did it come hither to seek the seeds of liberty and religion and good government, but to plant them.

A committee of four was appointed to report at the next annual meeting on the course of study that Mr. Grimké proposed, and a resolution was adopted calling upon his friends to organize an institution in accordance with his ideas for the purpose of subjecting them to an experimental test.

Mr. Grimké's views met with opposition from another quarter. Mr. E. D. Mansfield, the journalist and publicist of after years, made an ardent and interesting defense of mathematical studies, though not as an offset to Mr. Grimké's views. He maintained that mathematics is the most powerful discipline of the mind; that in the business of life it is the most useful attainment; that in this western country there are peculiar reasons for its study; and that, therefore, there could be no better means of intellectual education. This address furnished the familiar lesson on the mathematics found in one of the well-known school readers of a generation ago, containing the passage:

> Yes; he who would shun mathematics must fly the bounds of "flaming space," and in the realms of chaos, that
>
> dark,
> Illimitable ocean,
>
> where Milton's Satan wandered from the wrath of heaven, he may possibly find some spot visited by no figure of geometry, and no harmony of proportion. But nature, this beautiful creation of God, has no resting place for him. All its construction is mathematical, all its uses reasonable, all its ends harmonious. It has no elements mixed without regulated law; no broken chord to make a false note in the music of the spheres.[2]

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[1] Alexander Kinmont was born and educated in Scotland. He made his home in Cincinnati in 1827, where he conducted a select academy for boys. He was an excellent classical scholar and teacher, and a stout advocate of classical education. Venable says of him, "He was adored by his pupils. He believed in great freedom in school, allowing the boys to study aloud. It was his theory that a student ought to be able to get a lesson in the midst of the confusion of a steamboat wharf. If two of his boys got into a quarrel, he ordered them to leave the room and settle their dispute by a fair fight." The same author thinks he was "perhaps the most forcible and aggressive man in the college." He died in 1838. (Beginnings of Literary Culture in the Ohio Valley, p. 423.)

[2] Edward Deering Mansfield was born at New Haven, Conn., in 1801, and came west with his father, who was surveyor-general of the Northwest Territory, in 1803. He graduated from Princeton in 1822, and finally made his home in Cincinnati in 1832. He was by profession a lawyer, but he made his reputation as a publicist and professional writer. He was an editor and the author of numerous books and pamphlets. He was one of the most prominent citizens of Cincinnati, and one of the active men in the College of Teachers, contributing abundantly to its discussions. His Political Grammar, afterwards Political Manual, was one of the first books for schools on the subject of government. His American Education, its Principles and Elements, is still in the market. Mention may also be made of his Personal Memories, Social, Political, and Literary, Cincinnati, 1879, and Memoirs of the Life and Services of Daniel Drake, M. D., etc., Cincinnati, 1855. Mr. Mansfield claimed to have originated the name "people's colleges," given to the public schools.

Besides the addresses and reports published in the Transactions, Rev. W. H. McGuffey,[1] then of Miami University, made an address that was not prepared for publication, and so did not appear, on "The influence of the regular study of the Bible on intellectual and moral improvement." Following this address the subject of Bible teaching in the schools was discussed, the discussion closing with the unanimous resolution: "That the Bible be recommended as a regular textbook in every institution of education in the West."

The convention was marked by one feature that now would be thought novel enough. The president of the trustees and visitors of common schools of Cincinnati submitted to the college a list of eighteen questions asking, in the name of the board, the opinion of the college, or its committees, upon such questions as they had been led to investigate. They were questions that were occupying the minds of the board, which had come into being only five years before, and were causing its members much perplexity of mind. A similar appeal by the present Cincinnati Board of Education, or any similar one, to the National Council of Education, would today be thought a strange proceeding. The mere fact that it was made suggests the character of the times; in respect to popular education school boards and others interested in the subject saw men as trees walking, and they were seeking to purge their sight. In particular the board invited the judgment of members of the college upon the model schoolhouse that had been built on Race street. The letter was referred to a special committee, from which we shall hear at the next meeting.

The fifth annual convention of the college, so the introduction to the Transactions for the year asserts, was one of unusual interest.[2] The names of 147 members are found in the printed list, and officers were elected for eight States, viz: Kentucky, Ohio, Indiana, Illinois, Missouri, Tennessee, Mississippi, and Louisiana. At the second session the local executive committee submitted its annual report, which contains many items of interest. The history of the publication of the volume of Transactions for the previous year suggests the financial difficulties under which the college labored. Copies of the volume had been sent to the twenty-four literary colleges of the West, besides seminaries. A circular had been sent to these colleges and seminaries, with a view to secure their cooperation in the college. The rapid growth of the Mississippi Valley in population, 150,000 or 200,000 a year, calls attention to its educational conditions, and imposes heavy burdens upon teachers and friends of education. The influence of the college has been extending, like leaven, since its organization in 1831. Important educational associations have been formed in Kentucky and Ohio in the course of the year, which have held interesting meetings. The influence of the general convention and of local conventions has caused schools, academies, and colleges to arise within two or three years in the forests, and multiply in a manner unprecedented.

The committee urged that associations for the advancement of education be formed in New England, in the Middle States, in the South, and in the Great Valley; and, furthermore, when all these have met and deliberated and published

[1] William H. McGuffey was born in Pennsylvania in 1800; lived in childhood in Trumbull County, Ohio; was educated at Washington College, Pennsylvania; in 1826 became professor of ancient languages at Miami University; in 1829 was licensed a minister in the Presbyterian Church; in 1832 became professor of philosophy in Miami University; in 1836 became president of Cincinnati College; in 1839 president of Ohio University; in 1843 was a professor in Woodward College, and in 1845 went to the University of Virginia as professor of moral philosophy. He died in Virginia in 1873. He was one of the most valuable members of the College of Teachers, but is best known as the compiler of the series of Eclectic School Readers, which, as Mr. Venable says, have favorably influenced millions of children in morals and intellect by their happy literary selections. (Beginnings of Literary Culture in the Ohio Valley, pp. 178–79.)

[2] Transactions of the fifth annual meeting of the Western Literary Institute and College of Professional Teachers, held in Cincinnati, October, 1835. Cincinnati. Published by the executive committee. 1836.

to the world their labors, "let a national institute of teachers be formed by delegations from these four great branches; let sectional jealousies—too contemptible in so hallowed a cause—be laid aside; let untrammeled and mature deliberations ripen into sage decision, and in a period not very remote a revolution will be effected in almost every department of instruction at which the most experienced teachers will be astonished. The march of science will be rapid, and a sound and substantial moral education will be born and bless society.

Some of the more significant resolutions that were adopted may well be quoted: That J. L. Van Doren be a committee to report on the propriety of employing a general superintendent for the city district schools; that a committee of three be appointed to adopt a petition to each legislative body in the Western and Southwestern States early in the coming winter, praying them to pass legislative enactments in behalf of universal education in their respective territories, and report the same to this college before its final adjournment; that this committee be instructed to petition for the universal establishment and support of common schools and seminaries for the education of teachers; that this college request the council of Cincinnati, or any other body, to furnish the College of Professional Teachers with a central and convenient room for the accommodation of a library of education, to be established by the college for the promotion of the cause of education in the West; that a committee of five be appointed to devise and report forthwith as to the method of reaching and animating the community on the subject of education; that, in the opinion of the college, it would greatly advance the interests of education in the West for teachers and the governors of schools and the friends of education generally to hold periodical conventions at the seats of government in the different States during the session of the legislature. Steps were taken to establish at once the educational library. Members of the college, booksellers, publishers, and the friends of education generally were respectfully entreated to contribute to its promotion. Still it does not appear that a library was actually established.

The committee on the expediency of petitioning the legislatures in the interest of universal education reported a plan embracing these features: The appointment of a committee of three in each State to serve as an organ of operations; the preparation of a form of petition to the legislature to be used by these State committees; the preparation of an address of fifteen or twenty pages in length, to be printed in pamphlet, containing outlines of the best and most improved systems of public education, with suggestions of possible improvements. The committee also submitted a form of petition. Such committees were accordingly appointed for the eight States that were represented. The committee to devise a plan for reaching and animating the community on the subject of education was accorded a full year in which to make its report. Vice-presidents and of directors were elected for the eight States above mentioned. When finally presented and adopted the list of subjects to be investigated in the course of the year and reported upon embraced twenty-four different subjects.

The accounts of the State convention of teachers held in Lexington, Ky., the previous November, and of the educational convention held in Columbus, Ohio, in the January following, contained in the appendix, give us valuable information of what the friends of education were doing and proposing in those States. The Kentucky teachers were careful to limit the phrase "universal education," found in one of the resolutions sent out from Cincinnati, by the phrase "of the white population." The reporter of the Columbus meeting states that the population of Ohio, nearly 1,500,000 in number, contains but few enlightened and efficient teachers. "A willingness pervades all ranks to aid and support a system of thorough and scientific instruction; but a great apathy prevails in action for

want of knowledge as to how and by what means such a system can be brought into existence."

Part II is rendered the more valuable by the abstracts of speeches made in the course of discussion on many of the addresses and reports. Omitting the names of the authors of such speeches, the following is the programme:

(1) Opening address. The president, Albert Picket, sr.
(2) Lecture on domestic education. Rev. T. J. Biggs.
(3) Report on the education of immigrants. Rev. C. E. Stowe, Lane Seminary, Cincinnati.
(4) Discourse on the importance of a more practical education. Rev. J. W. Scott, A. M., Miami University.
(5) Report on anatomy and physiology as a branch of study in schools. Alexander Kinmont, A. M., Cincinnati.
(6) Lecture on the relative duties of teachers and parents. Rev. W. H. McGuffey, A. M., Miami University.
(7) Report on the best method of establishing and forming common schools in the West. Samuel Lewis, esq., Cincinnati.
(8) Report on the system of education proposed by the late T. S. Grimké. Nathaniel Holley, sr., A. M.
(9) Report of the committee on a manual of instruction.
(10) Report of a committee on the expediency of an improved book of definitions. William Hopwood, A. M.
(11) Report on the best method of teaching English. D. L. Talbott.
(12) Report on the Carstairian system of penmanship. D. W. Woolley.
(13) Abstract of the report of the committee on the questions submitted by the trustees of common schools, Cincinnati.
(14) Remarks in reply to Mr. McGuffey on the establishment of auxiliary societies.
Appendix.—Proceedings of the educational convention held in Lexington, Ky., November, 1835; Proceedings of the educational convention held in Columbus, Ohio, January, 1836.

Four or five of these addresses and papers will be selected for comment. First, however, it should be remarked that this volume as a whole shows that the convention is drawing nearer to the overshadowing question of the times, namely, that of popular common-school education. The addresses are less academical and more practical and earnest than the year before. The college seems pervaded by the conviction that a vast work needs to be done, and done speedily, or that the most serious evils may be expected to follow in every sphere of life.

Mention will first be made of Prof. C. E. Stowe's Address on the Education of Emigrants, made at the request of the Emigrant's Friends Society of Cincinnati. He begins with some statistics showing the number and the nationality of the foreign population of the city where the college sat and of the immediate vicinity, their religion, means of instruction, etc. He reports that the Germans comprise a vast majority of such population, 10,000 in number, 2,000 or 3,000 Protestants, 8,000 or 7,000 Catholics. There are 1,200 or 1,500 children of school age, of whom only 400 are in the schools. He describes the organization and work of the society in whose name he speaks, and gives an interesting account of the efforts in behalf of the foreign population made by the students of Lane Theological Seminary. He says the children of the Germans are commonly apt at learning, and much more attentive than American children. He concludes that there are some 900 emigrant children destitute of means of education, and that the number is constantly increasing. He then makes a stirring argument in favor of vigorous efforts to reach this population. Their intellectual and moral training is essential to the common safety, to the generation of a true national spirit. The only effective agency that can be employed to transform these people into good American citizens is the school. A few sentences will show the drift of his appeal.

The children of immigrants must be taught English and prepared for the common English schools; and the safety of the Republic requires that destitute children should be sought out and made to attend the public schools. The public schools

should be our best schools and possess a character sufficiently elevated to secure the patronage of the influential and wealthy, that all the children of our Republic may be educated together. * * * Private schools for special purposes would not be discontinued, but their encouragement and patronage increased; and the descendants of different nations need not forget, but still know and love, the language and literature of their fatherland. So many languages as a man learns, so many times is he a man, said the sagacious Charles V of Germany; a child can learn two languages as quick and as easily as one, etc. * * * Education should be universal. * * * The limiting of elementary education to suit the peculiar circumstances of a particular country can serve only to confirm prejudices, to confine and narrow the mind, and prevent its onward progress. Chinese are carefully educated; but they have stood aloof from all improvement that was not of native growth, and now are very much as they were two thousand years ago. Modern European education has, on the other hand, been universal rather than national. * * * The Bible without dogmatic comment, just as it is in its own simplicity and majesty, should be the text-book of religion and morals in our institutions of education, from the primary school to the university and professional seminary. * * * Cincinnati possesses peculiar advantages for the commencement of such a work as this, and the designs of Providence are shown in the fact that the work has been in reality begun.

Professor Stowe's views were heartily seconded by several speakers who followed him.

Samuel Lewis's report on the best method of establishing and of forming common schools in the West looked to providing the means for such work as Professor Stowe described. He discussed the system that empowered school officers to appoint teachers in the schools and to pay for the tuition of the poor, leaving all those who were able to do so to pay for the tuition of their children as taxed in a rate bill. This plan, which was much in vogue early in the century, and sometimes produced what were called "charity" or "pauper" schools, Mr. Lewis condemned. He then considered the plan which was followed to some extent in Ohio, of levying taxes amounting to a small sum per pupil to carry on a public school as long as the money lasted, and pointed out the obvious objections, as that the school year was too short and the school overcrowded with pupils. He showed, also, the total inadequacy of the school revenues that came, or could be expected to come from the school lands voted to the Western States by Congress. In Cincinnati, he remarks, children aged from 4 years to 16 years are eligible to the public schools; such children are 7,000 in number; the school tax collected is $10,146, or $1.45 per scholar. Though this tax be annually increased, the increase will fall short of the growth of population. A competent teacher must have at least $400 a year, and can not do justice to more than 35 scholars; at which rate the school fund would maintain the schools for all the scholars less than six weeks in the year. He strengthens his argument to show that $1.45 is wholly inadequate to the purpose by citing the cost of tuition in private schools. He contends that the people were not hostile to common schools, but were ready to pay for them, and that they wished to have better schools. Public opinion was ahead of the schools. He laid down the following as indispensable requisites to establishing common schools in the West on the best plan: (1) The funds raised for the support of common schools must be adequate; (2) the very best teachers must be employed, and (3) the important duties of school visitors and examiners must be properly performed. This report and the speeches that followed abound in statistics and other facts in relation to the deplorable condition of the common schools, especially in the State of Ohio, which make them valuable contributions to the materials of history.

The committee of four appointed the previous year to consider and report on Mr. Grimké's proposed course of study left that duty to one of their number, Mr. Nathaniel Holley. The report was, therefore, simply an expression of individual opinion. Mr. Holley approved in the strongest terms of some features of Mr. Grimké's plan, as the demand for a thorough knowledge of our own country, its dis-

covery and settlement, its geography, customs, manners, and government, its first settlers and eminent men, its theologians, statesmen, and scholars; full acquaintance with the best English writers, and an accurate and extensive knowledge of the English language, together with its ready use in composition and conversation, and especially the strong emphasis placed on morality, piety, and a religious life, founded on the practice of Christian virtue and a close adherence to the doctrines of the Sacred Scripture. Mr. Holley then criticised Mr. Grimké's arguments against the study of the classics and mathematics, and presented arguments of his own in favor of those studies. Such was the state of society generally, he said, and such the state of families and schools, that children and young persons, with the exception of here and there one, did not and would not pay that attention to study that was requisite in order to acquire even a tolerable education. Teachers were so overwhelmed with scholars that they could not pay proper attention to them, and the result was that idle habits had formed in schools. When adequate provision for universal education shall have been made, there will be time for the classics and mathematics, as well as for Mr. Grimké's American education.

The manual of instruction comprised little more than a code of rules relating to school management and discipline, and a general course of study which was recommended as the lowest that should ultimately be adopted in primary schools. This course of study embraced reading, writing, and arithmetic, geography, grammar, composition, and the history and Constitution of the United States, geometry, surveying, natural history, including a general knowledge of the human organization, natural philosophy, moral philosophy, and the Bible.

Only an abstract of the report of the committee submitted in answer to the questions by the trustees of the common schools of Cincinnati is published. This abstract shows the report to have been a careful, painstaking document, taking up and answering one by one the questions that had been propounded. Both questions and answers are of the most practical character, revealing the state of the common educational mind at that period. The committee does not believe that the rod, which is the ordinance and appointment of Divine wisdom, should be laid aside; reading, writing, arithmetic, geography, the history of the United States and its Constitution, English grammar, composition, bookkeeping, with instruction in plain sewing for the females whose parents may desire it, are the appropriate and essential studies of the public schools; but on the question of the best school books the committee declines to commit itself. Furthermore, the committee holds that the sexes ought to be separated whenever circumstances will admit; that it would be advantageous to establish infant schools for the instruction of children under 6 years of age, and that a high school should be established as soon as circumstances might warrant, containing a department especially adapted to qualifying young men and women for teaching. In answer to a question relative to the monitorial system, the committee answers in a guarded manner approving that system. The committee recommends the board to establish immediately a public library for the common schools, however small the beginning may be, and warmly recommends monthly meetings in which the teachers and the school trustees shall participate. These are a few of the topics considered in this report.

The attendants upon the convention of 1836 were not only much more numerous than upon any previous convention, but they represented a much wider territory.[1] The names of 222 members stand in the printed list, and vice-presidents and directors were elected for fifteen States, namely: Kentucky, Ohio, Indiana,

[1] Transactions of the Sixth Annual Meeting of the Western Literary Institute and College of Professional Teachers, held in Cincinnati, October, 1836. Edited by D. L. Talbott, Cincinnati; published by the executive committee.

Illinois, Missouri, Michigan, Pennsylvania, Virginia, Tennessee, Arkansas, Mississippi, Louisiana, Alabama, Georgia, and South Carolina. It is impossible to say with certainty that the officers elected for these States were all present, or, indeed, that any of them were present in some cases; but it is evident that the efforts which the college had been making to increase its constituency were bearing fruit. Some distinguished men were present for the first time. The editor of the Transactions, in his introduction, says that the college lays claim to no monopoly of wisdom or experience; it pretends to no more than this, that it institutes a "grand annual mart where the dealers and traffickers in intellectual goods may assemble for the interchange of their wares, and to receive and give encouragement." He further pronounces the education of human beings, even the meanest and most ignorant, a most worthy and noble employment; but this is yet only a sentiment, very easily written and very easily spoken; "it will require several centuries even in the United States of America—even in the West—to make it appreciated and honored."

The executive committee, in its annual report, not only gave an account of the efforts made to extend the influence of the college and to create interest in education, but it raised the question of the most eligible and desirable and practicable method of printing and publishing any educational documents that it may be deemed desirable to lay before the public. The committee says also that it had availed itself of the opportunity afforded by Professor Stowe's mission to the continent of Europe to open correspondence with several eminent literary gentlemen, such as Professor Pillans, of Scotland; M. Victor Cousin, of France, and Dr. Bowring, of England. From Bowring a response had been received calculated to confirm the committee in their previous persuasion that their cause was the cause of human nature.

At the first session a portion of time was spent in hearing verbal reports from delegates as to the state of education within their respective limits, and at the second session the communication from Dr. Bowring was read. The financial affairs of the college still gave trouble.

For some time the proposition to publish a periodical under the auspices of the college had been under advisement. A report from the executive committee dealing with this subject was adopted, and the proposition to undertake such a periodical approved, with the proviso that it should not in any way interfere with the annual publication of the Transactions in a separate volume. The report favored a periodical devoted largely, but not exclusively, to education. "Education in the abstract is, with many persons, a dry and uninteresting subject; and as the circulation of the work directed to that subject would be limited, although it might receive a patronage sufficient to carry it on, we would fail to circulate it among and to hold up prominently before the great body of the people this important subject, unless it were made somewhat miscellaneous in its character. For this reason, then, and in order to interest the community on this subject, we shall endeavor to extend its circulation over the widest field." The plan embraced the following features: (1) A periodical under such name and title as might be adopted; (2) an editor appointed from among the members of the institution whose appointment shall be permanent; (3) an editorial committee of conference, to consist of five members of the college, resident in Cincinnati, of whom the editor ex officio shall form one; (4) the editor to select annually his associates in the editorial committee, with the consent of the executive committee. The report was no sooner adopted than John W. Picket, son of President Albert Picket, was unanimously chosen editor, and the volume contains a "notice" from his pen defining more carefully what was proposed.

The following resolutions were adopted: "That it be made the duty of every member of the Western Literary Institute to promote the calling of educational

conventions in the several districts for the formation of associations of teachers, and of the friends of education." "That it is expedient and proper that anatomy and physiology should to a certain extent be made a branch of a general elementary education in our high schools, colleges, and universities. That to afford time in such of the latter as have a fixed term and course of study some of the branches of literature and science now taught should if necessary be abridged." "That this college believes the formation of library associations and the establishment of a library in every township in the Western States will greatly promote the cause of learning and the moral habits of the young." "That the executive committee be directed to offer a premium of $100, or a gold medal of that value, as the author may prefer, to the writer of the best essay illustrative of the maxim that knowledge is wealth, competition being open to all friends of education in any part of the United States." "That it be recommended to the directory in each State to call the attention of their legislatures the present winter to the propriety of appropriating a portion of their share of the surplus revenue [that is, the surplus revenue deposited with the States by the General Government] to literary institutions, especially to the carrying out of common schools and female academies, so as to educate in morals and science the whole population in the South and West." A resolution was also adopted thanking Mrs. Louisa H. Sigourney for contributing to the interest of the convention her essay on female patriotism, which had been listened to with great satisfaction.

The subjects for reports for the ensuing year were 31 in number. Some of these subjects were very comprehensive, as this one: On the causes which conspired in the revival of literature, A. Campbell and R. Richardson; or this one: On a philosophical classification of all science, President Philip Lindsley and P. S. Fall. Practical topics, however, predominated. For example, a very strong committee, consisting of Alexander Campbell, Virginia; Samuel Lewis, Cincinnati; E. N. Elliott, Bloomington, Ind.; J. H. Harvey, South Hanover, Ind.; C. E. Stowe, Cincinnati; E. D. Mansfield, Cincinnati, and G. Weller, Nashville, was raised to consider this very pressing question: On the practicability and importance of creating departments in our State governments, having the subject of public instruction under their immediate supervision.

The contents of Part II show nearly the full range of the addresses and reports; a few were not published, as the lecture by Mr. John D. Craig on the prevalent inefficient and superficial modes of instruction, and the lecture of Thomas Sim, jr., on the claims of phrenology to the attention of teachers. This is the table:

(1) Opening address. Albert Picket, sr.
(2) Address on the proposition that a system of universal education is not only desirable but practicable. Rev. J. L. Wilson, D. D.
(3) Lecture on the philosophy of the human mind. Rt. Rev. Bishop Purcell.
(4) Abstract of a lecture on the difficulties in the management of colleges and the means by which they can be successfully met. Rev. R. H. Bishop.
(5) Lecture on the importance of uniting the moral with the intellectual culture of the mind. Rev. Alexander Campbell.
(6) Lecture on the qualifications of teachers. E. D. Mansfield, A. M.
(7) Lecture on the necessity and importance of education. President S. H. Montgomery.
(8) Lecture on popular education. John P. Harrison, M. D.
(9) Essay on female patriotism. Mrs. L. H. Sigourney.
(10) Annual report of the executive committee.
(11) Report on the causes of the fluctuation of schools; the evils and their remedies. Rev. Samuel Lewis.
(12) Report on the question, What is the best method of prosecuting the study of the Bible in common schools? Rev. P. B. Aydelott, M. D.
(13) Report on the question. Ought agriculture to be made a branch of common-school education? Rev. E. Slack. A. M., M. D.
(14) Report on the question, Ought manual labor to be introduced as a means of reducing the expenses of a collegiate education, and should the engaging in such labor extend to all the students, or should it be optional? M. G. Williams.

(15) Report on the question, To what extent can the reading of fictitious compositions be rendered beneficial to students? A. Kinmont, A. M.
(16) Counter report on the above subject. Rev. E. Slack, A. M., M. D.
(17) Report on the means of animating the community on the subject of education. N. Holly, A. M.
(18) Report on the same subject. O. L. Leonard.
(19) Report on the utility of cabinets of natural science as a means of education. Joseph Ray, M. D.
(20) Report on the best method of introducing and prosecuting the subject of anatomy and physiology in the schools. Daniel Drake, M. D.
(21) Report on the most efficient modes of conducting examinations in common schools, high schools, and academies. Rev. W. H. McGuffey, A. M.
(22) Essay on the study of human life. President S. H. Montgomery.
(23) Closing address. A. Campbell.
Appendix. Minutes of the executive committee, etc.

It will be seen that an unusual number of ministers of religion appear on the programme. The addresses, lectures, and reports are not accompanied by reports of the general discussions. Space can not be taken to comment upon these papers, one by one, but attention may be drawn to a few of them.

Rt. Rev. Bishop Purcell, after reviewing the leading systems of philosophy that had appeared in the world, insisted upon the inadequacy of philosophy as a guide to life. She must end by acknowledging, with the sage of antiquity, when arrived at a certain prescribed limit, that she knows nothing beyond it—in a word, that she is the handmaid of religion. Mr. Slack assigned agriculture a high rank as an art, and recommended that State legislatures found polytechnic schools, which should make provision for ample training in agriculture. Mr. Williams reported somewhat adversely to manual labor as a pecuniary resource for college students, maintaining that a student's earnings can not defray a very great part of his expenses without interfering with his studies. He favored uniting manual labor with study in the colleges for the promotion of health and mental vigor. Mr. Kinmont's report ran strongly against the general reading of fiction, particularly novels, but he was gracious enough to make a few exceptions. Mr. Slack s counter report went still further. He seemed at one moment to make an exception from his sweeping condemnation of Sir Walter Scott, but, correcting himself, said: "It is believed by some that he has done infinite mischief to the cause of education and morals by perpetuating the existence of novels and romances, which before his attempts were verging to destruction." The report on universal education recommended, naively enough, conversation, extempore speeches, occasional remarks, addresses, lectures, and articles in the public papers, as means of creating interest in the subject; it urged also the organization of extensive systems of committees in the different States.

Much the longest discourse of the convention, and perhaps the ablest one, was delivered by Rev. Alexander Campbell, on the importance of uniting the moral with the intellectual culture of the mind. He held that—

> The excellence of education consisted in teaching and training man to think, to feel, and to act in perfect harmony with his own constitution, and with the constitution of nature and society around him; not merely to think, not merely to feel, not merely to act, but to think, to feel, and to act rationally, morally, and religiously, all in harmony with the whole universe, and with his relations to each and every part thereof.

Mr. Campbell seems at this time to have accepted the new science of phrenology as furnishing a solid basis for a purely inductive system of mental philosophy and of literary and moral education. The accomplished teacher's creed, as written out by him, is strongly marked by phrenological phraseology. This creed contains but seven articles, as follows:

(1) The human soul incarnate operates only through organs, and through organs only can be operated upon.
(2) An organ is a natural instrument, such as the brain, the eyes, the ear, the

tongue, the hand. The human soul thinks and feels by the brain, sees by the eyes, etc.

(3) A faculty, contradistinguished from its organs, is the power of the organs. The eye is an organ, but seeing is its faculty.

(4) Organs and faculties are simple and compound. The eye and the ear are simple organs; the brain and the hand are compound organs.

(5) Operations are to be distinguished from the organs and the faculties. Organ is the instrument, faculty the power of that instrument, and operation the act of the faculty or of the organ.

(6) The strength of an organ is its size and firmness. It is a law of the animal economy that exercise directed by reason enlarges and confirms every organ. Education, if rational, will therefore seek to improve the mind by improving the organ.

(7) The exercise of any one organ only improves itself. We can not improve the eye by improving the ear, or the faculty of tasting by the faculty of smelling. No person would seek to improve the memory by improving the imagination; neither will a wise man seek to improve the moral powers by exercising only the intellect.

Mr. Campbell held no high opinion of the moral value of education as commonly conducted in Europe and America, but assigned the greatest value to moral instruction and exercise, and threw all possible stress upon religion. Mr. Campbell was a thoroughgoing disciple of John Locke, if not of George Combe, and his sensationalism was perhaps never made more prominent than in this address.

President Picket, in his opening address at the convention of 1837, says that every year since its organization has seen the College of Teachers grow in numerical and intellectual strength.[1] However, the names of but 162 members are found in the printed list, and vice-presidents and directors are elected for only 14 States. A remark in the introduction to the Transactions for the year shows that the editorial committee had at length encountered a cause of embarassment which has troubled many succeeding committees—the question of what to print in the annual volume. "The committee, if they had consulted only their own tastes," the plaint runs, "might have omitted or further curtailed several articles; but it was discovered that every article had certain warm admirers, of good hearts, at least, if not very cultivated understandings; and it was deemed most advisable to gratify as great a number of readers as possible." The subject came up in the convention, and resolutions were adopted conferring upon the committee more stringent editorial powers.

At this convention Rev. J. D. Pierce, author of the Michigan system of public instruction—if it is proper to confer that designation upon any man—appeared and, as though striking at some of the views advanced the year before, moved a resolution, which was promptly laid on the table, asserting that moral education in distinction from intellectual culture is an idea unfounded in fact and of dangerous tendency. To Mr. Pierce was also assigned this subject for the ensuing year: "On the effects of a multiplication of universities in the Western States on the higher branches of literature and science." Possibly it was a topic of his own suggestion; at least he was then laying out his strength on the organization of the University of Michigan. Perhaps Mr. Pierce was an unconscious Herbartian.

Mr. Kinmont offered a resolution to the effect that the system of public instruction should be so extended as to embrace the entire educational wants of the community, which led to an animated discussion, and to the adoption, no doubt, of certain resolutions offered by Mr. McGuffey, asserting that while the freest and fullest scope should be given to individual and associated efforts, a system of public instruction sufficient to meet the wants of the entire population should provide for teaching the usual branches of an English and scientific education,

[1] Transactions of the Seventh Annual Meeting of the Western Literary Institute and College of Professional Teachers. Held in Cincinnati, 1837. Cincinnati: Published by James R. Allbach, 1838, p. 255.

and that public schools of the different grades ought to be provided for that purpose to an extent sufficient to supply the existing and recurring deficiencies, under such regulations as the legislatures of the respective States should deem best adapted to effect the object. Following Professor Stowe's lecture, a resolution was offered similar in its terms.

Following Mr. Mansfield's report on the introduction of the study of law into literary institutions, the college resolved that the elements of government as developed in the American Constitution ought to be a permanent study in American schools, academies, and colleges. It was resolved also that the capacity for vocal music is common to mankind, and that it may be employed to great advantage in schools, and should be made a part of the daily course of instruction in common schools, as well as in higher seminaries. There was also a resolution favoring institutions for mutual instruction, such as lyceums and mechanics institutes, as a means of supplying the wants of education not yet met by the general system of schools and colleges. The list of reports for the next annual meeting included 18 subjects. To Dr. Drake, Mr. Mansfield, and Professor Stowe this pregnant theme was entrusted: "What are the effects on the progress and character of the learned professions in the West of the defective preparatory education of so large a proportion of those who are dedicated to these professions?"

Following is the list of addresses and reports, with their authors:

(1) Opening address. Albert Picket, sr.
(2) The moral influence of rewards in a system of education founded upon the doctrines of the Word of God. S. W. Lynd.
(3) The expediency of adapting common school education to the entire wants of the community. Samuel Lewis.
(4) Address in behalf of the Mechanics' Institute. John P. Foote.
(5) Report on domestic education. B. P. Aydelott.
(6) The effects of education upon the physical development of man. William Wood.
(7) The moral dignity of the office of the professional teacher. Samuel Eells.
(8) Report on the expediency of introducing selections from the Bible, instead of the Bible itself, into our schools. J. B. Purcell.
(9) Report on the same subject. B. P. Aydelott.
(10) Report on the importance and practicability of creating departments in our State goverments having the subject of public instruction under their immediate supervision. Alexander Campbell.
(11) Report on constitutional law. Edward D. Mansfield.
(12) Report on the best means of early mental culture. O. L. Leonard.
(13) Report on the importance of civil engineering as a branch of collegiate education. O. M. Mitchell.
(14) Report on linear drawing. F. Eckstein.
(15) Report on vocal music as a branch of common-school education. T. B. Mason and C. Beecher.
(16) Report on the mutual relation of trustees and faculties in literary institutions. B. P. Aydelott.
(17) Report on the question whether infant schools ought to be conducted rather with a reference to moral than intellectual culture. Joshua L. Wilson.
(18) The importance of moral education keeping pace with the progress of the mechanic arts. Benjamin Huntoon.
(19) The inducements to accept teaching as a life profession. Mrs. Julia L. Dumont.
(20) Report on the course of instruction in the common schools of Prussia and Würtemberg. C. E. Stowe.
(21) Outlines of true education, and of the national system. Walter Scott.
(22) Poem. Mrs. Caroline Lee Hentz.

Mr. Lewis, the newly appointed superintendent of the common schools of Ohio, contended, in his report, that public schools should be so expanded and improved as to include all that was then taught in the best English schools. He favored, therefore, not only district schools, but township schools of a higher grade. It will be seen that emulation, moral instruction, and the Bible still receive a large amount of attention. Bishop Purcell stated the Catholic position

in respect to religious teaching in the public schools, opposing the substitution of selections from the Bible instead of the book itself.

I therefore most respectfully submit—I therefore most earnestly urge on the attention of this college what seems to me, after the most anxious reflection upon the subject, to be the only wise and liberal and patriotic course to be adopted, viz: That Protestant Bibles be not placed in the hands of the Catholic youth in our schools; that our common-school teachers be strictly forbidden to give any sectarian bias to the minds of their pupils; and, to obviate all inconveniences, that one day or two days in every week be selected, and that the students of different creeds be assembled together to be instructed in the Bible and in their religious and moral duties generally by their own pastors. Thus, and only thus, as I think, can we provide for the effectual removal of the obstacles which now impede the diffusion of useful redeeming knowledge throughout the whole length and breadth of the land.

Rev. Dr. Aydelott, the Protestant member of the committee, also opposed the introduction of selections from the Bible instead of the Bible, but, in contending for the whole Bible, did not carry his views so far as to oppose the use of the New Testament, the gospels, the psalter, or even a single gospel. It was unanimously voted, "That the convention earnestly recommend the use of the Bible in all schools, to be read as a religious exercise, without denominational or sectarian comment, and that it is the deliberate conviction of this college that the Bible may be so introduced in perfect consistency with religious teaching and without offense to the peculiar tenets of any Christian sect."

Reporting on the importance and practicability of creating educational departments in the State governments, Mr. Campbell, as usual, built up his argument from the bottom. He showed himself familiar with European systems of education and pressed these systems into the service of his report. He urged the maintenance of district schools by the State, and also of normal schools for the purpose of teaching teachers the art of teaching. State education had become a matter for State supervision. Finally, he asked whether the needed State supervision could be secured through legislative enactments in the absence of constitutional provision, and answered that, while there might be nothing in the constitutions to forbid legislatures taking such action, the safe way was for every State to make it a prominent item in its constitution.

Mrs. Julia L. Dumont held that while the ban of degradation, laid for centuries upon elementary teaching, had been removed, and the schoolmaster might boast his vocation as among the better callings of men, it still remained to establish an appreciation of the high order of talent required by the work and the large preparation demanded.

The freshest topic was Professor Stowe's report on the course of study in the common schools of Prussia and Würtemberg. At the time Mr. Stowe was professor of biblical literature in Lane Theological Seminary, and in May, 1836, he had been sent abroad to purchase books for the library of that institution. As he was on the point of leaving home, the legislature of Ohio gave him a commission to investigate and report on the conditions of common schools in Europe, particularly in Germany. He was well prepared for such a commission, as he was proficient in the German language and literature, and a professional educator. His report to the legislature, which was one of the influential educational documents of the time, was not published until 1839; in the meantime, after his return, as well as afterwards, he often lectured and wrote on the subject, thus doing as much, perhaps, as any man of the time to popularize knowledge of German schools and education. The present report is a straightforward exposition of the subject. In his closing paragraph he repels the idea that the German system of schools, so superior to anything that existed in the United States, was impracticable or visionary, emanating from the closet of the recluse; it was rather the course of instruction actually pursued by thousands of schoolmasters in the best district

schools that had ever been organized. The system could be carried out in the United States, as it had been in Europe; it could be done in Ohio, as it had been done in Prussia.

In March, 1837, the first number of the proposed periodical appeared, The Western Academician and Journal of Education and Science, and was in regular course of publication at the time when the convention was in session. It was an octavo pamphlet, generally counting 56 pages. Its threefold name suggests its character; it contained academical, educational, and scientific articles. Nearly all the contributors were members of the college, and some of the articles were extracts from their earlier addresses and reports made to the conventions. Still there were many original articles. Book reviews were something of a feature. The college, after careful investigation, adopted unanimously the resolution that the periodical be made the organ of the college, and that its literary character was such as to entitle it to the full patronage of the college and the friends of education in every section of the country. The full proceedings of the convention of 1837 are contained in the first volume. Referring in one of the numbers to the continued growth of the College of Professional Teachers in talent and numbers, and the extension of its vast and benign influence in the cause of education throughout the West and South, the editor relates the history of the creation of the office of State superintendent of common schools by the legislature of Ohio. It was due to the powerful appeals of a committee representing the college that was sent to Columbus for this purpose that the office was created, and Samuel Lewis appointed the first superintendent. This action was had, it may be remarked, some months before Horace Mann was appointed secretary of the Massachusetts board of education. The editor reports further that similar efforts, made through the instrumentality of the State directors in several of the other States at the last sitting of their respective legislatures, had led to valuable legislation.[1]

The preface to the Transactions of 1838 contains various items of educational interest, domestic and foreign.[2] One of these is that in Ohio alone upward of 1,000 common-school houses have been erected during the previous year. The preface attributes the great educational revival to the influence of the Bible. "Never," it says, "had the Bible been so widely circulated and generally read as it was just previously to the present revival of the cause of education."

The veteran president was absent from the convention, owing to indisposition, and his annual address was read by another. The names of 194 members were reported, and directors were elected for 13 States and Territories. Iowa Territory now comes into the circle. Both the minutes and addresses and reports convey the impression that the college is undergoing some internal change. The discussions are animated, but fewer resolutions than before are adopted. There is more than a suggestion that the men who had organized the college, and so far sustained it, were beginning to give way to new men, which was, of course, perfectly natural, especially when we consider the widening sphere of its operations. In particular, Mr. Kinmont, who had been one of the ablest and most active men in the body, died but a few weeks before the convention sat. President Picket in his address referred to his death in a feeling manner.

The executive committee reported that The Western Academician had not been published since the termination of the first volume, in April preceding; the publisher had declined to go on with it and the committee had been unable, owing to the unpropitiousness of the times, to effect a continuance of the work by any

[1] The Western Academician and Journal of Education and Science. Edited by John W. Picket, A. M., Cincinnati. Published by James R. Allbach. 1837-38, p. 704.

[2] Transactions of the Eighth Annual Meeting of the Western Literary Institute and College of Professional Teachers, held in Cincinnati, October, 1838. Cincinnati. Published by James R. Allbach, 1839.

other publisher, "which is the more to be regretted as the work had already acquired well-deserved celebrity, a very respectable patronage, and bid fair to realize the fondest anticipations of its warmest advocates, affording a means whereby the proceedings of the college could be extensively circulated and a knowledge of its operations widely diffused." A committee was duly appointed to consider its resuscitation, but the committee did not go further than to express regret at its suspension, and to authorize and recommend the executive committee to reestablish it provided it could be done without involving the college in any pecuniary charge. Such an arrangement was never made, and The Western Academician was never resuscitated. It was, plainly enough, in advance of the wants, however it may have been with the needs, of the Western country.

Mr. Pierce did not appear to discuss the effects of the multiplication of colleges and universities in the Western States on the higher branches of literature and science, but the subject was called up and discussed at different times with no little animation. It soon became apparent that there was a strong opposition to the multiplication of such institutions in the West, but the grounds of it are not very clear. A resolution declaring that such multiplication was calculated to exert a favorable influence on the higher branches of literature and science was laid on the table.

The subject of female education engaged much of the time of the convention. A resolution by President McGuffey, asserting that the interests of such education demanded the endowment of female seminaries for the education of female teachers, and also for those who were not directly designed for that office, was not brought to a vote.

Mr. Lewis offered resolutions declaring that the great want of qualified teachers of common schools was such as called loudly for action that would supply the present and increasing demand, and that the subject of establishing national or State institutions for teachers was one which required the careful deliberation of every friend of popular education, as well as of every legislator who sought to preserve and delegate our popular institutions. This subject came to the front at various times during the convention; several resolutions were offered, all of which were finally referred to Professor Stowe, to be reduced to a consistent scheme. The next day the Professor brought forward a somewhat elaborate scheme, when, after further discussion, the convention disposed of the subject for the time by referring it to a large committee for investigation and report. Professor Stowe's programme, it may be remarked, involved, in addition to the ideas that were then being worked into the Massachusetts normal schools, the teaching of the German, French, and Spanish languages, with the elements of Latin. It was resolved that Sunday schools, when properly conducted, are a most valuable auxiliary to the common schools; also that the habit of relying upon printed questions in text-books is highly detrimental to the intelligent development of the pupils and to the improvement of the teacher in the art of teaching.

The list of reports for the next annual meeting embraced 26 topics. A comparison of these annual lists is interesting, showing, as it does, a tendency to leave behind the large general questions that had given full scope for the lengthy addresses of earlier years and to take up more specific and practical questions. Still, such a scheme as this, "On the duties at present peculiarly incumbent upon American citizens," would seem to give any reasonable amount of latitude for vague general disquisition.

The annual list of topics was as follows:

(1) Opening address. Albert Picket, sr., president of the college.
(2) Introductory discourse. The Bible as a means of intellectual improvement. C. E. Stowe.
(3) On the formation of society, its leading developments, etc. Hon. J. McLean.
(4) On moral culture. Rev. M. M. Carll.

(5) On the importance of introducing a uniform system of common-school education. E. Vance, esq.
(6) On the advantages of a department of English language and literature in colleges. B. P. Aydelott, D. D.
(7) On the study of the modern languages. J. F. Meline, esq.
(8) On college government. Rev. Dr. A. Wylie.
(9) On the uses of history. E. D. Mansfield, esq.
(10) On female education. A. H. L. Phelps.
(11) On conversation as a study to be introduced into schools. Mrs. C. L. Hentz.
(12) On education and the best means of acquiring it. Mr. T. S. Reeve.
(13) On the introduction of gymnastic exercises into the American system of education. Mr. J. C. F. Salomon.
(14) On physical education. William Wood, M. D.
(15) On professional education. Prof. C. E. Stowe.
(16) On education. Mr. William Slocomb.
(17) Valedictory. Rev. A. Wylie.
Appendix: Report on the duty of teachers. The schoolmaster. E. P. Langdon.

The appearance of Hon. John McLean, an associate justice of the Supreme Court of the United States, on this programme naturally attracts attention. The trend of his discourse is shown in the statement of his subject. One of the most readable passages is a quotation from a foreign periodical:

As for literature, the Americans have none—no native literature, we mean. It is all imported. They had a Franklin, indeed, and may afford to live half a century on his fame. There is or was a Mr. Dwight who wrote some poems; and his baptismal name was Timothy. There is also a small account of Virginia by Mr. Jefferson, and an epic by Joel Barlow, and some pieces of pleasantry by Mr. Irving. But why should the Americans write books, when a six weeks' passage brings them in their own tongues our sense, science, and genius, in bales and hogsheads. Prairies, steamboats, and grist mills are their natural objects for centuries to come.

The learned judge cites this passage, published twenty years before, merely to remark the change of the foreign press in its tone toward this country. It is almost needless to remark that he strongly favored teaching the elementary principles of our Government in the schools. Nothing less than the preservation of our public institutions was involved in the inculcation of these principles.

The observant reader has not failed to notice that the names of few women appear in the annual programmes of the College of Professional Teachers. The programme for 1836 includes an essay on Female Patriotism, by Mrs. Huntley Sigourney; the one for 1837 an essay on The Inducements to Accept Teaching as a Life Profession, by Mrs. Julia L. Dumont; and Mrs. Caroline Lee Hentz contributed a poem to the exercises of this session. In 1838 Mrs. Almira H. L. Phelps contributed an essay on Female Education; in 1839 Miss Anne W. Maylin, an essay on the Pains and Pleasures of Teaching. It seems that none of these ladies appeared to read their papers in person.

The most thoughtful of these contributions is that of Mrs. Phelps. Her essay is a brief paper containing nothing that would now be considered novel, but it is nevertheless a well-considered and well-written argument for the better education of women. She treats her subject under three divisions:

First, in regard to the well-being of woman herself; second, in its effects on the character of the other sex; and third, the improvements which have been made in female education.

She confutes the assertion that education renders females less contented with the lot assigned them by God and by the customs of society, that it tends to draw them from their appropriate domestic duties, and thus renders them less happy and less useful. Remarking upon the advances recently made in female education she writes:

Thirty years since the writer recollects hearing her elder sister, then a young, enthusiastic girl, inveighing against the injustice which withheld from females

the advantages of education bestowed upon the other sex; she said what in my childish folly I thought to be very absurd, that there should be colleges for females as well as for males, and that the time was at hand when such institutions would exist. Fifteen years afterwards this visionary girl, as her friends then called her, had founded the Troy Female Seminary, which in its thorough and liberal course of study, its various instructors and recitation rooms for different branches, its separate departments for pupils, where they can uninterruptedly pursue their studies, may very properly be termed a female college.

She incisively characterized the old boarding-school education for girls, and happily presented the alternative that presented itself to the learned man desiring a companion, when his choice lay, on the one hand, between the superficial boarding-school girl whose whole education, in many cases, was summed up in her piece of embroidery, and who was in reality fitted neither for ornament nor use, and, on the other, the domestic drudge who, having been at her father's house a patient and useful laborer, might be expected to relieve her husband of domestic cares, and leave his mind free to roam in his more elevated sphere. She closes with saying that it is to the younger States that society must look for liberal endowments of female institutions. "New England, priding herself upon her steady habits, gives little encouragement that she will change her policy, which gives all of aid to male institutions, leaving female education wholly to the uncertainties of chance."

It is interesting to note in this connection the general temper of the college with regard to female education. Throughout all its sessions may be traced addresses, reports, and resolutions on such subjects as courses of study for females, the physical education of females, the branches of study appropriate to the two sexes, etc. There are evidences of a very active and practical interest in the matter. However, the prevailing tone of the discussions is that the mental diet of the woman can not with safety be made very strong. In the session of 1839 the discussion seems to have become quite heated. William Johnston, esq., submitting the report of a committee to which all the papers before the convention on this subject had been referred, said that the committee was unable to see any good reason for making distinctions between the education of males and females, for whatever faculties of mind belonged to man belonged to woman also. On the other hand, Bishop Purcell introduced the following:

Resolved, That in the opinion of this college the education of females, in order to be such as would at once attract the esteem and love of the other sex; and to elevate their own characters, should be based on the union of polite accomplishments with a thorough knowledge of housewifery.

The only report from the committee on professional education in the West, appointed the year before, was made by Professor Stowe on his own profession. It is a much more academical performance than one could wish to have it, saying nothing except by implication about the concrete subject assigned to him. The Professor begins with laying down what he conceives to be a complete preparatory education for the clerical profession, and then proceeds to point out the more prominent evils which universally and necessarily result to the profession from a general deficiency in this preparatory course. Rev. Dr. Wylie's valedictory contains some satirical remarks on college faculties and boards of control, which suggest that he was not altogether pleased with the state of things at the Indiana University, over which he presided.

There was a report by Dr. Lyman Beecher, not published, on the familiar subject of emulation, and counter reports by Mr. Picket and others that do not appear in the Transactions.[1]

[1] Dr. Beecher, although he participated in the discussions at other times, was hardly as prominent in the conventions as we should have anticipated. It is noteworthy that the names of four of his sons appear in the lists of members—Edward, Charles, Henry Ward, and George.

The attention given to physical education by the college is a question of interest, in view of the amount of attention given to it to-day. In 1838 Mr. J. C. F. Saloman, who had trained in gymnastics more than 10,000 young Prussians, made a report on the introduction of gymnastic exercises into the American system of education. Dr. William Wood made an address at the same session on physical education. Throughout the sessions of the college the necessity of an intelligent care of the body is recognized in the addresses on mental and moral training. However, there are no traces of action to inaugurate any system of physical education. Such exercises as dancing and horseback riding were regarded with considerable disfavor by the graver members of the college, and the equipment necessary to the gymnastic courses of the present day seems not to have been available.

In its report for 1839 the executive committee held an encouraging tone, not merely respecting the cause of education, but also the cause of the college.[1] The back volumes of the Transactions, as well as the surplus copies of The Academician, had nearly all been sold. The committee strongly urged the revival of that journal as soon as practicable. The business embarrassments of the times were a material cause of its suspension. The organ had been strongly commended, there was no want of laborers or materials, and the need was great. Nothing but a Western periodical could fully meet the exigencies of the West. Finally the committee suggested that the following subject be set for investigation and report at the next annual meeting: "The state of colleges and common schools in the West." Unfortunately the annual list of members was omitted from the volume, but the number of State directories elected was 18. North Carolina, Florida, Alabama, and Wisconsin Territory now appear.

The division of opinion as to public and private schools higher than elementary schools was equally as marked as at the last meeting. Professor Telford, to whom the subject had been referred, reported the following resolutions:

(1) *Resolved*, That in the opinion of this college the establishment by law of literary institutions, with corporate capacities, empowered to confer degrees, and sustained by public endowment, is unfavorable to the progress of education.

(2) *Resolved*, That in the opinion of this college the business of education, especially in its higher departments, will be most successfully conducted when it is left to free competition and voluntary enterprise.

(3) *Resolved*, That any multiplication of universities or colleges in the Western States, by charter or statute, is unnecessary and would be seriously pernicious in its effects upon the higher branches of literature and science.

There were numerous "animated" discussions, but the convention could come to no agreement, and the subject was indefinitely postponed. At the close of a lecture by Dr. Mussey on the influence of tight dressing upon health and life the whole subject of female education was again discussed and then referred to a committee of four. This committee reported that the thorough and substantial education of females is of equal importance with that of males, and that in all branches of literature and scientific knowledge it should be equally extensive; but after further discussion the whole subject went over to the following year. A communication was sent in by ladies in attendance and read returning "the thanks of the fair to the members of the college for the interest they had manifested in that great cause."

Rev. J. Blanchard, of Illinois, offered some resolutions relating to the education of the colored race, which, rather suspiciously, were not printed. They were referred to the committee on bills and overtures, which reported that the resolutions did not come properly within the objects of the college. A committee of

[1] Transactions of the Ninth and Tenth Annual meetings of the Western Literary Institute and College of Professional Teachers, held in Cincinnati, October, 1839, and October, 1840. Cincinnati: Kendall & Barnard, printers, 1841.

five was appointed to consider what measures should be adopted to awaken a more general interest in the great objects which the college was designed to accomplish, and to secure the advantages of this institution to the several States of the West. Mr. Maylin attempted to commit the convention to a philosophical creed, offering the resolution that "the association of sensations and ideas is the principle upon which all the intellectual and moral acquirements are formed and matured." He offered a defense of the doctrine in his address on the same subject, but no action was had.

After Mr. Perkins's paper on the subject, and a further discussion, resolutions were offered declaring (1) that the idle and vagrant boys found in the streets of our Western cities inflict deep injuries upon our schools, both public and private; (2) that a report be made to this college next year as to the best means of curing the evils resulting from the vagrancy of boys in our cities; (3) that this college respectfully invites citizens to consider the subject of the above report, and to inquire what may be done to remedy the evil there set forth by schools of moral reform, houses of refuge, and other means. Resolutions were adopted in regard to the teaching of science, declaring (1) that natural science is peculiarly fitted to form a prominent feature in every correct system of education; (2) that an expression of opinion be solicited from the trustees and visitors of the common schools of Cincinnati as to the expediency of introducing the more useful departments of natural science into one or more of the schools under their care, and (3) that a committee of three be appointed to draft the outlines of a plan on which an academy could be organized in each county in the State for the purpose of affording instruction in the higher departments of English literature and science.

Numerous other resolutions were adopted—one or more in favor of the collection of educational statistics and other educational information; one in favor of giving school children sufficient exercise; one in favor of permanent school boards; one asserting the propriety of making the profession of teaching a distinct profession and the desirability of adopting some well-regulated plan to secure that end. The subjects for reports in 1840 are 34 in number. The subject "On the peculiarities of German universities," assigned to Rev. William Nast, is suggestive of growing interest in German education.

The list of addresses and reports found in the volume is as follows:

(1) Introductory remarks. Dr. J. L. Wilson.
(2) Opening address. A. Picket, sr.
(3) Address on discipline. J. P. Foote.
(4) Annual report of the executive committee.
(5) Address on the duties of American citizens. Dr. D. P. Aydelott.
(6) Essay on the pains and pleasures of teaching. Annie W. Maylin.
(7) Report on the question, How far can an appeal to the sense of honor and the moral sentiments in school be made a substitute for corporal punishment? James Shannon.
(8) Report on the state of education in Georgia. J. Dillingham.
(9) Report on the principle of association of sensations and ideas in forming and maturing intellectual and moral acquisitions. Thomas Maylin.
(10) Report on female education. William Johnston.
(11) Report on extending the usefulness of the college. By a committee.
(12) Report on teaching arithmetic. D. Hand, jr.
(13) Report of a committee on examining the pupils from the Ohio Institution for the Education of the Blind.
(14) Report on the state of education in Mississippi. C. G. Forshey.
(15) Report on the blackboard. J. Ray.
(16) Report on primary education. George R. Hand.
(17) Annual address of the executive committee.

At the session of 1839 the executive committee of the college confined their annual report almost entirely to a plea for the formation of auxiliary educational societies, which should cooperate with the College of Teachers. They used the following language: "The formation of actual auxiliary societies in every part of

our land is, therefore, our great object at this time; and to bring this about we offer the following plan, etc." Then followed a mode of procedure by which a group of persons might form themselves into a society for "the promotion of the home interests of education," adopt a constitution, and, after notifying the corresponding secretary of the college that it had become auxiliary to that body, be privileged to send representatives to its conventions.

The first response to this plan for the extension of the influence of the college was the formation of the Cincinnati Society for the Promotion of Useful Knowledge. The initial step in the founding of this society was taken at a public meeting held March 27, 1840, at the hall of Cincinnati College. The object of the meeting was stated to be "to establish a society for the purpose of aiding in the improvement and extension of practical education, and of laying the foundation of the great Western Academy of the Sciences and General Literature." A constitution and by-laws were adopted for the new society. Herein it was ordained that the society be divided into fourteen sections for the investigation of such subjects as practical teaching and the various branches of learning that enter into a liberal education and into the professions. It was ordered that the society institute each year a course of lectures to be delivered weekly or oftener between the beginning of November and the close of March. There were to be two meetings of the society each year. At the one next preceding the convention of the College of Teachers, delegates to that body were to be appointed and the matter prepared to be submitted to it.

All these proceedings were reported to the College of Teachers at its session held in October, 1840. The minutes of this session include the following resolutions:

(1) *Resolved*, That this College would rejoice to see formed in the West a general academy of science, art, and literature, with branches or corresponding societies, and corresponding members in the various parts of the country.

(2) *Resolved*, That the meeting of such an academy in connection with this College would be a benefit to both institutions.

(3) *Resolved*, That the executive committee of this college be desired to send, to such points as they may deem best, an outline of the constitution and organization of the Cincinnati Society for the Promotion of Useful Knowledge, with a view to the formation of similar societies elsewhere.

(4) *Resolved*, That we recommend to the Cincinnati Society for the Promotion of Useful Knowledge such a cooperation with the executive committees of this College as may secure the formation of similar societies elsewhere and the presence of representatives at the next meeting of the College, for the formation of such an academy as is contemplated.

Mr. Venable says that "this Great Western Academy of the Sciences and Literature" was planned mainly by Prof. O. M. Mitchell, General Mitchell of the civil war. "The organization had too many aims to hit anything in particular. The most important section that survived was the astronomical, which, under the fostering care of Mitchell, came to fruition in the Cincinnati Observatory." He adds:

The energy of the College of Teachers was transmitted to different institutions—the Mechanics' Institute, various libraries, schools of medicine and law, the Historical Society, and the Academy of Fine Arts. The impulse which it gave to popular education spread throughout the State of Ohio and throughout the nation, and the schools of to-day inherit a legacy of vital force from that vigorous pioneer institution.[1]

The mild suggestion of internal changes in the college that were first met with in 1838 became more pronounced in the two following years. More and more the active work passed out of the hands of the men who founded the institution and gave it its early success. Some of the best known of them, for some reason,

[1] Beginnings of Literary Culture in the Ohio Valley, pp. 426–427.

ceased to attend. But there were signs of a decline of power as well as of change in the working force. The college was never able to resuscitate its organ, The Western Academician and Journal of Education and Science, while the proceedings of 1839 were not published until they were more than a year old, and then in connection with those of 1840. This delay, whether it was foreseen or not, pointed to the final disappearance of the Transactions the next year. The addresses and reports as a whole show less ability than in earlier volumes, while certain action taken by the convention suggests that there was more or less unrest and dissatisfaction within the body itself. The report of the executive committee, made in October, 1840, is extremely brief, and lacks the hopeful spirit of earlier reports. The reason for the failure to publish the Transactions of the previous year at the proper time was the failure of the publisher to secure advance subscribers for 300 copies. The venerable president for the first time failed to make an opening address. The convention was, however, well attended; the names of 216 members appear in the lists, and directories for 18 States and Territories. The opening address was delivered by J. H. Perkins, on the importance of forming societies auxiliary to the college.

Professor Forshey, of Mississippi, offered resolutions declaring that the incorporation of military discipline into civic institutions of learning, so far as might be necessary for the vigorous and voluntary exercise of students and the insuring of promptitude and punctuality and implicit obedience to the same, without interfering with the usual course of study, is highly desirable, and that the substitution of military for civil discipline in the schools, academies, and colleges of the United States would furnish an ample substitute for the United States militia; but the convention did not share his opinions. A committee of six was appointed to consider and report definite objects for the action of the College. On motion of Professor Stowe this committee was instructed to report respecting the manner in which female teachers might best cooperate in promoting the objects of the College. The committee considered the subject carefully and reported a plan of work in some respects new, but it is impossible to make out from the minutes what this plan was. It may be inferred that the confusion in which the secretary left the subject was indicative of the prevalent state of mind in respect to it.

The subject of female education came up again, and the resolution that "whatever education a parent gives to his son he ought to give to his daughter, except that part which may be given with a special view to a profession," was offered, but it did not carry. Professor Forshey offered resolutions affirming that, in this country, institutions need no endowment save for buildings, libraries, and apparatus; that all endowments by which scholars are supported after leaving college, and no constantly active duties are required of them, are unwise and should be discouraged; and that the current religious instruction at colleges, male and female, was vague and insufficient, and that means should be adopted to give greater definiteness, force, and effect to the religious education of the pupils, at least out of the common schools; but no action appears to have been taken on them.

Following a report by President Biggs, it was resolved that the College would rejoice to see formed in the West a general academy of science, art, and literature, with branches of corresponding societies and corresponding members in the various parts of the country; that the meeting of such an academy in connection with the College of Teachers would be a benefit to both institutions; that the executive committee be desired to send an outline of the constitution and organization of the Cincinnati Society for the Promotion of Useful Knowledge to such points as they might deem best, with a view to the formation of similar societies elsewhere; and that the Cincinnati Society for the Promotion of Useful Knowledge be recommended to cooperate with the executive committee in such way as

might secure a formation of similar societies elsewhere, and the presence of representatives at the next meeting for the formation of such an academy as was contemplated. Other resolutions were adopted—one calling for the full cooperation of parents and teachers; one creating a committee to report a course of study for the district schools; one that natural science should occupy a prominent place in the college course of instruction; one that conscience should be educated under the influence of those principles developed in the word of God; one that the evidences of the Christian religion should receive a full degree of attention in a college course, and still others. The subjects for report the next year were 51 in number.

The list of formal addresses and reports was as follows:

(1) Report of the executive committee.
(2) Address on the classification of all human knowledge. R. Park.
(3) Report on a course of study for females. J. M. Matthews.
(4) Report on the cooperation of parents with the teacher. S. N. Manning.
(5) Report on natural science. F. Merrick.
(6) Report on ancient languages and literature. T. J. Biggs.
(7) Report on English universities. J. H. Perkins.
(8) Report on the education of the conscience. James Challen.
(9) Address on the immortality of mental influence. Dr. Morrill.
(10) Report on the means that boards of examiners may employ to elevate the literary character and qualifications of the teachers of the public schools. Joseph Ray.
(11) Report on voluntary obedience. Thomas Maylin.
(12) Report on the definite objects for the action of the College. A committee.
(13) Report on the evidences of Christianity as a branch of education. T. A. Miles.
(14) Report on the moral and intellectual faculties and their development. M. M. Carll.
(15) Report on a course of instruction for common schools. George R. Hand.
(16) Formation, constitution, etc., of the Cincinnati Society for the Promotion of Useful Knowledge, with the names of the members.
(17) Present condition of the Ohio Mechanics' Institute, with the names of the members.
(18) Address on female education. William Johnston, esq.
(19) Report on the influence exerted upon our schools (in cities particularly) by idle, vagrant boys found in their neighborhood.

This was the last volume of the Transactions, and the college did not long survive. Probably the files of the Cincinnati newspapers would furnish some information concerning its last years, but it would hardly reward the labor that it would cost to find it. Mr. Venable informs us that the meetings of 1843 and 1844 were held in Louisville. No doubt a new lease of life was sought in the change of scene, but it was not found. The college died peacefully, perhaps in 1845.

We have now completed this chronological account of the Western Literary Institute and College of Professional Teachers. Perhaps some will think its length quite disproportionate to the importance of the subject. Others, possibly, may hold that the time and space devoted to it have been altogether wasted. Such questions as these are likely to arise: "Why describe these old books that nobody reads or cares anything about?" "Why reproduce these dead resolutions, programmes, and extracts from forgotten speeches?" While we can not think intelligent students of our educational history will take either of these views of the matter, but will rather see in the story an important stage in our educational development, we still think it wise briefly to set forth the main facts that constitute the answer, especially as the attempt will give an opportunity to describe some features of the college more fully.

By the fourth decade of the century the great educational revival, or, more narrowly, the common-school revival, was well under way. Never had anything like it been seen in the history of the world. Men of all kinds and classes in all progressive countries were awakening to the necessity of popular education. We

need not carefully inquire concerning the causes of this great awakening; in fact they can not be made altogether plain. We see the educational bearings and effects of industrial and commercial ideas, of political and social sentiment, of the wide diffusion of knowledge and the growth of the scientific spirit, of the philanthropic impulse, of the resolution on the part of men more fully to realize their manhood, and on the part of nations to achieve a more complete development; but, when all is said, we feel that something has escaped us in the analysis, and so fall back into the arms of the Time Spirit. We see the awakening as a fact, and that the time for it had come. In our own country the States that had public-school systems were seized with a desire to improve them; the States that had none, with a desire to create them. Some of our best-known educational agencies date from this time; educational departments in State governments, normal schools, teachers' institutes, the superintendency, the developed graded school, articulated State school systems, and district-school libraries, while educational literature received a great impulse. It was in the midst of this storm and stress that the College of Professional Teachers was founded.

The meaning of the last sentence is that in the West the educational awakening was felt with peculiar power. There were many reasons why it was so. Population was increasing, not by the slow increments that marked the English colonies in the seventeenth century, but by leaps and bounds. The population of the Old Northwest was 272,000 in 1810, 842,000 in 1820, 1,470,000 in 1830, 2,924,000 in 1840. Within these limits of time Ohio rose from the thirteenth place in the Union to the third place. This population was of a very miscellaneous character. Men of New England, the old Middle States, and the South jostled one another, and they all jostled foreigners of many nationalities. It was the first period of emigration on a great scale to our shores. Under the new conditions the bonds of society were more or less loosened, and on the wide frontier, where the white man met the red man, he tended to fall to his level of life. Morals, religion, social customs, parted with some portion of their energy, while the longing for education was sometimes lost with the opportunity to obtain it. Institutions of all kinds had to be built up, and built quickly. From the Lakes to the Gulf of Mexico society was in a formative state. Education can hardly be said to have taken on any organized form. Ohio, for example, only took the first step toward forming a common-school system in 1821, and ten years later this system was still very rudimentary; Indiana had not even the semblance of a system until years afterwards; while Cincinnati, as we have seen on a previous page, had only established her common-school system in 1829. Multitudes of men thought the coming of the foreigner boded danger, if not disaster, to the Republic, while those who had been reared under the influence of Puritanism dreaded in particular the influx of Catholics. At the East there was no little anxiety lest the vast westward extension of the Union should prove fatal to its perpetuity.

These facts will but faintly suggest to those who have not looked into the matter the state of mind of philanthropic and patriotic men in regard to the destiny of the West. Their anxiety may seem to us uncalled for, but we can not deny that it was real. Casting about them for relief and hope, these men fixed their eyes mainly upon education and religion, the school and the church. Said Professor Stowe in his address on the education of foreigners: "Let us now be reminded that unless we educate our immigrants they will be our ruin. It is no longer a mere question of benevolence, of duty, or of enlightened self-interest, but the intellectual and religious training of our foreign population has become essential to our own safety; we are prompted to it by the instinct of self-preservation."

It was his profound conviction of the danger and the need that induced Dr. Lyman Beecher, in 1832, to resign his Boston pulpit and accept the presidency and professorship of theology in Lane Seminary, Cincinnati. This conviction glows

in his correspondence in relation to his taking this step.[1] Moreover, during the early years that he held this position, besides his work in the West, he strove to arouse the people of the East, and particularly of New England, to an active cooperation in the work. He beat the Bibles of the leading Calvinistic churches, appealing for aid for his own institution. Nor was this all. In 1834 he made the churches of Eastern cities ring with his "Plea for the West," a powerful discourse in which he covered the whole ground.[2] Two short extracts will show the quality of this plea:

But what will become of the West if her prosperity rushes up to such a majesty of power, while those great institutions linger which are necessary to form the mind, and the conscience, and the heart of that vast world? It must not be permitted. And yet what is done must be done quickly; for population will not wait, and commerce will not cast anchor, and manufactures will not shut off the steam, nor shut down the gate, and agriculture, pushed by millions of freemen on their fertile soil, will not withhold her corrupting abundance.

We must educate! We must educate! or we must perish by our own prosperity. If we do not, short from the cradle to the grave will be our race. If in our haste to be rich and mighty we outrun our literary and religious institutions, they will never overtake us; or only come up after the battle of liberty is fought and lost, as spoils to grace the victory, and as resources of inexorable despotism for the perpetuity of our bondage. And let no man in the East quiet himself, and dream of liberty, whatever may become of the West. Our alliance of blood, and political institutions, and common interests is such that we can not stand aloof in the hour of her calamity, should it ever come. Her destiny is our destiny; and the day that her gallant ship goes down our little boat sinks in the vortex.

This and similar appeals led to the creation of organizations and agencies at the East for the promotion of Western educational and religious interests that still continue.[3]

Such were the general conditions under which the College of Professional Teachers was founded and carried on. It was not the creature or product of Western schools and education, but their creator. These facts serve to explain still others that are well worth stating.

The membership of the college, in respect to numbers, range of territory represented, and character, was, for the time, remarkable. The footings of the annual lists of members may be reproduced:

1834	125	1838	194
1835	147	1839	---
1836	222	1840	216
1837	162		

In all, the names of 317 men appear in the rolls, coming from about 20 States and Territories. The college more than realized the ideal of a Mississippi Valley association, for it drew within its circle several States on the Atlantic seaboard, and all of those on the Gulf of Mexico. However, the name College of Professional Teachers was misleading. The strength of the institution lay in the fact that it was composed, not merely of teachers, but of other persons who were actively engaged in promoting the cause of education. An association of teachers alone never could have exerted the influence that this association exerted. Mr. Mansfield, who was an active member, and a very competent judge, after calling the college "an institution of great utility and wide influence," thus describes its field and work:

Its object was both professional and popular—to unite and improve teachers, and, at the same time, to commend the cause of education to the public mind.

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[1] Autobiography, Correspondence, etc. of Lyman Beecher, LL. D. Edited by Charles Beecher. In two volumes. New York, 1865. Vol. II.

[2] A Plea for the West. By Lyman Beecher. Cincinnati: Truman & Smith, 1835; pp. 30, 31.

[3] The above remarks suggest an interesting theme that has never been adequately treated, or, one may almost say, treated at all—the educational work of Eastern churches and societies in the West.

The former object might have been obtained by the meeting of practical teachers only, as is now done, but to popularize education required that gentlemen of science and general reputation, who had weight with the community, should also be connected with it. At that time public education was just beginning, and almost all in the Ohio educational system * * * was created and developed after that period. To do this was the object in view, and accordingly a large array of distinguished persons took part in these proceedings. I doubt whether in any one association to promote the cause of education, there was ever in an equal space of time concentrated in this country a larger measure of talent, information, and zeal.[1]

And again, after mentioning its death, he says:

Since that time associations of practical teachers have taken its place, and are beyond doubt useful and instructive to teachers. Yet there is wanting some popular means of connecting teachers with the general public, and I am convinced that the College of Teachers, composed of both practical and literary men, was the best reunion of that sort yet devised and for which no substitute has been found. The human spirit, like a plant, needs a genial soil, and draws nutriment not only from the earth, but from the atmosphere.[2]

There can be no doubt of the correctness of Mr. Mansfield's opinion that there is wanting some popular means of connecting teachers with the great public, and that to secure this end teachers and practical men must in some way be brought together. In education certainly, if not in religion and other social interests, the separation of the professional and the lay elements has gone too far. Our educational meetings of all kinds are almost exclusively made up of teachers.

Mr. Venable, the historian of early literary culture in the Ohio Valley, speaks in language similar to that employed by Mr. Mansfield: "The College of Professional Teachers was a popular body, grounded on democratic principles, and its mission was to create a public opinion in favor of the free-school system." "The professional teachers called to their support the shining lights of the pulpit, the bar, and the press. Such distinguished representative men as Beecher, Campbell, Purcell, J. M. Peck, Drake, and Grimké joined in the discussions with all their force and fervor. The best scholars of the West brought their best learning to the convention." He quotes Mr. Gallagher: "Perhaps the most important literary institution in the West, and certainly one of the most interesting in the world, is the College of Professional Teachers."[3]

The interest and enthusiasm that attended the annual meetings were certainly extraordinary. Mr. Venable very properly finds evidence, both of the interest and of the influence of these meetings, in the fact that delegates came to them from points as remote as Florida and Wisconsin, Pennsylvania and Louisiana. "People crowded to its daily sessions, which were held in the largest churches, and listened to essays and addresses with breathless attention and semireligious enthusiasm." Mr. Mansfield, after calling the college "a means of great intellectual development," the best that Cincinnati ever had, gives his personal recollections as follows:

In its meetings I have heard such discussions as I have neither heard nor read of elsewhere. I have heard Alexander Kinmont keep an audience intensely excited till past midnight. I have heard Dr. Drake in his most eloquent and animated strains; Dr. Beecher in his strength and fervor; Dr. McGuffey in his acute and logical argument; and Professor Stowe in his plain, yet learned, criticism. In listening to such men discuss some of the most important points in education, connected in the first place with the metaphysics of the human mind, and then with great social interests to flow from them, I have received a pleasure and a benefit in vain sought among the ordinary pursuits of human life. The memory of these discussions lingers in my mind, and calls up the delightful company of friends, and the intellectual brilliance which surrounds them.[4]

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[1] Personal Memories, Social, Political, and Literary, etc. E. D. Mansfield, LL.D., p. 267.
[2] Ibid., p. 268.
[3] Beginnings of Literary Culture in the Ohio Valley, pp. 425, 426.
[4] Memoirs of the Life and Services of Daniel Drake, M. D, pp. 245, 246.

This sketch would be incomplete without some account of the city that furnished the college its meeting place.

Cincinnati was by no means the oldest town in the Mississippi Valley, but it was the leading town. It soon came to be known as the "Queen City of the West." In 1830 the population was 24,831, while Pittsburg had but 12,542 and Louisville but 10,341. St. Louis had not yet taken a separate place in the census tables and Chicago did not exist. Founded in 1788, the place, when once it cast off its frontier reputation, was marked by its enterprise, public spirit, and cosmopolitan character. It drew its population from all parts of the Union, as well as from foreign countries. Mrs. Harriet Beecher Stowe, writing in 1834, speaks of the eclectic character of society. Cincinnati printed a newspaper in 1793 and a book in 1796; opened a subscription library in 1802 and started a literary journal in 1820. Schools appeared in 1790 and 1792; a school association called Cincinnati University was founded in 1806, but did not flourish, and the Lancaster Academy opened its doors in 1815. Four years later this academy was chartered as Cincinnati College, with literary, medical, and law faculties. In 1825 it was compelled to suspend, but reopened its doors ten years later; its chartered privileges still continue, but everything except the law school long ago disappeared. The Ohio Medical College was established in 1820 and the Ohio Mechanics' Institute in 1828. About the time that this history opens the city was well supplied with private schools, some of them conducted by very able teachers. There were Albert and J. W. Picket, with their successful girls' school; Alexander Kinmont, with his select academy for boys; Mrs. Caroline Lee Hentz and her husband, with their female seminary, and Miss Catherine E. Beecher, who, assisted by her sister Harriet, carried on a school for girls. In 1833 there were 24 private schools in the city, with 38 teachers and 1,230 pupils. The public schools, which had been organized only four years before, had 21 teachers and 2,000 pupils. Cincinnati was foremost in the public-school movement in the West, and it was due to the efforts of a small number of her citizens, more than to any other cause, that the foundations of the Ohio public-school system were laid. Mr. Venable tells us that the years 1832–1837 may be regarded as an era of intellectual activity in Cincinnati and its literary dependencies. In the early part of the century, Lexington, Ky., prided herself on being the "Athens of the West," Transylvania University[1] constituting her principal title to that honor, while Cincinnati, boasting her industrial and commercial superiority, contented herself with the name of "Tyre;" but it was not long until Cincinnati assumed both characters. When we have mentioned the central geographical and commercial position of the city, considered in respect to the transportation facilities of 1830–1840, our characterization is complete.

It was, therefore, natural enough that Cincinnati men should have been the creators of the Western Literary Institute and College of Professional Teachers, and that Cincinnati should have been its home. It was the only city in

[1] Transylvania University, formed by the union of Transylvania Seminary, 1785, and Kentucky Academy, 1774, was chartered to go into operation January 1, 1799. It was the first institution of collegiate rank in the Ohio Valley. Here the degree of B. A. was conferred on three students on October 10, 1806, and the degree of M. D. was conferred on one student in 1820, both the first instances of the kind west of the Allegheny Mountains. "Had the earlier policy pursued been adhered to," says a distinguished Kentuckian, "Transylvania would to-day be one of the leading universities, not only of this country, but of the whole world. It was doomed, however, to be sacrificed upon the inconsiderate altar of denominational antagonisms. Different and opposing religious sects struggled for its control, and in the conflict the university was consumed by the fervor of the contest." (Thomas Speed, secretary of the Filson Club, preface to Transylvania University, its Origin, Rise and Fall. Robert Peter and Johanna Peter, Louisville.) Dr. Peter says the medical department of Transylvania became the second college of medicine in the United States, both in the number of its students and the distinguished reputation of its professors (p. 109). The institution was merged in Kentucky University.

the Mississippi Valley that furnished the conditions essential to such an enterprise.[1]

Three or four facts concerning the membership of the college are very noticeable. One is the total absence of women from the membership. The constitution excluded them by implication, and probably custom would have done so if the constitution had been silent. Women contributed a few papers, on an average about one a year. Another fact is the remarkable number and influence of clergymen in the college. This was due in part to the popular character of the institution, and in part to the fact that the ministerial and teaching functions had not then been separated to the extent that they are to-day. A majority of these ministers of religion were active teachers. Still another fact is the prominence of private school-teachers, which is explained by the place that private schools then held in society as compared with the present time. Finally, public school-teachers are hardly to be identified in the reports. This is one of the most significant facts in the story, suggesting the feeble state of public schools in the West 60 years ago.

It is never possible carefully to measure influence; and least of all the influence of associations educational in their character that hold occasional meetings and put forth occasional publications which, directly or indirectly, bring them into contact with thousands of minds. But in this case we are not likely to err on the wrong side. The college was, if not the first educational association in the West, the first to attract attention and to exert an influence, and so was something of a novelty. It caused laws to be put into statute books and controlled the appointment of State officials. Mention may again be made of the Ohio superintendency.[2] Were it possible to study the biographies of those who comprised the College of Professional Teachers, it would be found that they were in general the leaders of educational thought and effort in their several States and communities.

The conditions under which the college existed throw light upon the questions that engaged the annual conventions, the ardor with which they were discussed, and the character of the discussions. Such papers as some of those contained in the volumes of Transactions would not to-day command the smallest audience for a day's session in the city of Cincinnati. The subjects are not inviting, and the style is not attractive. Other papers are of high excellence, ranking with the best in our early educational annals. If we fail at first to see why these papers produced the effect they did—if we fail to enter into the enthusiasm of Mr. Mansfield—we must recall the mental and moral condition of the auditors. The people who were so deeply stirred were listening, as they thought, to a new gospel, upon which their salvation depended. Once more, if we think some of these old ques-

[1] One is surprised not to find in the Transactions, either in minutes or list of members, the name of Nathan Gilford, known, says Mr. Venable, not only as the apostle of the public-school system in Ohio, but also as publisher, editor, legislator, business man, and general writer. Mr. Coggeshall says of him: "Solomon Thrifty should be revered in Ohio as Poor Richard is in New England. His almanac, edited by Mr. Gilford, and published for seven years in Cincinnati, contributed, in large degree, by facts, arguments, and appeals, to the awakening and support of a public sentiment to which the legislature of 1821 responded when it passed an act for the support and better regulation of public schools," etc. Mr. Gilford was also foremost in founding the public-school system of Cincinnati. (Barnard's American Journal of Education, Vol. VI, p. 83; Vol. VIII, pp. 287–294.)

[2] Mr. W. T. Coggeshall speaks of the college as contributing "largely to the advancement of an educational sentiment which, as early as 1833, demanded teachers' associations, begun to urge the need of a State school department, and in 1835 obtained a resolution from the general assembly appropriating $500 to be paid, by order of the governor, to Calvin E. Stowe, * * * who was about to visit Europe, for the purpose of securing careful examination into and a judicious report upon the elementary school systems of Prussia and other European Governments." Mr. Coggeshall points out in detail the close connection between the college of teachers and the work of organizing the educational forces of Ohio. (Barnard's American Journal of Education, Vol. VI, pp. 81-103.)

tions too obvious for discussion, we must remember that they were then new, and that in the then existing state of opinion nothing could safely be taken for granted. Much the same must be said of some of the ablest addresses. They may appear to us unduly labored, and as abounding in platitudes or pedantry; but they did not originally create any such impression. No one can place a proper valuation upon those old volumes unless he appreciates that they belong to an early stage of a great movement, which was more strongly marked by moral earnestness than by intelligent insight. In respect to common schools the situation was novel. Men were not importing from the East and setting up in the West, as in the case of churches and courts of law, completed institutions; they were seeking to create ideals as well as schools. Everything was in an experimental stage. It was quite in the nature of things for the trustees of the Cincinnati common schools to seek counsel of the College of Teachers. Nobody saw the way clearly, but all were seeking to find it.

The death of this excellent association, which had apparently long passed the dangers of infancy, has never been satisfactorily explained. Mr. Venable ventures no theory. Mr. Mansfield remarks that "the duty of organization and publication, in fact, that of practically sustaining the association, fell mainly on the working teachers of Cincinnati, and for this reason, probably, it ultimately died away and lost its popular character." The history hardly sustains this view. Mr. Mansfield's further remark that the college had "accomplished its object in exciting popular interest in education, and impelling many persons to its support who had the ability and influence to form the present system of public schools in Ohio," is probably nearer the mark. Even if the establishment of the Ohio school system was not as common an object as he represents, the college had no doubt done its peculiar work, while the work that next needed to be done was of another kind and called for different machinery. The time was at hand when, owing to the multiplication of those interested in the subject and improvements in the means of communication, State associations were to be formed and maintained. It was no longer necessary to collect men from a dozen or twenty States in order to hold a successful educational meeting. The present Ohio Teachers' Association was formed in 1847, two years after the college ceased to exist, and there had been a still earlier one similar in character. The whole West north of the Ohio River was soon covered over with educational associations, State, county, and sectional, which no doubt afforded better facilities for doing the work in hand than a distant central organization. In fact, the promotion of such organizations was one of the things that the college existed to accomplish. Reference to local associations and conventions are frequent in its records. In a sense, therefore, the college had done its work too well. For the time, the smaller associations that took its place answered men's purposes, and when they again sought the basis of a larger organization they found it in the country and not in the Mississippi Valley.

The American Institute of Instruction, organized at the same time as the Academic Institute, the forerunner of the college, has lived until the present time, and is now a vital organization; but a slight examination of the history of the two societies shows the conditions surrounding them to have been very different. For one thing, the American Institute, notwithstanding its national name, has been from the first practically a New England association, serving directly a territory not much larger than the State of Ohio; while the College of Professional Teachers, having a name that at once suggested a local habitation embraced twenty States.

CHAPTER XIV.

THE UNITED STATES NAVAL ACADEMY AT ANNAPOLIS—ITS ORGANIZATION AND METHODS OF TRAINING.

By Edward S. Holden, Sc. D., LLD.

Contents.—I. Sketch of the history of the United States Naval Academy.—II. Officers, professors, and instructors attached to the United States Naval Academy in 1897–98.—III. Regulations for the admission of candidates.—IV. The course of instruction.—V. The marking system.—VI. Practical instruction.—VII. The Naval War College and Torpedo School at Newport, R. I.

An examination of the methods of instruction at the United States Naval Academy at Annapolis and of the United States Military Academy at West Point is of importance in a twofold point of view. These Government schools profess to educate, and do educate, hundreds of young men to a considerable degree of intellectual proficiency. The records of the graduates of these schools in civil life abundantly prove this point. They also train their students to a certain special efficiency and competence, which depends in a very large measure on the moral influences exerted at the two academies. The latest proof of the efficient training provided by the United States Naval Academy is afforded by the splendid operations of the fleet commanded by Admiral Sampson in the blockade of Santiago de Cuba in 1898, and in the naval battle fought there under his orders by graduates of the Academy, which resulted in the total destruction of the Spanish vessels opposed to him. Efficiency of this sort is a kind of virtue, and it is only to be obtained by training the whole man—his character as well as his intellect. It is not to be had by intellectual influences alone.

The United States Military Academy at West Point was founded in 1802, nearly a century ago. The United States Naval Academy at Annapolis was founded in 1845. The experiences of these years of peace and the stress of several wars have won for the graduated cadets of these institutions—for the officers of the Army and Navy—the respect and confidence of the American people. If there has been trouble at an Indian agency through unfair and greedy management of the Indians, an Army officer is ordered there to establish peace and fair dealing. It is a practically universal opinion, borne out by statistics, that his administration will be, on the whole, just, intelligent, and strictly honest; that he will conduct himself like a good public servant and a worthy citizen. Corresponding complications with the authorities of small foreign States in Central America, in the West Indies, and among the islands of the Pacific have time and again been adjusted by officers of our Navy without excessive friction and in a satisfactory manner. It is admitted on all hands that the officers of the two services are honest and competent. The officers are the graduated cadets. What, then, is the system of training that produces results which are, on the whole and making every allowance for exceptions, so satisfactory? It is the object of the present chapter to set forth the principles on which the two public Government schools are organized and administered. Especial attention will here be paid to the organization and management of the United States Naval Academy. The

Report of the Commissioner of Education for the year 1891-92, vol. 2, pp. 767-774, contains a reprint of part of an article by the present writer on the United States Military Academy, to which those who are interested are referred. Certain matters are there considered at greater length than in the present chapter.[1]

An inquiry of the sort may have some pertinence at this time, when so much thought is bestowed on the question of the kind of training best fitted for the common (public) schools of the country. The general opinion of the country is very favorable to the public school and its merits and services are fully recognized. At the same time there are many thoughtful men who doubt whether the public schools of the whole land do all that they might to elevate and to confirm moral character, considering the extraordinarily liberal endowments bestowed upon them. Here, then, are two Government schools which do produce, on the whole and in the main, excellent results of the desired kind. May not the administration and organization of these special schools have some lessons of value to the administrators and teachers of the common schools of the whole country?

I. Sketch of the History of the United States Naval Academy.[2]

As early as 1794 an act of Congress prescribed that eight midshipmen should be attached to each vessel of the Navy. They were appointed from civil life by the President, and most of them knew nothing of the theory or practice of navigation. They learned their profession by practicing it from the outset, and they learned it, therefore, under great disadvantages in some respects. On the other hand, they were considered as sailors from the beginning and were taught in the hard school of experience. The Navy has never had better officers than some of these very midshipmen.

About 1802 the midshipmen were instructed on board ship by the chaplain. In 1813 special schoolmasters were appointed for every large ship and each was charged with the instruction of 20 midshipmen. In 1814 the Hon. William Jones, Secretary of the Navy in the Cabinet of President Madison, recommended as follows: "I would suggest the expediency of providing by law for the establishment of a Naval Academy, with suitable professors, for the instruction of the officers of the Navy." The United States Military Academy, proposed as early as 1776, had been founded in 1802 and was in full operation, although it did not take on its present form and methods until 1817.

About 1830 there were three "naval schools," so called, at Boston, New York, and Norfolk, respectively, where midshipmen were under instruction by chaplains and by schoolmasters. In 1835 provision was made for professors of mathematics. Their duty was to teach the midshipmen at sea or at shore stations. The salary attached to the position was respectable and men of ability were appointed. In 1848 the professors were made staff officers of the Navy, and the rank is still continued in the service, although most of the corps are not employed in teaching, but at the United States Naval Observatory, etc. In 1840 Prof. William Chauvenet, a recent graduate of Yale College, was appointed a professor of mathematics. After a short experience at sea, he was ordered to the Naval Asylum at Philadelphia to prepare midshipmen returning from sea service for

[1] It is perhaps worth noting that the writer is a graduate of the United States Military Academy, and that he has held commissions in the Corps of Engineers of the Army and the corps of professors of mathematics in the Navy, and has likewise served as a member of the board of visitors to both the military and the naval school.

[2] Condensed from (*a*) Historical Sketch of the U. S. N. A., by Prof. J. Russell Soley, 1876, 348 pp., 8 vo., and (*b*) Annual Register, U. S. N. A., 1898-'99, pp. 5-8. The United States Naval Academy, by Park Benjamin, New York, 1900, 486 pp., 8vo., was not printed when this chapter was written, but should be referred to by anyone who wishes to obtain a comprehensive view of the training of naval officers.

their examination for the grade of passed midshipmen. Chauvenet had charge of the departments of mathematics and navigation; Lieutenant Ward, U. S. N., of the instruction in gunnery; and Prof. H. H. Lockwood, a graduate of West Point, was associated with them. Chauvenet was a man of first-rate ability as a scholar and as an administrator, and, although he had no real authority, his influence soon made itself felt at the school. The midshipmen in attendance saw the great advantages to be derived from good instruction previous to their examinations for promotion, and it was not long before Chauvenet's proposal to found a Naval Academy for the training of midshipmen was received with favor. The proposal was no new thing. It had been made as early as 1814, as already stated, and had been renewed and enforced by several able Secretaries of the Navy and by many of the best officers. The success of Chauvenet and his colleagues at the school in Philadelphia crystallized opinion and proved the practicability of the project.

In 1845 Hon. George Bancroft became Secretary of the Navy and the plan for a permanent naval academy was proposed to him by various officers and civilians. In particular the success of the recent experiment at Philadelphia was laid before him. On June 13, 1845, Bancroft addressed a letter to the board of examiners of the Naval Asylum at Philadelphia, in which he asked their assistance in maturing a more efficient system of instruction for young naval officers. He suggests Fort Severn (Annapolis) as a suitable site for the school, and remarks that the present term of instruction is too short. "Might it not be well to have permanent instruction and to send all midshipmen on shore to the school?" He asks also for a plan of studies for the proposed school.[1] The United States Naval Academy dates from this time. The board of examiners replied to it from the United States Naval Asylum on June 25, after consultation among themselves, and after hearing the opinions of Chauvenet and of his colleagues on the question of academic organization.

The full and interesting history of the establishment of the Naval Academy may be read in Professor Soley's book, above cited by title. The following paragraphs are taken (with a few changes) from the register of the United States Naval Academy.

The U. S. Naval Academy was formally opened October 10, 1845, under the name of the Naval School, with Commander Franklin Buchanan, U. S. N., as superintendent. It was placed at Annapolis, Md., on the land occupied by Fort Severn, which was given up by the War Department for the purpose. The course was fixed at five years, of which only the first year and the last were to be spent at the school, the intervening three years being passed at sea. This arrangement was not strictly adhered to, the exigencies of the service making it necessary, in many cases, to shorten the period of study. In January, 1846, four months after the opening of the school, the students consisted of 36 midshipmen of the date of 1840, who were preparing for the examination for promotion; 13 of the date of 1841, who were to remain until drafted for service at sea; and 7 acting midshipmen, appointed after September of the previous year. The midshipmen of the date of 1840 were the first to be graduated, finishing their limited course in July, 1846, and they were followed in order by the subsequent dates until the reorganization of the school in 1850.

In September, 1849, the following board was appointed to revise the plan and the regulations of the Naval School:

Commander William B. Shubrick, U. S. Navy.
Commander Franklin Buchanan, U. S. Navy.
Commander Samuel F. Du Pont, U. S. Navy.
Commander George P. Upshur, U. S. Navy.
Surg. W. S. W. Ruschenberger, U. S. Navy.
Prof. William Chauvenet, U. S. Navy (a graduate of Yale).
Capt. Henry Brewerton, U. S. Army, Superintendent U. S. Military Academy, West Point.

[1] A copy of the letter is given in Soley's History of the Naval Academy, p. 43.

The plan reported by the board was approved, and went into operation July 1, 1850. The new organization provided for a course of seven years, the first two and the last two at the school, and the three intermediate years at sea. The school was placed under the supervision of the Bureau of Ordnance and Hydrography of the Navy Department, and its name was changed to the United States Naval Academy. The corps of professors was enlarged, the course was extended, and the system of separate departments with executive heads was fully adopted. It was provided that a Board of Visitors should make an annual inspection of the Academy and report upon its condition to the Secretary of the Navy. A suitable vessel was attached to the Academy as a practice ship, and the annual practice cruises were begun.

After the system had been in operation a year new changes were proposed, and the recommendations of the academic board on the subject were referred to the board of examiners for the year 1851, composed of the following-named officers:

Commodore David Connor, U. S. Navy.
Capt. Samuel L. Breese, U. S. Navy.
Commander C. K. Stribling, U. S. Navy.
Commander A. Bigelow, U. S. Navy.
Commander Franklin Buchanan, U. S. Navy.
Lieut. Thomas T. Craven, U. S. Navy.

The change recommended by the board of examiners, and adopted by the Department, consisted mainly in leaving out the requirement of three years of sea service in the middle of the course, thus making the four years of study consecutive.[1] The practice cruise supplied the place of the omitted sea service, and gave better opportunities for training. The change went into operation in November, 1851, together with other improvements recommended by the board. This system has been continued, with some slight modifications, to the present time. The first class to receive the benefit of it was that which entered in 1851. Six members of this class completed the course in three years and were graduated in June, 1854; the rest of the class followed in 1855.

In May, 1861, on the outbreak of the war, the Academy was moved to Newport, R. I. The three upper classes were detached and ordered to sea, and the remaining acting midshipmen were quartered in the Atlantic House and on board the frigates *Constitution* and *Santee*. In the summer of 1865 the Academy was brought back to Annapolis, where it has since remained.

When the Bureau of Navigation of the Navy Department was established, July 5, 1862, the Academy was placed under its supervision; March 1, 1867, it was placed under the direct care and supervision of the Navy Department, the administrative routine and financial management being still conducted through the Bureau. On the 11th of March, 1869, this official connection with the Bureau ceased, but was renewed by the general order of the Navy Department issued June 25, 1889. These changes in organization are the signs of certain changes of opinion in the minds of the higher officers of the Navy. The judgment of the Navy in general has always been, it is believed, that the affairs of the Academy would be best administered by one of the bureaus of the Navy Department.

The term of the academic course was changed by law, March 3, 1873, from four to six years. The change took effect with the class that entered in the following summer.

In 1866 a class of acting third assistant engineers was ordered to the Academy for instruction. The course embraced the subjects of steam engineering, mechanism, chemistry, mechanics, and practical exercises with the steam engine and in the machine shop. This class was graduated in June, 1868, together with two cadet engineers who had entered the Academy in 1867. After an interval of four years, in October, 1871, a new class of cadet engineers was admitted. This class followed a two years' course, somewhat more extended than that of the class of 1868, and was graduated in 1873. In 1872 and 1873 new classes were admitted, the first of which left the Academy in 1874 and the second in 1875. By an act of Congress approved February 24, 1874, the course of instruction for cadet engineers was made four years instead of two; the new provision was first applied to the class entering the Academy in the year 1874. This class was graduated in June, 1878.

By an act of Congress approved August 5, 1882, it was provided that from that date "there shall be no appointments of cadet-midshipmen or cadet-engineers at the Naval Academy, but in lieu thereof naval cadets shall be appointed from each Congressional district and at large, as now provided by law for cadet midship-

[1] The academic board had always favored this arrangement, but had been overruled by the opinion of certain distinguished officers.—E. S. H.

men, and all the undergraduates at the Naval Academy shall hereafter be designated and called 'naval cadets;' and from those who successfully complete the six years' course, appointments shall hereafter be made as it is necessary to fill vacancies in the lower grades of the Line and Engineer Corps of the Navy and of the Marine Corps: *And provided further*, That no greater number of appointments into these grades shall be made each year than shall equal the number of vacancies which has occurred in the same grades during the preceding year; such appointments to be made from the graduates of the year at the conclusion of their six years' course, in the order of merit, as determined by the academic board of the Naval Academy; the assignment to the various corps to be made by the Secretary of the Navy upon the recommendation of the academic board. But nothing herein contained shall reduce the number of appointments from such graduates below ten in each year, nor deprive of such appointment any graduate who may complete the six years' course during the year eighteen hundred and eighty-two. And if there be a surplus of graduates, those who do not receive such appointment shall be given a certificate of graduation, an honorable discharge, and one year's sea pay, as now provided by law for cadet-midshipmen."

"That any cadet whose position in his class entitles him to be retained in the service may, upon his own application, be honorably discharged at the end of the four years' course at the Naval Academy, with a proper certificate of graduation."

In 1886 a special course of instruction in physiology and hygiene was established, in accordance with an act of Congress approved May 20 of that year.

The act of Congress approved March 2, 1889, provides that "the Academic Board of the Naval Academy shall on or before the thirtieth day of September in each year separate the first class of naval cadets then commencing their fourth year into two divisions, as they may have shown special aptitude for the duties of the respective corps, in the proportion which the aggregate number of vacancies occurring in the preceding fiscal year ending on the thirtieth day of June in the lowest grades of commissioned officers of the Line of the Navy and Marine Corps of the Navy shall bear to the number of vacancies to be supplied from the Academy occurring during the same period in the lowest grades of commissioned officers of the Engineer Corps of the Navy; and the cadets so assigned to the Line and Marine Corps Division of the first class shall thereafter pursue a course of study arranged to fit them for service in the Line of the Navy, and the cadets so assigned to the Engineer Corps Division of the first class shall thereafter pursue a separate course of study arranged to fit them for service in the Engineer Corps of the Navy, and the cadets shall thereafter, and until final graduation, at the end of their six years' course, take rank by merit with those in the same division, according to the merit marks; and from the final graduates of the Line and Marine Corps Division, at the end of their six years' course, appointments shall be made hereafter as it shall be necessary to fill vacancies in the lowest grades of commissioned officers of the Line of the Navy and Marine Corps; and the vacancies in the lowest grades of the commissioned officers of the Engineer Corps of the Navy shall be filled in like manner by appointments from the final graduates of the Engineer Division at the end of their six years' course: *Provided*, That no greater number of appointments into the said lower grades of commissioned officers shall be made each year than shall equal the number of vacancies which shall have occurred in the same grades during the fiscal year then current; such appointments to be made from the final graduates of the year, in the order of merit as determined by the Academic Board of the Naval Academy, the assignment to be made by the Secretary of the Navy upon the recommendation of the Academic Board at the conclusion of the fiscal year then current; but nothing contained herein or in the naval appropriation act of August fifth, eighteen hundred and eighty-two, shall reduce the number of appointments of final graduates at the end of their six years' course below twelve in each year to the Line of the Navy, and not less than two shall be appointed annually to the Engineer Corps of the Navy, nor less than one annually to the Marine Corps; and if the number of vacancies in the lowest grades aforesaid occurring in any year shall be greater than the number of final graduates of that year the surplus vacancies shall be filled from the final graduates of following years as they shall become available."

"That after the fourth day of March, eighteen hundred and eighty-nine, the minimum age of admission of cadets to the Academy shall be fifteen years and the maximum age twenty years."

It appears from the foregoing that the policy of the Naval Academy has not been, on the whole, as stable as that of the Military Academy at West Point.

The main reasons for the difference are: First, that the Naval Academy has had no single organizer of ability, authority, and of long service like Colonel Thayer; second, that its Academic Board is not composed of permanent officials, but of officers who serve for comparatively short terms.

In October, 1897, a post-graduate course in Naval Architecture, for the education of officers for the Construction Corps of the Navy, was established; and a class was formed from the naval cadets that had finished the four years' course in that year. On May 1, 1899, this course was discontinued and some of the students who were pursuing the course at Annapolis have been sent abroad to Paris and to Glasgow to continue their studies. While this may be a satisfactory course for the present, it is not likely that a permanent policy of this kind will be followed. Post-graduate professional courses are so necessary for the education of experts in shipbuilding, ordnance, etc., that it seems likely some permanent plan will be found by which they can be given in America.

During the first fifty years of the existence of the Naval Academy (1845–1895) there have been received into it as students 4,320 young men, exclusive of the various classes of midshipmen sent to the Academy from the general service, in its earlier years, for periods of instruction. Of the 4,320 who have been admitted there remained in the service on July 1, 1895—

On the active list	873
On the retired list	111
Naval cadets	243
Total	1,227

"The total number of graduates, including the midshipmen of the date of 1840 and including the class of 1899, is 2,420. * * * The proportion of those who have been graduated to those who entered is a little short of 44 per cent. This ratio is, at the present time, considerably augmented, and sometimes exceeds 50 per cent of the entire number of graduates, including those of the early dates, about 51 per cent are still (1900) in active service in the Navy, 6 per cent are on the retired list, 24 per cent are dead, and 19 per cent have left the Navy and are in active civil pursuits. The total cost of the Naval Academy to the country (sum of all appropriations, including the year 1898) has been in round numbers, $8,000,000. That is about 25 per cent more than the amount paid for a single battle ship, such as the *Indiana* or the *Iowa*. Its average yearly cost is about $197,000. The yearly expense of keeping the cruiser *New York* in commission is about $400,000. From this it will be observed that the average yearly cost of maintenance of the Naval Academy has been about one-half of that required for a single large cruiser." (Park Benjamin: The United States Naval Academy, 1900, page 344.)

II. Officers, Professors, and Instructors Attached to the United States Naval Academy in 1897–98.

1 rear-admiral, Superintendent.

1 lieutenant-commander, assistant to superintendent, in charge of buildings and grounds.

1 lieutenant-commander, assistant to Superintendent, secretary of Academic Board.

Department of Discipline (5 officers).

1 commander, Commandant of Cadets.

4 lieutenants, assistants to Commandant.

DEPARTMENT OF SEAMANSHIP (3 OFFICERS).

1 lieutenant, head of department.
2 lieutenants, assistants.

DEPARTMENT OF ORDNANCE (3 OFFICERS).

1 lieutenant-commander, head of department.
2 lieutenants, assistants.
1 swordmaster; 2 assistant swordmasters (3 civilians).

DEPARTMENT OF NAVIGATION (3 OFFICERS).

1 lieutenant-commander, head of department.
2 lieutenants, assistants.

DEPARTMENT OF STEAM ENGINEERING AND DRAWING (7 OFFICERS, 1 CIVILIAN).

1 chief engineer, head of department.
1 chief engineer, assistant.
4 passed assistant engineers, assistants.
1 assistant professor, assistant.

DEPARTMENT OF MECHANICS (2 OFFICERS, 1 CIVILIAN).

1 commander, head of department.
1 lieutenant, assistant.
1 professor, assistant.

DEPARTMENT OF PHYSICS (2 CIVILIANS, 3 OFFICERS).

1 professor, head of department.
2 lieutenants, assistants.
1 ensign, assistant.
1 professor, assistant.

DEPARTMENT OF MATHEMATICS (1 PROFESSOR U. S. N., 4 OFFICERS).

1 professor U. S. N., head of department.
3 lieutenants, assistants.
1 ensign, assistant.

DEPARTMENT OF ENGLISH (4 OFFICERS, 2 CIVILIANS).

1 lieutenant-commander, head of department.
3 lieutenants, assistants.
2 professors, assistants.

DEPARTMENT OF LANGUAGES (1 OFFICER, 4 CIVILIANS).

1 lieutenant, head of department.
3 professors, assistants.
1 assistant professor, assistant.

IN CHARGE OF POST-GRADUATE COURSE OF NAVAL CONSTRUCTION (1 OFFICER).

1 naval constructor.

IN CHARGE OF SPECIAL INSTRUCTION IN PHYSIOLOGY AND HYGIENE (1 OFFICER).

1 passed assistant surgeon.

INSTRUCTOR IN PHYSICAL TRAINING (1 CIVILIAN).

1 instructor.

OFFICERS NOT ATTACHED TO THE ACADEMIC STAFF.

1 librarian (professor U. S. N.).

Other officers serving at Annapolis are not noted here, as they have no direct relation to instruction or to academic affairs.

Total number of officers giving instruction (including officers in charge of administration of academic affairs and of the library), 53.

Total number of (undergraduate) naval cadets under instruction, 280.

One instructor to every 5.3 undergraduates.

Attention is called to the large number of instructors relative to the number of students. The thoroughness of the training at the United States Naval Academy and at West Point depends mainly on this relation. A large number of able officers are available. The attention paid to each student is constant. The work of the students is necessarily thorough. It should be remarked, in passing, that it is an admirable training for an officer who has spent several years at sea to serve at Annapolis as instructor, among other men of intelligence, and in an academic atmosphere. The instructors who are placed in these positions are greatly stimulated. It is, therefore, of great use to the Navy at large, as well as to the Naval Academy, to have as many young officers as can well be spared detailed for duty at Annapolis.

The departments of instruction at the United States Naval Academy fall naturally into two groups.

First. The departments of mechanics, mathematics, physics, English (including history and international law), languages (French and Spanish), drawing.

Second. The departments of discipline, seamanship, ordnance, navigation, steam engineering.

In the first group the fundamental principles and the processes are practically unchanging, and it is of the greatest importance that the instruction in these subjects should be uniform from year to year and from class to class. In the opinion of many persons (of whom the writer is one) this can best be effected by providing permanent heads to the departments of this group, precisely as at the United States Military Academy at West Point. The first selections should be made from officers of the service who have shown especial aptitudes. The duties of heads of departments should be to supervise the instruction of the whole class and to see that the teaching of the assistant instructors conforms to a well-considered plan, formulated by the head of the department, and approved by the Academic Board. By such a supervision it is insured that a consistent scale of marking in each subject is maintained throughout the class. If this very desirable change is made, it should be arranged that the positions of heads of department are in fact, as well as in name, permanent.

The second group of subjects is professional in character. The fundamental principles are those of mechanics, mathematics, physics, etc., but the practice (as of ordnance, steam engineering) varies from time to time as processes are perfected. It is of importance that the heads of these departments should present the very latest developments of naval science and practice, and such heads should be detailed (as now) from the most accomplished officers of the service. Their terms of service should be long—never less than three years—it would seem. Under such a plan the Academic Board would always include at least six permanent members, and this would insure a steady and consistent policy in all intellectual matters. Fresh blood and ideas would be brought into the Board by periodical appointments of the heads of the professional departments. A close touch between the Academy and the service at large would still exist as at present.

III. Extracts from the Regulations Governing the Admission of Candidates into the Naval Academy as Cadets.

NOMINATION.

I. The students at the Naval Academy shall be styled Naval Cadets.

II. There shall be allowed at said Academy one naval cadet for every Member or Delegate of the House of Representatives, one for the District of Columbia, and ten at large: *Provided, however*, That there shall not be at any time more in said academy appointed at large than ten.

III. The course of naval cadets is six years—four years at the Naval Academy and two years at sea, at the expiration of which time the cadet returns to the academy for final graduation, and the district then becomes vacant.

V. "The Secretary of the Navy shall, as soon after the fifth of March in each year as possible, notify, in writing, each Member and Delegate of the House of Representatives of any vacancy that may exist in his district. The nomination of a candidate to fill said vacancy shall be made upon the recommendation of the Member or Delegate, if such recommendation is made by the first day of July of that year; but if it is not made by that time the Secretary of the Navy shall fill the vacancy by appointment of an actual resident of the district in which the vacancy exists, who shall have been for at least two years immediately preceding the date of his appointment an actual and bona fide resident of the district in which the vacancy exists and of the legal qualification under the law as now provided. The candidate allowed for the District of Columbia and all the candidates at large shall be selected by the President. (Rev. Stat., § 1514.)

VI. "Candidates allowed for Congressional districts, for Territories, and for the District of Columbia must be actual residents of the districts or Territories, respectively, from which they are nominated. And all candidates must, at the time of their examination for admission, be between the ages of fifteen and twenty years, and physically sound, well formed, and of robust constitution." (Rev. Stat., § 1517.)

VII. Candidates who may be nominated in time to enable them to reach the Academy by the 15th of May will receive permission to present themselves on that date to the Superintendent for examination for admission. Those who may not be nominated in time to present themselves at the May examination will be examined on the 1st of September following.

No leave of absence will be granted to cadets of the fourth class.

EXAMINATION.

VIII. "All candidates for admission into the Academy shall be examined according to such regulations and at such stated times as the Secretary of the Navy may prescribe. Candidates rejected at such examination shall not have the privilege of another examination for admission to the same class unless recommended by the board of examiners." (Rev. Stat., § 1515.)

IX. "When any candidate who has been nominated upon the recommendation of a Member or Delegate of the House of Representatives is found, upon examination, to be physically or mentally disqualified for admission, the Member or Delegate shall be notified to recommend another candidate, who shall be examined according to the provisions of the preceding section." (Rev. Stat., § 1516.)

X. Candidates will be examined physically by a board composed of three medical officers of the Navy at the Naval Academy.

Any disease, deformity, or result of injury that would impair efficiency will be sufficient to cause the rejection of a candidate.

XI. Candidates will be examined mentally by the academic board in reading, writing, spelling, arithmetic, geography, English grammar, United States history, world's history, algebra through quadratic equations, and plane geometry. Deficiency in any one of these subjects may be sufficient to insure the rejection of the candidate.

GENERAL CHARACTER OF THE MENTAL EXAMINATION.

Reading and writing.—Candidates must be able to read understandingly, and with proper accent and emphasis, and to write legibly, neatly, and rapidly.

Spelling.—They must be able to write, from dictation, paragraphs from standard pieces of English literature, both prose and poetry. The spelling throughout the examination will be considered in marking the papers.

Punctuation and capitals.—They must be familiar with the rules for punctuation and for the use of capitals.

Grammar.—Candidates must exhibit thorough familiarity with English grammar.

Geography.—Candidates will be required to pass a satisfactory examination in descriptive geography, particularly of our own country.

United States history.—The examination in this branch will include questions concerning the early settlements in this country; the forms of government in the colonies; the causes, leading events, and results of wars; and prominent events in the history of our Government since its foundation.

World's history.—Candidates must be familiar with the general history of the world, including the rise and the fall of empires and of dynasties; changes in territory as the result of wars or from other causes: the most important treaties of peace; the relations between church and state in different countries; in brief, such information as may be found in the ordinary general histories.

Arithmetic.—The candidates must possess such a complete knowledge of arithmetic as will enable them to proceed at once to the higher branches of mathematics without further study of arithmetic.

Algebra.—The examination in algebra will include questions and problems upon the fundamental rules, factoring, greatest common divisor, least common multiple, algebraic fractions, equations of the first degree with one or more unknown quantities, simplification of expressions involving surds, and the solution and theory of quadratic equations.

Geometry.—In geometry candidates will be required to give accurate definitions of terms used in plane geometry; to demonstrate any proposition of plane geometry as given in the ordinary text-books, and to solve simple geometrical problems, either by a construction or by an application of algebra.

ADMISSION.

XII. Candidates that pass the physical and mental examinations will receive appointments as naval cadets, and become students of the Academy. Each cadet will be required to sign articles by which he binds himself to serve in the United States Navy eight years (including his time of probation at the Naval Academy), unless sooner discharged.

The pay of a naval cadet is $500 a year, commencing at the date of his admission.

It will be noticed that the entrance examination is a very elementary one. The cadets are appointed from every Congressional district in the United States, and the requirements have been kept low in order to insure that no injustice should be done to cadets appointed from districts where the educational facilities are not high. In order to do this justice to a few individual cadets, the country at large has been made to suffer. If the subjects of solid geometry and of plane trigonometry were added to the requirements, it would work no real hardship to the candidates, and it would be a great benefit to the Academy.

The subjects might be rapidly reviewed by the cadets during their fourth-class course. The consequent saving of time would materially lighten the work of the cadet during his academic course, which is very desirable. The time saved in this way should not, it appears to the writer, be devoted to theoretical work, but to practical and professional exercises.

The best opinion seems to be that the age at entrance should be from 15 to 18 years, not from 15 to 20, as at present.

The following extracts from the report of the Superintendent of the United States Naval Academy for 1897 present interesting statistics, and comments upon them which are especially valuable in this connection:

"The table following exhibits the number of cadets on probation at the Naval Academy on October 1, 1896, and again on June 5, 1897, after the annual examination, with the ensuing casualties:

Class.	October 1, 1896.	June 5, 1897.	Loss.
			Per cent.
First, line division	38	37	2½
First, engineer division	13	11	15
Second	48	40	17
Third	60	54	10
Fourth	95	70	26
	254	212	16¼

Number of cadets at the Academy October 1, 1897	259
Graduated June 4, 1897	47
Resigned	41
Dropped	1
Transferred to lower class by reason of physical disability	6
Transferred to higher class, having qualified	2
Entered May, 1897	37
Entered September, 1897	59

In May 59 candidates reported for examination, of which number 33 passed, 1 of whom was rejected for physical disqualification.

In September 104 candidates reported for examination, of which number 61 passed, 2 of whom were rejected for physical disqualification.

The record shows that 60 per cent of the candidates successfully passed the mental examinations, a larger percentage than has been the case for many years, which, in itself, is an encouragement. A much larger percentage of candidates would undoubtedly be successful if the oft-repeated recommendation were adopted to grant the permits to candidates a year in advance, and making it an absolute rule that there shall be but one examination each year for admission, which should be in May.

Several advantages would thereby accrue to the service as well as to the candidates; a longer time for preparation, a saving of money to the candidates by an avoidance of a special course of preparation, a more substantial preparation than can be given by the cramming system now in vogue, which leads to momentary success, but eventual impoverishment of mental faculties; and, lastly, the Academy would have the entire class as a homogeneous body for practical training through the summer months, whereas under the present system but one-third of the members of the fourth class have this valuable training. It is my opinion that no more important reform can be made than this to enhance the efficiency of the Naval Academy.

The routine of practical exercises followed by the fourth class from the middle of May until the opening of the academic year on October 1 is shown below:

8.30 to 10.00 a. m. Setting up drill in the armory.
10.20 to 12.00 m. Swimming drill in the natatorium until the cadets are proficient. For all who are proficient in swimming this period is given to marline-spike seamanship and other practical work in the rigging and sail lofts.
4.00 to 6.00 p. m. Drill in the cutters with oars and under sail.
8.00 to 9.00 p. m. Gymnasium drill.

No more efficient system can be devised for preparing the sound body to enter upon the academic work which is to develop the sound mind. Moreover, those who have this training attain a familiarity with the water and with handling boats, which advantage will abide with them through their professional lives.

From this experience are debarred all those candidates held back for a later examination, or those who do not receive their permits to appear until after July 1, all of whom should not be allowed to report until the following May.

In this connection it may be remarked that many naval cadets served during the Spanish-American war of 1898 on board of war vessels. An experienced sea officer reports that he did not see a single naval cadet attached to the North Atlantic Squadron who could handle a boat properly in a strong tideway or in a heavy sea. Their boat work indicated a lack of practice. It is noteworthy that the sports of the cadets at the Academy are less nautical than one would suppose they should be. Baseball and football excite at least as much interest as rowing and sailing.

What we may call the college spirit is said to be developed at the expense, perhaps, of the professional naval spirit. If this is so, it is a matter deserving attention.

The examinations in all departments of the Academy are now conducted in writing only, it is believed. It seems to be quite clear that an important part of every examination should be oral. The justice and impartiality of the instructors is beyond question and need no written vouchers. Written examinations serve very well for tests of certain qualities, but one can not learn to reef topsails on a sheet of foolscap. Oral examinations test other points besides mere intellectual

proficiency, and it is these very points which are especially valuable to a service like the Navy.

Every moment of the cadet's life should impress upon him his special relation to professional life. In general, it is believed that this is effectively done. It is possible that even more attention should be paid to seamanship, using the term in its widest sense.

Seamanship can not be taught alone by precept, and it is impossible to create a lively interest without possessing suitable instruments.

The Naval Academy should have two vessels of moderate size and so handy that practice under way can be had throughout the year. These vessels should be * * * sailing vessels, with no steam appliances on board.

The quick judgment, the readiness of resource, and the unfailing nerve required of our naval officers in the management of modern men-of-war can only be developed through the teaching of seamanship, and that on board sailing vessels. The argument that seamanship is no longer necessary in these days of steam and of mastless ships is a grievous mistake; but the art must be taught in youth. It should still be the foundation stone of this institution. (Extract from the report of the Superintendent United States Naval Academy, 1895.)

There is, perhaps, too much time devoted to infantry drills compared to the time devoted to drills in seamanship, gunnery, etc.

IV. SUMMARY OF THE COURSE OF INSTRUCTION.

ASSIGNMENT OF TIME.

A term is four months. The numbers in the table show the number of recitations per week. F stands for Friday, from 7.30 to 9.30 p.m.

Departments.	Fourth class.		Third class.		Second class.		First class, line division.		First class, engineer division.	
	First term.	Second term.	First term.	Second term.	First term.	Second term.	First term.	Second term.	First term.	Second term.
Seamanship					1	1	3	4		3¾
Ordnance							3	5		
Navigation						2	4	4		
Steam engineering					3	3			10	10¾
Mechanics					5	4¼	3		3	
Physics				4 F.	4	4	3		3	
Mathematics	6	5	5	5						
English	5	5	4	2	1	1		2		¼
Languages	5	5½	3	2	1 F.	1 F.				
Drawing			4	2¼	2					
Special instruction.										
Physiology and hygiene								¼ F.		¼ F.

This table can be reduced so as to show the number of recitations per week per one term, and it will then exhibit the relative amount of time devoted to each subject by naval cadets of the line division and of the engineer division, respectively, as follows:

Study.	Relative amount of time.		Study.	Relative amount of time.	
	Line division.	Engineer division.		Line division.	Engineer division.
Seamanship	9	5¾	English	20	18¼
Ordnance	8		Languages	17¼	17¼
Navigation	10	2	Drawing	8¼	8¼
Steam engineering	6	23¾	Physiology	¼	¼
Mechanics	12¼	12¼			
Physics	15	15	Total	127	129
Mathematics	21	21			

DETAILS OF THE COURSE OF INSTRUCTION.

[Reference books are marked (*).]

FIRST YEAR—FOURTH CLASS.

FIRST TERM.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Mathematics	4	4	Algebra: Fundamental operations; reduction and conversion of fractional and surd quantities: reduction and solution of equations of the first and second degrees; inequalities; involution and evolution; arithmatical, geometrical, and harmonical progression.	Hall and Knight's Elementary Algebra. Hall and Knight's Higher Algebra. Todhunter's Algebra.*
	2	4	Geometry: Geometry of the straight line, of the circle, and of the plane; theory of proportion; properties of similar figures.	Chauvenet's Geometry.
English	2	4	English: The structure and historical development of the English language; syntax; analysis of sentences; punctuation and capitals; exercises in the composition of letters.	Whitney's Essentials of English Grammar. Hart's Punctuation. Buehler's Practical Exercises in English.* Webster's Dictionary.*
	3	4	History: Outlines of history, especially the history of Greece and Rome, and of the states of western Europe; historical geography; important points in naval history, by notes.	Swinton's Outlines of the World's History. Labberton's Historical Atlas.*
Languages	5	4	French: By "The Natural Method;" pronunciation drill on the sounds of vowels and the articulations of consonants with their combinations; verb drill on the auxiliaries, the conjugations and the irregulars; lecture, questionnaire, grammaire, and dictée on practical subjects.	Méthode Néel—Le Premier Livret avec Tableaux Muraux. Marion's Le Verbe en Quatre Tableaux Synoptiques. Bercy's Le Français Pratique. Bellow's French-English and English-French Dictionary.*

SECOND TERM.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Mathematics	3	4	Algebra: Course for first term continued. Development of algebraic functions by means of indeterminate coefficients and the binomial theorem; permutations and combinations; theory of probability; summation of series; continued fractions; logarithms and the use of tables; exponential equations; theory of equations, including the solution of numerical equations; determinants.	Hall and Knight's Higher Algebra. Gauss's Logarithms.
	2	4	Geometry: Course for first term continued. Spherical geometry; the cone and the cylinder; mensuration of rectilinear figures, and of the sphere, cone, and cylinder; application of algebra to determinate geometry.	Chauvenet's Geometry.
English	2	4	English: Words, sentences, and paragraphs; exercises in the composition of letters and telegrams. Themes.	A. S. Hill's Foundations of Rhetoric. Buehler's Practical Exercises in English.* Webster's Dictionary.*
	3	4	History: Progress of colonial development in America, and the history of the United States; important points in the naval history of the United States by notes or lectures.	Eliot's History of the United States. Mitchell's Atlas.*

Details of the course of instruction—Continued.

FIRST YEAR—FOURTH CLASS—Continued.

SECOND TERM—continued.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Languages	5½	4	French: By "The Natural Method." Course of the first term continued.	Bercy's Le Français Pratique. Bercy's Lectures Faciles avec Notes Grammaticales et Explicatives. Marion's Le Verbe.
			Spanish: By "The Natural Method." Given as an advance course, with same subjects as in French.	Worman's First Book in Spanish. Cortina's Verbos Españoles. Pocket Dictionary, English-Spanish, Tauchnitz edition.*

SECOND YEAR—THIRD CLASS.

FIRST TERM.

Mathematics	1	4	Descriptive geometry: Orthographic projections, representation of points, lines, and planes; problems relating to the right line and the plane; representations of surfaces of the second order; projections of the sphere.	Church's Descriptive Geometry. Rittenhouse's Exercises in Descriptive Geometry Drawing.
	4	4	Trigonometry: Measures of arcs and angles; trigonometric functions; analytical investigations of trigonometric formulas, with their application to all the cases of plane and spherical triangles; construction and use of trigonometric tables; inverse trigonometric functions; De Moivre's theorem; solution of trigonometric equations; practical applications of trigonometry to the solution of plane and spherical triangles, the astronomical triangle, and the measurements of heights and distances.	Chauvenet's Trigonometry. Bowser's Trigonometry. Gauss's Logarithms.
English	2	4	English: Rhetoric and composition; choice and use of words; kinds of composition; narration and description; argumentative composition; exercises in the composition of official dispatches, letters, and telegrams. Themes.	A. S. Hill's Principles of Rhetoric. Buehler's Practical Exercises in English.* Webster's Dictionary.*
	2	4	Law: The Constitution of the United States.	Andrew's Manual of the Constitution.
Languages	3	4	French: By "The Natural Method." Reading comedies and reciting the parts from memory; writing anecdotes from dictation; sea terms and phrases: personnel: organization; distinguishing flags; honorary distinctions; uniforms; ceremonies and salutes of the French and English navies.	Modern French Comedy. College series. Picard et Freemantle. Langage Marin: Connaissances utiles aux officiers des Marines de France et d'Angleterre.
			Spanish: By "The Natural Method." Continued and given as an advanced course.	Modern Spanish Comedy. Sea Terms and Phrases. (Departmental pamphlet.) Knapp's Spanish Grammar.*

Details of the course of instruction—Continued.

SECOND YEAR—THIRD CLASS—Continued.

FIRST TERM—continued.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Drawing	4	4	Mechanical drawing: Sketching from models; the use of instruments; construction of scales; notation and symbols used in mechanical drawings; construction of rectilinear and curved figures to scale; drawing section lines; round writing. Drawing exercises in descriptive geometry, including the projections of lines and the representation of planes and geometrical solids, and the projections and sections of surfaces and solids.	Faunce's Mechanical Drawing. Rittenhouse's Exercises in Descriptive Geometry Drawing.
			SECOND TERM.	
Physics	4	4	Physics: An elementary course intended to present the leading principles and the correlation of the branches of physical science, to which more time is devoted during the second and first class years. Constant practice with the fundamental and derived units of the C. G. S. system. Practical work in the physical laboratory; experiments illustrating the daily recitations and exact measurements of length, mass, volume, and specific gravity. Lectures.	Daniell's Principles of Physics. Practical Physics by Stewart and Gee.
			Chemistry: Recitations in general and organic chemistry. Practical work in the chemical laboratory; experiments illustrating the daily recitations and the determination of simple salts, acids, and bases. Lectures.	Remsen's General Chemistry. Lecture Notes.
Mathematics	5	4	Stereographic Projections and Solutions of the "Astronomical Triangle." Analytical geometry: Equations of the straight line and of the conic sections; transformation of coordinates; properties of the conic sections; equations to tangents and normals; determination of loci: discussion of the general equation of the second degree.	Hendrickson and Dresel's Stereographic Projections. C. Smith's Conic Sections.
English	2	4	English: Classification of words; definition of words by usage and by derivation; synonyms; laws of change in the meaning of words; faults in diction and their remedies; selection and arrangement; elementary principles of reasoning; principles of composition; exercises in the composition of official dispatches, letters, and telegrams. Themes.	Abbott and Seeley's English Lessons for English People. Abbott's How to Write Clearly. Buehler's Practical Exercises in English.* Webster's Dictionary.*
Languages	2	4	French: Course of the first term continued. Spanish: Course of the first term continued.	Same as for the first term.
Drawing	2½	4	Mechanical drawing: Sketching from models; representation of objects by projections; drawing the projections of models to scale; oblique projections; drawing screws, bolts, nuts, and gearing; round writing.	Faunce's Mechanical Drawing.

Details of the course of instruction—Continued.

THIRD YEAR—SECOND CLASS.

FIRST TERM.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Seamanship	1	4	Seamanship: Use of the compass, lead, and log; signals; blocks and tackles; running rigging; description and use of sails and their fittings; purchasing weights; boats and their management; ground tackle; handling anchors; handling sails; port drills and evolutions; management under sail; duties of naval cadets; rules of the road.	Luce's Seamanship. Department circulars.
Steam engineering.	3	4	Principles of mechanism: Conversion of circular into reciprocating motion; link work; conversion of reciprocating into circular motion; the teeth of wheels; the use of wheels in trains; aggregate motion; truth of surface and the power of measurement; miscellaneous contrivances.	Goodeve's Elements of Mechanism. Gow's Notes and Problems in Elementary Mechanism.
Mechanics	5	4	Differential calculus: Functions; rates; differentials of functions; indeterminate forms; series; maxima and minima; geometrical applications; functions of two or more variables.	Rice and Johnson's Differential Calculus.
			Integral calculus: The methods of integration; definite integrals; quadrature of surfaces; cubature of volumes; rectification of curves; centers of gravity; moments of inertia; planimeters; rules for approximate determination of the areas and volumes.	Johnson's Integral Calculus.
Physics	4	4	Physics: Recitations on simple harmonic motion; wave motions, sound, light, and heat. Practical work in the physical laboratory; experiments illustrating the daily recitations, and some exact measurements, such as the determination of the candlepower of gas and electric lights, index of refraction of glass prisms and lenses and of liquids, focal length of lenses; length of light waves. Photography.	Daniell's Principles of Physics. Ganot's Physics. Stewart's Treatise on Heat. Practical Physics, by Stewart and Gee. Kohlrausch's Physical Measurements. Lecture Notes.
			Chemistry: Short course in chemical analysis.	Stoddard's Outline of Qualitative Analysis for Beginners.
English	1	4	History: The history of the United States Navy.	Maclay's History of the United States Navy.
Languages	1	4	French: Conversation upon articles and paragraphs selected from newspapers.	Le Courrier des Etats-Unis. Langage Marin—continued.
			Spanish: Same	Las Novedades.
Drawing	2	4	Mechanical Drawing: Drawing gearing; sketching machinery and making working drawings; round writing; tracings and blue prints of drawings. Topographical and isometrical drawing exercises.	Tomkin's Machine Construction. Faunce's Mechanical Drawing.

Details of the course of instruction—Continued.

THIRD YEAR—SECOND CLASS—Continued.

SECOND TERM.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Seamanship	1	4	Course of the first term continued	Same as for the first term.
Navigation	2	4	The Celestial Sphere: Spherical and rectangular coordinates; use of instruments, especially those for determining terrestrial latitudes and longitudes; refraction; dip; parallax; the earth, sun, planets, and solar system in general; different units of time and calendars; laws of universal gravitation, precession, nutation, and aberration; the moon; eclipses and occultations; tides; comets and meteoric bodies; fixed stars; nebulæ; motion of the solar system; solutions of the astronomical triangle; use of the Nautical Almanac. Dead reckoning and "day's work."	White's Astronomy. Bowditch's Navigator. American Ephemeris and Nautical Almanac.
Steam engineering.	3	4	Marine Engines: Early history and progress of marine engineering; work and efficiency; nature and properties of heat; application of heat to water; combustion of coal and economy of fuel; arrangement and efficiency of boilers; fittings and mountings of boilers; corrosion and preservation of boilers; efficiency of the steam; methods of increasing the expansive efficiency of steam; compound engines; condensation of steam; regulating and expansion valves and gear; slide valves and fittings; starting and reversing gears; cylinders and their fittings; condensers and fittings; rotatory motion; details of compound and triple-expansion engines; propulsion, screw propellers; the indicator and indicator diagrams; auxiliary machinery and fittings.	Sennett's Marine Steam Engine. Marine Engines: Problems, Notes, and Sketches. 1895.
Mechanics	4½	4	Mechanics: Kinematics; statics; kinetics; the motion of projectiles; friction and other resistances; the application of mechanical principles to simple machines and to instruments.	Johnson's Mechanics.
Physics	4	4	Physics: Recitations in light and heat concluded. Electricity and magnetism commenced. Practical work in the physical laboratory; calibration of thermometers; determination of the hygrometric state of the atmosphere; measurements of the coefficients of expansion and the specific heat and latent heat of various substances; other experiments illustrating the course of study and leading to the skillful use of instruments of precision. Photography. General experiments illustrating the phenomena of statical and voltaic electricity; setting up and comparing galvanic cells and secondary batteries; measuring their resistance and electro-motive force; calibration of galvanometers; determination of dip and horizontal intensity.	Same as for first term. Thompson's Electricity and Magnetism. Ayrton's Practical Electricity. Day's Exercises in Electrical Measurements. Lecture notes.
English	1	4	History: The history of the United States Navy.	Maclay's History of the United States Navy.
Languages	1	4	Course of the first term continued	Same as first term.

Details of the course of instruction—Continued.

FOURTH YEAR—FIRST CLASS—LINE DIVISION.

FIRST TERM.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Seamanship	3	4	Seamanship: Stowage and organization; boats and their management; ground tackle; handling anchors; handling sails; management under sail and under steam; turning and maneuvering; wharfing, docking, towing, anchoring, mooring, etc.; emergencies; port drills and evolutions; duties of officers and crew; routine; rules of the road; laws of storms and management in cyclones; use of sounding machine.	Luce's Seamanship. Department Circulars. Navy Regulations.
			Naval Tactics: Organization of the fleet; school of the ship, section, and squadron; evolutions of the fleet; signaling by Army and Navy code; Navy and International codes of flag signals.	Navy and International Signal Books. Fleet Drill Book (Navy Department).
Ordnance	3	4	Drill Regulations for Infantry and Artillery: Schools of the squad, company, battalion, and brigade, in close and extended orders; street-riot drill; ceremonies; arm and away boats.	Drill Regulations for Infantry, Artillery, and Arm and Away Boats, United States Navy, 1898.
			Gunnery Drill: Distribution of the crew to the guns and other stations; duties of officers and men; drill of guns of the main and secondary batteries.	Gunnery Drill Book for the New Armaments.
			Clear Ship for Action	General Instructions; Clearing Ship for Action, 1896.
			Guns and Gun Mounts: Metals used in their construction; description and manufacture of service guns and their mounts for main and secondary batteries; nomenclature, care, and preservation of the ordnance outfit.	Text-book of Ordnance and Gunnery. Descriptions of Modern Ordnance and Modern Gun Mounts.
Navigation	4	4	The Theory and Practice of Navigation, including instruction in the duties of the navigator, the construction and use of navigating instruments, the use of tables, and the solution of problems; determination of meridian distances.	Chauvenet's Spherical and Practical Astronomy.* Coffin's Navigation. Bowditch's Navigator. American Ephemeris and Nautical Almanac.
			Hydrographic Surveying: The instruments used; selection and measurements of bases; determination of azimuth of base; triangulation; determination of heights; leveling; plotting a survey; hydrographical-surveying; tidal observations; current observations; sailing directions; the form of the earth, with special reference to the construction of charts; projections; running surveys.	Phelps's Practical Marine Surveying. Projection Tables. Craig's Azimuth.*
Mechanics	3	4	Method of Least Squares: The theory of least squares and probable errors; fundamental principles of the theory; practical methods and formulas; independent observations; conditioned observations.	Johnson's Method of Least Squares.
			Hydromechanics	Bowser's Hydromechanics.
			Applied Mechanics: Strength of materials; elasticity; stress and strain; theory of structures; strength and deflection of beams; beams of uniform resistance.	Cotterill and Slade's Lesson in Applied Mechanics. Cotterill's Applied Mechanics.

Details of the course of instruction—Continued.

FOURTH YEAR—FIRST CLASS—LINE DIVISION—Continued.

FIRST TERM—continued.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Physics	3	4	Physics: Recitations in electricity and magnetism; practical work in physical laboratory; determination of the constants of galvanometers; testing ammeters and voltmeters; running dynamos and electric motors and measuring their efficiency; experiments on the electric transmission of energy; testing cables and electric-light wires; experiments upon induction; practice in photography and microphotography.	Same as for the second-class year. Thompson's Dynamo Electric Machinery. Lecture Notes.
			SECOND TERM.	
Seamanship	4	4	Naval Construction: Definitions: history and practice of shipbuilding in iron and steel; systems of construction, subdivision, and armoring; systems of pumping, draining, ventilating, steering, and hoisting; fittings in general; distribution of armor, guns, and boats; special constructions; launching; types of ships; structural strength and strains; buoyancy and stability in the intact and the damaged conditions; theory and observation of waves; rolling and pitching; principles of stowage; resistance, propulsion, and steering of ships; qualities of ships; construction and use of diagrams of qualities; the use of qualities; steam steering gear; steam capstan; plans of ships and reproduction in mold loft; finding the displacement of ships and center of buoyancy, etc.	Special Notes and Drawings. Navy Department Pamphlets. White's Manual of Naval Architecture.
Ordnance	5	4	Ballistics: The laws of combustion of gunpowder; velocities and pressures in guns; rifling, effect on pressure; the motion of projectiles in a non-resisting medium and in air; computation and use of ballistic and range tables; accuracy and probability of fire; derivation of rules for correcting the errors which occur in gunnery practice; the penetration and effect of projectiles. Guns: Computation of their elastic strength and shrinkage. Ammunition: Its description, preparation, supply, stowage, and use. Armor: Description of; use of armor and other protection of matériel and personnel. Torpedoes: Their description and use.	Interior and Exterior Ballistics. Accuracy and Probability of Fire. Ordnance Notes. The Elastic Strength of Guns. Text-book of Ordnance and Gunnery.

Details of the course of instruction—Continued.

FOURTH YEAR—FIRST CLASS—LINE DIVISION—Continued.

SECOND TERM—continued.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Navigation	4	4	Theory of the Deviation of the Compass, including the nature and causes of the several parts of deviation, the determination of the vertical and horizontal forces of the earth and ship, the causes and amount of the heeling error, the changes that take place upon a change of geographical position, the graphic representations of the amount and direction of the forces that act on the needle, and the mechanical correction of the deviation and heeling errors. Practical Navigation. Practical Surveying.	Admiralty Manual for the Deviations of the Compass. Diehl's Practical Problems and the Compensation of the Compass in the United States Navy.*
English	2	4	International Law: The objects, sources, and sanctions of international law; the laws of war, embargo, reprisal, and retorsion; blockade; contraband of war; right of search; ship's papers and nationality; prizes; privateering; piracy; the rights and duties of neutrals; jurisdiction over vessels at sea and in territorial waters; fugitives and deserters; licenses to trade; recaptures. Military Law:[1] Courts of inquiry; general and summary courts-martial.	Snow's International Law. United States Navy Regulations. Lauchheimer's Forms of Procedure.
Special instructions.	½	4	General description of the human body and its functions; the arrest of hemorrhage: resuscitation from drowning; alcoholic drinks, tobacco, and other narcotics. (Lectures and practical instruction Fridays, 7.30 to 9.50 p. m., additional.)	Blaisdell's Practical Physiology.

[1] The cadets of the Engineer Division also take the course in military law.

FOURTH YEAR—FIRST CLASS—ENGINEER DIVISION.

FIRST TERM.

Steam engineering.	10	4	Marine Engines: Horsepower, nominal and indicated, and the efficiency of the engine; resistance of ships and indicated horsepower necessary for speed; space occupied by, and general description of, modern marine machinery; engines, simple and compound; expansion of steam, mean pressure, etc., piston speed, stroke of piston, revolutions, size of cylinder, cylinder fittings, etc.; the piston, piston rod, connecting rod; shafting, cranks, and crank shafts, etc.; foundations, bedplates, columns, guides, and framing; the condenser, pumps; valves and valve gear; valve diagrams, etc.; propellers; sea cocks and valves; fitting in of machinery, starting and reversing of engines; materials used by the marine engineer.	Seaton's Marine Engineering.

Details of the course of instruction.—Continued.

FOURTH YEAR—FIRST CLASS—ENGINEER DIVISION—Continued.

FIRST TERM—continued.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-book.
Steam engineering.	10	4	Metals: Their properties and treatment.	Metals, by A. K. Huntton and W. G. McMillan.
			Boilers: Fuel, etc., evaporation; proportions; water-tube boilers; boiler details; mountings and fittings; wear and tear; repairs; performance; corrosion; determining the heating value of fuels; forced and natural draft and resistances; measurement of heat produced and wasted; analysis of waste gases; strength of boiler material; design; construction; board of trade rules; management; liquid fuel.	Seaton's Marine Engineering. Stromeyer's Marine Boiler Management and Construction.
			Designing Machinery: Materials used in machine construction; straining actions to which machines are subjected; resistance of structures to different kinds of straining action; fastenings, riveted joints, bolts, nuts, keys, and cotters; pipes and cylinders; journals, pivots, axles, and shafting; crank-shaft design; practical designing of various parts of machines.	Unwin's Elements of Machine Design—Parts I and II.
Mechanics	3	4	Same as for the line division	Same as for the line division.
Physics	3	4	do	Do.

SECOND TERM.

Seamanship	4	4	Naval Construction: Definitions; history and practice of shipbuilding in iron and steel; systems of construction, subdivision, and armoring; systems of pumping, draining, ventilating, steering, and hoisting; fittings in general; distribution of armor, guns, and boats; special constructions; launching; types of ships; structural strength and strains; buoyancy and stability in the intact and the damaged conditions; theory and observation of waves; rolling and pitching; principles of stowage; resistance, propulsion, and steering of ships; qualities of ships; construction and use of diagrams of qualities; the use of qualities; steam steering gear; steam capstan; plans of ships and reproduction in mold loft; finding the displacement of ships and center of buoyancy, etc.	Special Notes and Drawings. Navy Department Pamphlets. White's Manual of Naval Architecture.

Details of the course of instruction—Continued.

FOURTH YEAR—FIRST CLASS—ENGINEER DIVISION—Continued.

SECOND TERM—continued.

Department.	Number of recitations a week.	Number of months.	Subjects.	Text-books.
Steam engineering.	10¾	4	Marine Engines: Physical properties of steam; convertibility of heat and work, internal work; theory of the steam engine; characteristics of a perfect gas; completely superheated steam; thermo-dynamics of a perfect gas; theory of a heat engine working with a perfect gas; absolute scale of temperatures; performance of a perfect-heat engine; perfect steam engine; generation and expansion of steam; Carnot's principle; comparison of steam and air engines; adibatic equation; adibatic curves; nature of the process of expansion; area of the diagram of energy, mean temperature of supply; entropy; temperature entropy diagram; thermal indicator diagram; entropy of air and steam; losses of efficiency in heat engines; clearance and wire drawing; feed-water heaters; utilization of low temperatures; formulæ connecting the pressure and temperature of saturated steam; dilatation and specific heat of water; geometry of the curve PV^n=Constant. Casting and molding; pattern making and casting design; smithing and forging; boiler making and plate work; laying off machine work; erecting machinery; metals and alloys.	Cotterill's Steam Engine Considered as a Thermo-dynamic Machine. Lineham's Mechanical Engineering, Part I.
			Boilers: Designing and drawing	Same as for the first term, with notes.
			Designing Machinery: Designing and drawing.	Do.

V. The Marking System at the United States Naval Academy.

Each naval cadet is called upon for recitation as often as possible and a mark is given by the instructor of his section in proportion to the cadet's knowledge and manner of exposition. At the end of each week the marks are publicly posted, so that each student knows how his work has been rated and how his standing compares with that of other students of his class. At the end of each year merit rolls are made out for each class separately, showing the proficiency of each cadet in each branch of study. A numerical coefficient is assigned to each study, likewise, in the order of its value in a naval training. The mark of the cadet in each study on a scale of 4.0 (=perfect), 2.5 (=tolerable), 0 (=total failure) is multiplied by the coefficient for that study and the product is his aggregate of credit for that particular study. For example, in the fourth class the coefficient for mathematics, for English, and for languages is 5. The maximum possible mark for recitation is 4.0 (=perfect). The maximum credit to the fourth-class cadet is, therefore, 20 for mathematics, 20 for English, 20 for languages. If his "conduct" is perfect his mark will have been 4.0, the corresponding coefficient is 3, and his aggregate merit 12. If his "efficiency" is perfect his mark (4.0) will be multiplied by the corresponding coefficient (1), and his

aggregate merit 4. If such a cadet has been perfect in all his work he can attain a maximum merit of 76 therefore; (20 + 20 + 20 + 12 + 4).

Maximum for a fourth class cadet	76
Maximum for a third class cadet	152
Maximum for a second class cadet	228
Maximum for a first class cadet	304
Maximum at the end of four years	760

A final merit roll is made up at the end of the four years of academic work on this principle, and the standing of graduating class is determined by a simple numerical rule. To stimulate ambition the names of cadets who attain 85 per cent of the maximum in any year are printed with a star affixed to their names on the merit rolls of the Annual Registers, and the diplomas of cadets whose final marks on the graduating merit roll are not less than 85 per cent of the maximum read, "Passed with distinction;" those whose final marks are between 74 per cent and 85 per cent of the maximum read, "Passed with credit," and those whose final marks are between 62½ per cent and 74 per cent of the maximum read, "Passed."

The table of adapted numerical coefficients, or of relative weights, of the various studies is instructive, but it is too long to be here given in full. Seamanship in the second class year has a weight (a coefficient) of 3, while in the first class year it has a weight of 15. More is expected of the first class man. Ordnance and gunnery has a weight of 15; physics (in the second class) a weight of 10, and so on.

Conduct has a weight of 3 for the fourth class, 5 for the third class, 7 for the second class, 8 for the first class. Efficiency has a weight of 1 for the fourth, 3 for the third, 7 for the second, 8 for the first class. Here, again, more is expected from the upper class men.

The following table shows the maximum credit that can be attained in each department of study by cadets fitting for line officers and for engineers, respectively:

Department and subjects.	Maxima for four years, line division.	Maxima for four years, engineer division.	Department and subjects.	Maxima for four years, line division.	Maxima for four years, engineer division.
Discipline.			*Physics.*		
Conduct and efficiency	168	168	Chemistry and physics	76	76
Seamanship.			*Mathematics.*		
Seamanship, naval construction, and naval tactics	72	44	Algebra and geometry, trigonometry, analytical geometry, and descriptive geometry	60	60
Ordnance.			*English.*		
Ordnance instructions, infantry tactics, and gunnery	60	------	English and law	------	48
Navigation.			International and military law	64	------
Astronomy, navigation, and surveying	68	12	Military law	------	4
Steam engineering.			*Languages.*		
Practice cruise	32	------	French and Spanish	48	48
Engineering	------	188	*Drawing.*		
Mechanics.			Mechanical drawing	36	36
Differential and integral calculus, and mechanics	68	68	*Miscellaneous.*		
			Special instructions (physiology and hygiene)	8	8
				760	760

Whatever may be said of the marking system in our colleges and schools there is no doubt whatever that it is an integral part of the methods of the schools at Annapolis and at West Point, nor is there any doubt that it should be retained. The graduates of these schools would be practically unanimous in this judgment. *As there practiced* it has the advantage of giving each cadet a full knowledge of his own performance at short intervals. If he is ambitious to stand well in his class (and his future promotion in the Navy depends on his graduating standing) he can tell each week how he compares with his friendly rivals. If he is near the foot of the class, and in danger of being dropped, he can measure each week what he has done, and estimate what still remains to be done to become proficient.

In after life the verdicts of our fellows on our attainments and conduct are often postponed for many years, and we live meanwhile in a false security. By this system, as here applied, Nemesis comes once a week. Best of all, frequent opportunity is given to reverse her judgments. There is no better way of training men to endure the long trials of actual experience in after life than to give them verdicts on their competence and conduct at short intervals in the very beginning of their career.

If we are teaching mathematics to a class of young Newtons, or the humanities to a class of youthful Porsons, the ideal method of instruction is to open the royal gates of knowledge to these eager minds; to exhibit the vast fields beyond; to invite them to the intense pleasures that come of acquisition and discovery. Such ideal pupils need no stimulus. They will themselves press forward, and at the most will require only a little guidance or, it may be, restraint. If there be any sluggards among them, the example of the brilliant ones will serve to excite and stimulate. Science will be studied for its own sake; learning will be free; there need be no compulsion; wisdom will be its own reward.

While the foregoing might conceivably be true for brilliant pupils of mature age, it is certainly not true for young students, no matter how brilliant. For them tasks must be set and performances tested. For a company of young men, just out of boyhood, chosen as the cadets of the two Government schools are chosen—that is, so as to make it certain that many of them are ill-equipped, idle, and not clever—it is imperative to urge them in every possible way toward the desired end.

And it can not be said too plainly nor too often that the desired end in these Government schools is not, primarily, to make scientific experts and scholars. Out of any great company of well-taught men some will become scholars and experts. Experience has proved it. But the primary object of the Government schools is to turn out year by year a class of worthy public servants for our Navy and Army. We wish to insure that every year they shall go forth well-instructed, faithful, obedient, patient, competent. For a long series of years each one of them will hold a subordinate position and be charged with comparatively humble duties. Wherever he is placed he must be at the level of his responsibilities. Each year he must be better fitted to undertake graver matters. Few of the graduates will ever, in the ordinary course of things, be called upon for any serious and grave responsibility. We wish to insure that if they are so called upon they will be fitted for it and competent to undertake it. Once in a long period some few officers may be suddenly plunged into problems like that of Essex Porter off Cape St. Roque, Farragut at Mobile, Dewey at Manila. The training that is needed is the training required to fit the graduate for all his duties—not alone for great emergencies, but also for daily routine duties without brilliancy and very likely without any especial recognition.

A ship is a complicated machine manned by seamen of limited intelligence. The duties of a ship-of-war may take her into all oceans and into any port. The ship itself—the machine—must be kept in perfect order. Every part of her armament and equipment must be at every instant in perfect readiness for work. Each

man of the crew must be trained to the highest pitch of individual perfection in his especial duties; and, moreover, the ship's company as a whole must be welded into one mass and imbued with one spirit. To accomplish these requirements the sea officer must faithfully perform his round of allotted duties without the slightest falling off in his military spirit or in his assiduity. Steadiness is needed here more than brilliancy, character even more than accomplishment.

The methods practiced at the Academy are the very methods needed on board a man-of-war. The sailor-man is to be instructed in his practical duties precisely as the cadet was trained in his. No breach of discipline or lack of efficiency can be allowed to pass unnoticed. The marks that are given at the Academy are an essential part of the cadet's daily and hourly training in efficiency. They are necessary in these first years of an officer's training to form his standard of professional excellence. When the standard is finally formed his sense of professional honor and duty, stimulated as it is by association with his fellows, is usually sufficient to maintain his performance at the desired level.

One fundamental point must be insisted upon. It is essential that each cadet at the Academy should acknowledge the justice of the marks with which he is credited. In general this justice is acknowledged. In particular cases, there have been complaints on the part of naval cadets that the marks of a class were not on the same scale throughout the class. Such complaints arise in this way: The class is divided, let us say, into four sections, each section under an officer. There may be four officers then, A, B, C, and D. Theoretically, a perfect recitation should be marked 4.0 by each officer, a good recitation 3.0, and so on. Practically, it may happen, and perhaps sometimes does happen, that a performance that would be graded as 3.0 by instructor A is graded as 2.9 by B, 2.8 by C, and 2.7 by D. The cadets in the sections presided over by A, B, and C have a certain advantage over those in the section taught by D.

At the United States Military Academy, at West Point, a uniform grading throughout the class is secured in the following way: The head of the department of study is a permanent officer, serving for life in that capacity. His assistants are, as at Annapolis, line officers, detailed for a short term (about four years). Each one of them is charged with the instruction of a section. The professor teaches no section, but occupies the whole of his time in visiting the different sections, spending now an hour, now a half an hour in the various rooms. One of his duties is to know, by such visits, the performance of each student of the class, and another duty is to enforce a uniform scale of marking throughout. This he can readily do by assigning marks to each recitation that he hears and by subsequently comparing the instructor's markings with his own. If this detail of management were added to the system employed at the Naval Academy there would never be ground for any doubts of the essential justice of the method. I have never heard it questioned by graduates of West Point, and only very rarely by graduates of Annapolis. With daily supervision of the head of department all objections to the system, as there practiced, vanish.

VI. Practical Instruction of Cadets.

SEAMANSHIP.

Knotting and splicing; compass and lead line; ship nomenclature; cutting and fitting hemp and wire rigging; rowing, and the management of boats under oars and under sail; sailmaking; making up, bending, unbending, and handling sails; rigging ship; stripping ship; shifting spars; getting under way and anchoring; evolutions with vessels under sail and under steam; signaling, Army and Navy code; management of steam launches; steam fleet tactics with steam launches.

ORDNANCE.

Infantry, schools of the squad, company, and battalion, in close and extended orders; artillery, schools of the battery and battalion; exercise and target practice with small arms and guns of main and secondary batteries; exercise with cane, smallsword, and broadsword; handling and firing torpedoes, etc.; determinations of velocities; experimental determination of range tables, etc.; the preparation, inspection, care, and preservation of ordnance material.

Six medals are awarded annually for marksmanship: Gold, silver, and bronze medals to the cadets of the first class, as prizes for excellence in rapid-fire gun practice; and gold, silver, and bronze medals to the cadets of the second class, as prizes for excellence in practice with the service rifle and revolver.

NAVIGATION.

Navigation.—Observations, with sextant and artificial horizon, for time, longitude, chronometer correction, latitude, and azimuth.

Surveying.—Surveying and constructing a chart of a portion of the Severn River.

Compass deviations.—Swinging an iron ship, and observing the deviations, etc., on different courses; from these observations finding the approximate and the exact coefficients, and the horizontal and the vertical forces acting on the standard and steering compasses; also finding the heeling coefficients for the same compasses without heeling the ship; also correcting the deviations of a compass, using a navy compensating binnacle.

STEAM ENGINEERING.

Shop work.—The pattern shop: Selection and treatment of different woods for different purposes. Elementary work of the carpenter shop, through mortising, joining, etc., to finished pattern work.

The foundry: Iron and brass casting; the making of bronzes, alloys, etc.

The blacksmith shop: Forging, welding, etc.; tempering, casehardening, etc.; bending and quenching tests of metals.

The boiler shop: Riveting, soft and hard patching, calking, annealing, tube expanding, etc.; testing.

The machine shop: Vise bench work; machine tool work; including the setting of work; turning; planing; boring; slotting, etc.; pipe fitting; building, erection and aligning of engines and engine fitting; preparation of working drawings and working from the same.

Ship work.—Management of main and auxiliary engines; getting up steam at leisure and in emergencies; fire-room and engine-room routine, firing, water tending, and oiling; routine under way when desirable to obtain maximum speed; same for maximum steaming radius; management of engines while maneuvering at sea; determining the condition and locating defects in machinery while in motion; causes and prevention of explosion of boilers, steam pipes, gasses in uptakes, and in coal bunkers; lying under banked fires; coming to anchor; overhauling machinery; cleaning boilers and condensers; preservation of machinery of a vessel when out of commission; conducting progressive and full-power trials and the collecting of data.

Ordinary casualties: Hot crown sheets, burst feed pipes, leaky boiler tubes and seams, burnt grate bars, hot pins and journals, fire in bunkers, flooded compartments.

Damages received in battle: Preparations for action; temporary repairs and alternative devices and expedients to be adopted in event of receiving injury from shot or torpedoes; quick methods of disabling machinery about to fall into the hands of the enemy.

Miscellaneous.—Standardizing steam gauges and indicators; preparing specifications for purchase of machinery and stores; testing, inspection, and preservation of stores; preparation of various cements, paints, and varnishes in ordinary use; selection of coals; making estimates of the amount of coal on hand, prevention of deterioration, etc.; making of watch, quarter, and stations bills, etc.

PHYSICAL TRAINING.

Class drills in calisthenics, free movements and with apparatus.

Special exercises to promote symmetrical development when necessary. Athletic exercises, including boxing and swimming. Dancing.

Summary of practical instruction.

Kind of instruction.	During each academic year.				Total number of instructions during 4 academic years.
	First class.	Second class.	Third class.	Fourth class.	
Seamanship	58	59	105	81	303
Boats under oars, or sail	4	4	37	33	78
Steam tactics	37	33			70
Signals		24	12		36
Battery drill	4	4	14	14	36
Target practice, great guns	32	16			48
Battle drill	1	1	1	1	4
Landing party	4	4	4	4	16
Torpedoes	16				16
Practical ordnance	40	20			60
Artillery	20	20	20	20	80
Battalion artillery	13	13	13	13	52
Target practice, machine guns		16			16
Target practice, small arms		16	52		68
Company	20	24	24	24	92
Battalion infantry	9	9	9	9	36
Skirmish drill	16	16	16	16	64
Sword exercise	60	60	60		180
Practical instruction in deviation of compass	4				4
Practical instruction, navigation	*a* 14				
Practical instruction, surveying	*a* 10				
Steam	*b* 14	29	14		57
	c 152				152
Running steam launches	37				37
Practical electricity	60				60

Kind of instruction.	Fourth class, during each academic year.	Total number of instructions during 4 academic years.	Fourth class, during summer months	Total number of instructions.
Practical instruction in rigging loft, and in sail loft *d*				112
Gymnastics and boxing	76	76	94	170
Swimming			112	112
Dancing	36	36		36
Boats			94	94
Setting-up drill			112	112

a Study periods. *b* Line Division. *c* Engineer Division. *d* Cadets who are proficient in swimming receive practical instruction in knotting, splicing, rigging, and other practical work of the sort.

The instructions in seamanship and gunnery on board of the practice steamers are also made instructions in running and managing the engines and boilers of those vessels. The instructions in naval tactics are also made instructions in running and managing the engines and boilers of the steam launches when practicable.

PRACTICE CRUISES.

During the summer months the cadets of the fourth (entering) class are kept at Annapolis under instruction in practical matters. The cadets of the second class are then allowed a leave of absence of about two months.[1] The first and third classes are sent to sea on naval vessels, and are there trained in every duty of the seaman, and of the warrant, and of the commissioned officer. The lower classmen are seamen, and perform every detail of a seaman's duty, not only once, but hundreds of times, until they acquire a perfect familiarity with these duties. The upper classmen navigate the ship and stand the watches, etc.

[1] This leave and short leaves at Christmas time are the only ones granted during the four years' training.

The cadet-engineers are sent on a special vessel to visit important shipyards and engineering establishments in the United States. During the Spanish-American war of 1898 the annual cruise was suspended, and 123 of the cadets were ordered to ships actively engaged in warlike operations. The naval cadets of the graduating class of 1899 had, on the average, eight months of service in practice ships (two cruises and one summer as fourth-class men), besides two or three months' service on ships during the war immediately after their graduation at Annapolis. The graduated cadet of 1899 therefore began his practical life with a total of about eleven months' sea service to his credit.

The cadets are selected one from each Congressional district in the United States; and ten are appointed "at large" by the President of the United States. The requirements for admission are fixed by order of the Secretary of the Navy, and can be changed at any time. The requirements for graduation are practically fixed by the necessities of the naval service. The best opinion seems to indicate that a course of four years of study (certainly not more than five years) is, on the whole, the proper term. As time goes on and the service becomes more complicated by the introduction of new ships and more elaborate fighting machines the requirements of the graduated cadet will become higher. When the course of study becomes too full it must be relieved by raising the standard of admission. This can be done at any moment by the Secretary of the Navy, and will no doubt be done whenever the pressure of work is felt to be excessive. The system is thus elastic, and can be made to fit the circumstances at any time.

Under the present system the cadet remains for four years at Annapolis engaged in study. He is then sent to sea for two years, and returns for his final examination. It is only after such final examination that the cadet becomes a commissioned officer. This system is condemned on all hands, and it appears to be justly condemned. During the two years at sea the status of the cadet is most unfavorable to his professional advancement. He is not an officer, with an officer's feeling of responsibility and professional pride, and his real, intimate, and vital connection with the Navy only begins when he obtains his commission and knows at last that he is a life member of an honorable profession. The cadets who graduate with the highest standing are of course reasonably sure of their careers, and this system does not operate so unfavorably in their cases as in those of cadets who are doubtful whether any amount of diligence on their part during their fifth and sixth years will secure their advancement to the officer's grade. There can be no doubt, it would seem, that the present system should be changed so as to give commissions to the cadets at the end of four years (or possibly at the end of five years) spent at the Academy.

In the British navy young officers are kept at sea, with only short intervals of shore duty, for the first ten or twelve years of their career. They thus acquire "the habit of the sea" early and never lose it. In the German navy young officers are constantly engaged in torpedo-boat maneuvers. In our own service it is probably true that responsibility comes too late in life, and that there is more shore duty for young officers than is desirable. These conditions will doubtless be much changed by the new responsibilities undertaken by the country; and they are only mentioned here because they seem to be, in some degree, related to the matter of the practical training at the Academy, which, in the judgment of many excellent officers, tends to prize academic attainment above its true value.

So long as the ships of the Navy were propelled by sail power alone the officers of the service were the line officers (who commanded, sailed, navigated, and fought), paymasters or pursers (who were pay officers and commissaries), and officers of the Marine Corps (which was a corps of marine infantry), and surgeons. The line officers were naval officers par excellence; the staff officers were

their auxiliaries. With the introduction of steam power into naval vessels (about 1840) the duties of the line officer became far more complicated. He was thenceforth required to understand the management of engines, which were operated at first, under his direction, by mechanics. It was soon found that a new staff corps was necessary, viz, the corps of naval engineers. It was not until 1866, however, that engineers were instructed at the Naval Academy, and it was not until 1882 that the present system of instruction was adopted.

Since 1882 all cadets receive the same training during the first three years. At the beginning of the fourth year the first class is divided into two divisions—the line division and the engineer division. Each division pursues its course of special studies. (See the preceding tables.) When cadets receive their assignments in the Navy some of them become line officers, some engineer officers, some officers of marines—i. e., marine infantry. A few graduates have been appointed naval constructors. A very few have entered the pay corps.

By the precedents of the old Navy the command of ships, guns, boats, and men rested with the line officers. The staff officers were simply their auxiliaries. A midshipman commanded the boat, for example, in which a chief engineer, thirty years his senior, was going ashore. The vessels of the modern navy have no sail power at all, and the duties of the marine engineers have become more complicated and important. The relations of line and staff officers have led to some friction in the service afloat, which has been reflected to some degree in the Academy.

The questions involved are delicate and complicated. They are spoken of in the report of the Board of Visitors for 1897 and a remedy proposed as follows:

A curriculum of four years is certainly sufficient to fit the young men for all subordinate work on board even a modern man-of-war. Each and every graduate after a four years' course, alike for all, and under exactly similar conditions, would then enter the service and could be assigned to alternating duty, either on deck, the engine room, in command of the police of the ship, or in charge of the purchasing and commissary of the vessel. In short, the graduate becomes a naval officer, entering the wardroom as an ensign, trained to habits of command, and associating at a proper age, under like circumstances, with his brother officers of higher rank. The present staff of the Navy asks for lineal rank; in this way each alumnus has it. The line wishes homogeneity on board the ships; it thus obtains it. The country demands the strictest discipline and submission to one-man power, and it gains it; differences occasioned by present rival claims of different corps cease to exist; the staff disappears, and the all-round man comes to the front.

Post-graduate courses, either at the Naval Academy, the War College, or the Torpedo Station, will train the special minds of those men who, after experience at sea, desire to perfect themselves on scientific lines, and may be used to educate a small corps of experts, which should be entirely divorced from the hardships as well as from the rank and promotion of the seafaring navy. This corps of experts should include the present so-called constructors, engineers, and civil engineers, as well as the officers who wish to devote their lives to the construction of armor and to ordnance.

The strife between staff and line up to the present time has not been altogether an evil, as it has produced a rivalry and developed men capable of interchangeable duties. Instances are not rare to-day of graduates who have fitted themselves for all positions and lines of research, but they have not accomplished this at the Naval Academy, but after leaving it, and from experience and digested study; but the tendency to magnify the knowledge of material has led thought away from the true scope of naval training, while the personnel, by wrangling over individual preferment, has lost sight of the true dignity and development of the sailor.

The questions here treated are in the way of solution by legislation, and need not be further referred to except as to the post-graduate courses.

In this regard a brief reference to experience and practice in the Army may not be without value. The cadets of the United States Military Academy are all educated together at West Point, and there is absolutely no feeling except brotherhood between them at the Academy, although it is well known that the first five

of the class will receive promotion into the Corps of Engineers (a staff corps), the next group into the artillery, the next group into the cavalry, and the members lowest in class rank into the infantry (practically the infantry and cavalry graduates from one group). A system of post-graduate schools is maintained for young Army officers. All engineer officers serve at the engineer school of application (and the torpedo school) at Willets Point. This school is also open to line officers, and many such have taken advantage of its instruction, to the great benefit of the service, as, for example, during the Spanish-American war. All artillery officers are sent (so far as practicable) to the artillery school at Fortress Monroe. All infantry and cavalry officers (so far as practicable) attend the infantry and cavalry school at Fort Leavenworth. The courses followed at these schools extend over a period of at least two years. Officers usually serve for some time with their regiments before going to these professional schools.

Appointments in the Ordnance Corps (a staff corps) are usually made from artillery officers of merit. Appointments in other staff corps (the Adjutant-General's, the Inspector-General's, the Judge-Advocate-General's Department, the Pay Department, the Quartermaster's Department, the Commissary Department) are made usually by selection among line officers of merit. The same system is advocated for the Navy (not for the first time) in the report of the Board of Visitors above cited, and the recommendation appears to the writer to be worthy of consideration. It would be easy to adduce many arguments in its favor.

If the Revenue-Marine Service, the Life-Saving Service, and the Inspection of the Merchant Marine (now under the Treasury Department) were transferred to the Navy Department, the positions in these services could gradually be filled by cadets from the Naval Academy, to the great advantage of the country.

There is a slight tendency at both Government schools to overestimate the importance of purely scientific studies, somewhat to the detriment of the strictly professional branches. It is of course true that most professional branches—as ordnance, for example—rest on scientific bases; and, again, that a student who faithfully performs an allotted task in the integral calculus is, in some degree, training himself for the faithful performance of military and naval duties. The greater the scientific accomplishment of an officer, other things being equal, the greater his efficiency. But the point to be noted is that efficiency is the *first* matter to be considered, while academic excellence is, in these special schools, only a means to an end. The stress should constantly be laid on the professional branches. The ideal to be kept in view is to train the cadets to be honest, worthy, faithful, competent public officers in time of peace and efficient soldiers and sailors in time of war. Primarily these schools are war schools. They are special schools for training our soldiers and sailors in technical matters—not scientific schools in which soldiers and sailors are trained. In the first half of the century West Point was the leading scientific and engineering school of the country. It is so no longer, and can never regain this rank, nor is it desirable that it should do so. But during the whole of the century it has been a magnificent training school for soldiers, and since 1817 it has had no superior in the world in this particular regard.

It is therefore necessary to bear in mind that the United States Naval Academy is also primarily a technical school of a highly special character, whose chief business is to teach the art of naval warfare.

Its students must be trained to be efficient, honest, and devoted public servants in war and peace, and prepared for the very various duties which fall to the naval officer, who may be, by turns, a seaman, a navigator, a soldier, a diplomatic agent, an inspector of technical works, a director of large expenditure.

The training required is very special, at the same time that it is required to cover many fields. The chief and most important result of the Academy training

is the formation of a high sense of official duty and of professional honor. This is accomplished by methods peculiar to the school which depend to a great degree on the large number of instructors relative to the number of students. Each cadet is daily and hourly brought face to face with his duties, and every shortcoming is noted and must be made good.

All requirements are reasonable and obviously necessary. Every requirement is insisted upon and there is no escape from it. There are, for example, several thousand opportunities for a cadet to be "late at roll call" during his academic course. No single tardiness is allowed to pass unnoticed. At the end of four years promptness has become a habit. In the same way neatness in dress, cheerful obedience to orders, respect for superiors, alert attention, efficiency in the performance of any and every official duty, large or small, has also become a fixed habit. During four years of such training, habits crystallize into the bases of official character. The primary object of the school is to form the official character of the officer. The secondary object is to give him all the intellectual and scientific training possible.

The two Government schools can not afford to lose sight of the relative importance of these two objects.

Specialized, technical, and scientific training should be given in post-graduate courses to officers who have shown special talent. The Naval Academy has its task in training all officers alike for the performance of their common duties.

VII. The Naval War College and Torpedo School at Newport, R. I.

In a certain sense the Naval War College at Newport is a post-graduate school for officers of the Navy, although the name of "post-graduate school" is disclaimed. It is, however, a professional school for graduates. Its objects are stated in the following editorial from the New York Sun, to which the writer has been referred by the president of the college as, on the whole and in general, a satisfactory account:

There was formerly some misconception with regard to the aim of this establishment. It was supposed to offer to the graduates of the Naval School at Annapolis merely post-graduate instruction in subjects with which they were already to a certain extent acquainted, as, for example, the higher chemistry and astronomy. This is a mistake. The Naval War College has no such end in view. Neither is its teaching designed to give a naval officer expertness in handling a single ship, or in keeping company with other ships, or in firing guns. It is, on the contrary, only the great strategic and tactical problems of maritime warfare which are considered at Newport; such problems as confronted Admiral Dewey at Cavite and Admiral Sampson at Santiago. In other words, the establishment gives the prospective commander the same kind of instruction with reference to great operations of war at sea as its prototype, the Kriegsakademie of Berlin, which for so many years was under Von Moltke's supervision, offers to the student of war on land.

To exemplify the kind of service which a college of this kind may render, let us recall the state of things which existed in April, 1898, at the time when we began war with Spain. Our opponent then had two fleets in being, namely, one in the waters of the Iberian Peninsula, which might be used either for the defense of Cuba and Porto Rico, or for aggressive operations against our Atlantic and Gulf ports; secondly, one at Manila, which might be employed either for the protection of the Philippines or for an attack upon our seaboard cities bordering the Pacific Ocean. It is obvious, then, that our naval strategists were confronted by two complex and momentous problems, of a kind similar to that solved by Nelson, when, having followed, as he imagined, the Franco-Spanish fleet to the West Indies, he returned betimes and reduced it to impotence at Trafalgar. To keep our own seacoasts safe and at the same time to annihilate the enemy's means of shielding his own transmarine possessions was an intricate and difficult task, which called for talents of precisely the same kind as are involved in the conception and execution of a comprehensive campaign on land. Or rather, when we bear in mind that Spain and the Philippines are separated by half the

diameter of the earth, we can see that it was two wholly independent campaigns, each of the highest importance, which the staff officials of our Navy Department and the officers in command of vessels had to devise and carry out.

Now, the business of the Naval War College at Newport is primarily to familiarize officers, who may at any time be summoned to assume maritime command, with naval strategy, or, in other words, with the paramount aims of naval war fare. There, too, are studied vital questions of naval tactics—the rôle of which begins when strategy has performed its part—such as were memorably illustrated at Cavite and at Santiago. Touching this subject, invaluable lessons may be drawn from the campaigns of the great English admirals of the eighteenth century and the early part of the nineteenth century.

To facilitate the historical and analytic study of the strategic and tactical elements of maritime warfare is the main design of the War College at Newport. * * *

The president of the college has kindly put at the disposition of the writer the following memorandum, which is printed in full:

EXPLANATION OF THE COURSE.—*1899.*

The methods employed in the regular courses of late years at the college have presupposed in the officers in attendance maturity of years and professional experience and knowledge. With this as a basis, the system has been the one so successfully employed in Germany, and of late in the United States, of individual work, research and thought, with collective discussion. As means to further this research, the library and lectures are presented. Although this system can not be followed out entirely in a course of the nature proposed for this summer, still it will be kept steadily in view, and in the war games—or better, war situations—this method is alone employed.

The want of continuity in attendance pertaining to the situation, then, will lead to the postponement for the present of the general problem of 1899, which involved a study of the Lakes and of the whole Atlantic and Gulf coasts, and the question of the protection of Porto Rico; also a postponement of individual description and criticism of the various important naval campaigns and fleet actions of the past, and the examination and study in detail of the large foreign navies of the world. It is expected, however, to give a general review of the sea power of England, Germany, France, and perhaps other powers in separate papers, if time permits.

The course proposed will be arranged to make each day, so far as possible, complete of itself.

The only continued series of lectures now proposed will be those of Captain Mahan on naval strategy. These are six in number and were to be delivered by Captain Mahan in person during the first week in June, but his appointment as a representative of the Navy and of the nation at the international conference at The Hague prevents this personal delivery, and the lectures will be read by members of the college staff.

It is hoped that one or more lectures, treating of naval tactics in a broad and comprehensive manner, will be delivered by Captain Taylor, of the *Indiana*.

Captain McCalla will deliver, late in July, one or two lectures upon the "Naval lessons of the war," which it is hoped will evoke a full discussion from those interested.

Several important subjects will be taken up for discussion by officers in attendance, and it is hoped that the officers of this squadron, which represents one of the two great fleets of the late war, will give us the benefit of their experience and observation so magnificently acquired in war service.

The first of these will be upon the general subject of scouting by ships. To hinge a discussion upon this question, there will be read a short paper on scouting by Lieutenant-Commander Murdock.

The second discussion will be upon "Modern naval blockades and investments." This discussion will be introduced by the reading of a paper upon this subject by Lieutenant-Commander Glatzel, of the German Navy, translated and read by Lieutenant Traut of the college staff.

The third discussion will be upon the relative sphere of mobile and fixed coast defenses. The discussion will be based upon a paper by Capt. C. F. Goodrich of the Navy, upon the "Military elements of coast defense," to be read, in his absence, by one of the college staff.

Printed copies of the International Law Situations for 1899 have been distributed. Written solutions are invited from officers interested in the subject on or before

the 25th of July. At a period after that date there will be a discussion and general formulation of the solutions. At some period before the 25th of July there will be a lecture upon the international law bearing upon the subjects by the President of the War College.

There are other lectures that were intended to be delivered this summer by Professor Alger, Lieutenant Rodgers, Lieutenant Bernadou, Mr. John C. Ropes, Medical Inspector Siegfried, Professor Hollis of Harvard University, Major Wallach of the Marine Corps, and a series upon international law, that may be given later if time permits.

I do not more than mention the war games in this statement. They will be explained in full by Lieutenant-Commander Murdock, who is in charge of that department of the college. Of their value too much can not be said.

They have been improved from year to year, and a comparison with these games and those used by other services—the Jane or English game, for instance—will show the greater utility and practicability of the War College games.

A course of reading, which has been recommended to officers at regular sessions, will be found posted in the library. The college building is open every day from 8 a. m. to 10 p. m. and, with its library, charts, and plant in general, is at the service of the officers of the fleet.

Whatever may be the proper designation of the War College, it is in fact a professional school for the training of sea officers in the principles underlying the art of naval war. The Torpedo School (also at Newport) affords to naval officers facilities for instruction of precisely the same kind as that given to army officers at Willets Point.

If it is desirable to enlarge the instruction so as to include all subjects in which line officers at sea should be trained, the nucleus already exists in the War College. A special school for engineers could readily be formed, by a mere order from the Secretary of the Navy, at any one of the great manufacturing cities of the country. Other courses in ordnance, naval architecture, etc., can be formed at any time by such an order and with little expense. The Government already possesses all the technical apparatus (gun foundry, shipyards, docks, etc.), and the instructors could be detailed from officers now in active service. As a matter of fact, instruction of the sort is even now given to young officers who are detailed on ordnance, shipbuilding, torpedo, and other duty. If it is desirable to systematize such instruction, it appears that this can readily be done at slight expense and by a mere order of the Navy Department. The extra expense of the engineer, artillery, and infantry and cavalry schools of the Army is a trifle. The results obtained by these professional schools in the Army are most satisfactory. Probably all army officers would agree with the writer in the opinion that such graduate schools ought not to be situated at West Point, and on similar grounds it is likely that naval officers would decide that Annapolis is not the best site for graduate schools of the Navy.

The past history of the Navy of the United States has been glorious. During the war of the Revolution it rose into being. The war of 1812 opened the eyes of the world to the genius of Americans as constructors of ships and to their capabilities as sea officers. The credit gained in the war of 1812 had been foreshadowed by the operations of Bainbridge, Decatur, and others in the Mediterranean (1801). The naval operations of the civil war (1861–1865) are among the most splendid in history. It was at this time that the training of the United States Naval Academy began to be felt. Farragut was not a graduate of the Academy (he had been a midshipman with the elder Porter on the *Essex*), but his junior officers were graduated midshipmen. The first of them left the school in 1846 and had had twenty years' service at the close of the civil war. The Spanish-American War of 1898 was fought entirely by graduates of the Academy, with a new navy that had been constructed under their advice. It is interesting to remember that Admiral Dewey had served on the *Hartford* under Farragut, and that the traditions of Porter and Farragut were carried on at Manila, while Admiral Sampson had been Superintendent of the Naval Academy, and himself represents

the highest product of the new school. There is no doubt in the future history of our country and of the Navy that the graduates of the Naval Academy will maintain the splendid traditions of the past. The main argument of this paper is that the traditions of the old navy must constantly be kept in view, along with the new ideals forced upon us by new conditions.

STOCKBRIDGE, MASS., *August, 1899.*

CHAPTER XV.

NOTES ON THE HISTORY OF AMERICAN TEXT-BOOKS ON ARITHMETIC.

By James M. Greenwood, LL. D., Superintendent of Schools, Kansas City, Mo., and Artemas Martin, LL. D., Editor of the Mathematical Magazine, Washington, D. C.

Part II.[1]

Chronological table.

[The dates following the title indicate the year of publication. The letters in parentheses indicate whether the copy seen belongs to the Library of Congress (L. C.), the Bureau of Education (B. E.), the Athenæum Library, Boston (A. L.), or the library of Artemas Martin (A. M.).]

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1861. REFFELT'S ARITHMETICS.

Herman Reffelt prepared a four-book series, namely: Volume 1, 12mo, 108 pages; volume 2, 12mo, 151 pages; volume 3, 12mo, 189 pages; volume 4, 12mo, 134 pages.

The first book treats of numeration and the four fundamental rules; the second, of the four fundamental rules, of denominate numbers, and fractions; the third, of proportions, percentage, average and alligation, and mensuration, and the fourth, of short methods, equations, logarithms, and progressions.

These are books of problems, arranged and classified. The first book was published in 1861, the second in 1871, and the third and fourth in 1873, by E. Steiger, New York.

1861. CALDWELL'S PRACTICAL ARITHMETIC.

The author of this work is M. P. Caldwell, professor of mathematics. On the title page the author says the "science is presented in its simplicity and its purity, and an original and generalized method of calculation is taught."

This is a brief arithmetic of 178 pages. The definitions, rules, and illustrations are very concise. What the author has to say he says pointedly and stops. It might have been more voluminous without detriment.

The first edition was published in 1861, and a stereotyped edition in 1867, by J. W. Burke & Co., Macon, Ga.

1862. RODGERS' ELEMENTS OF MENSURATION.

This book can be used by the pupil after completing any good common-school arithmetic. It requires neither algebra nor geometry as a preparation. The author has given such definitions and explanations as are absolutely necessary for the learner to comprehend each principle and to apply it understandingly.

Under mensuration of surfaces are included parallelograms, triangles, trapezoids, trapeziums, and regular and irregular polygons of more than four sides, circles, arcs, sectors, segments, etc. Mensuration of solids: Cylinders, cones, wedges, prismoids, polyhedrons, and spheres.

Each geometrical figure is illustrated by a diagram or picture, and the entire subject, so far as it is treated, is leveled to the comprehension of the nonmathematical mind. It is such a manual as every school boy and girl should be drilled in before leaving school. The author, M. H. Rodgers, was teacher of mathematics in the girls' high school, Philadelphia. The book is a 12mo, 144 pages, and is published by E. H. Butler & Co., Philadelphia. 1862.

1862. E. ORAM.

Oram's Table-Book; or Stepping-Stones to Intellectual and Practical Arithmetic. By E. Oram. New York: D. & J. Sadlier & Co., 31 Barclay St. Montreal: Corner Notre Dame and St. Francis Xavier Streets.

18mo, boards, 88 pp. Copyrighted 1837. Preface dated 1862. A. M.

1863. GEORGE PAYN QUACKENBOS.

The subject of this sketch was born in New York, September 4, 1826, and died July 24, 1881.

He graduated from Columbia College in 1843, and spent a year teaching in North Carolina. Returning to New York City, he began the study of law, but gave it up to open a private school in the city in 1847, and continued teaching till 1868. He was a frequent contributor to various journals, and from 1848 to 1850 edited the Literary American. But he was better known as an author of text-books, including grammars, histories, rhetorics, natural philosophy, and a series of arithmetics. The degree of LL.D. was conferred upon him by the Wesleyan University in 1863.

The arithmetics he wrote were prepared upon the basis of the works of George R. Perkins, LL. D., and published by Messrs. D. Appleton & Co., New York. They are the following: Primary Arithmetic, 1863, 18mo; Elementary Arithmetic, 1863, 16mo; Practical Arithmetic, 1866, 16mo; Mental Arithmetic. 1868, 16mo; Higher Arithmetic, 1874, 12mo.

The Primary Arithmetic is a beautifully illustrated little volume of 108 pages. It assumes that the beginner knows nothing of arithmetic, and he is gradually familiarized with the four rules and the simpler and more useful tables by the use of such exercises as he can easily understand.

The Elementary Arithmetic is a step above the primary, and is intended for more mature minds. While reviewing the subjects in the primary in a more extended manner other topics are introduced, such as fractions, United States money, reduction, and compound numbers.

The book prepares the pupil for the Practical Arithmetic. It contains 144 pages. The exercises are well arranged and "hard enough" to cause the pupil to work cheerfully.

The Practical Arithmetic is the strongest book of the series. "The aim has been to make it comprehensive, clear, free from verbiage in its definitions and explanations, inductive in its development of the subject and well adapted to the schoolroom." In the preparation of the book the author has kept constantly in view the wants of the pupil in after life. A great variety of problems is inserted under each topic to give practice and precision in the application of principles.

Whenever practicable, business terms and transactions closely connected with the counting-room are inserted to familiarize the pupil with the working processes of ordinary affairs.

The volume is a handsome 12mo of 360 pages.

The Mental Arithmetic is a book of 168 pages. It is on the same general plan as the previous volumes of the series. It encourages instead of discouraging the pupil. The object of the work is to impart readiness to the pupil in all mental operations. While it is not what would be called a strong text-book, it is a good one for the class room.

The Higher Arithmetic is a neat volume of 420 pages, designed as a complete treatise on practical and commercial arithmetic. The matter is fairly well selected but too indefinite.

A careful examination of these books leaves an impression that "arithmetic making" was not the author's sphere, and that if he builded upon the basis of Perkins's, somehow he missed the foundation.

1863. EDWARD BROOKS.

The educator and author, Edward Brooks, was born at Stonypoint, Rockland County, N. Y. At the age of 15 he removed with his father to Sullivan County, N. Y. Here he learned the blacksmith's trade, but he spent his leisure time in study. About this time he also acquired the habit of classifying all important facts or thoughts. He mastered all the common branches and several of the higher ones. In arranging and classifying his knowledge he became quite proficient in composition. It is stated that his career as a teacher commenced in

teaching a singing school in a barn. After this he taught a common school for six months and then attended the normal institute at Liberty, N. Y., for one session. Next he entered the University of Northern Pennsylvania, but did not graduate. In 1852–53 he taught in this institution, and in 1854 he taught mathematics in the academy, Monticello, N. Y. The next year he was elected professor of mathematics in the Millersville State Normal School, Pennsylvania, and in 1866, when President James P. Wickersham was elected superintendent of the public schools of Pennsylvania, Professor Brooks was chosen his successor as principal of the Millersville school, which position he filled for twenty years.

Professor Brooks is the author of a series of mathematical text-books, including arithmetic, algebra, geometry, and trigonometry; Philosophy of the Science of Arithmetic, Normal Methods of Teaching, Mental Science and Culture, and Elocution and Reading.

In personal appearance Professor Brooks is rather undersize, about 5 feet 6 or 7 inches in height; spare built, lithe, active, and graceful in all his movements; a fine head and face well poised on his shoulders, smooth, regular, and pleasant features, dark-gray eyes that look straight through character; soft, glossy, dark hair, now tinged with gray. His voice, either as a lecturer or in private conversation, is one of the most pleasant that I ever listened to. As a public speaker he is, perhaps, the best connected with the National Teachers' Association of America.

THE ARITHMETICS.

The first series included the following: 1. Normal Primary Arithmetic; 2. Normal Mental Arithmetic; 3. Methods of Teaching Mental Arithmetic, and Key to Normal Mental Arithmetic; 4. Normal Elementary Written Arithmetic; 5. Normal Written Arithmetic; 6. Methods of Teaching Written Arithmetic, and Key to Normal Written Arithmetic.

Later a new series of these books was published under the following titles: Normal Primary Arithmetic; Normal Elementary Arithmetic; New Normal Mental Arithmetic; New Normal Written Arithmetic. The Union Series: Normal Union Arithmetic, Part I; Normal Union Arithmetic, complete. Also, the complete is bound up in two books, as follows: Part II and Part III. Normal Higher Arithmetic.

THE NORMAL WRITTEN ARITHMETIC.

This is a volume of 337 pages. It was published in 1863. In the preface the author calls attention to this method of treatment, the arrangement of topics, the reasoning, solutions, and rules.

The new book of 1877 is simply an enlarged edition of that of 1863. It contains 421 pages. These are two of the best common-school arithmetics yet published. They are so well known that I will not attempt a written description of them.

THE NORMAL UNION ARITHMETIC.

To satisfy that class of persons who think that it takes too much time for the pupil to study two separate books, one on mental and the other on written arithmetic, this book was prepared. The combination is as complete and harmonious as the two subjects will admit. The author retains the essential features of the two books in this one, which is the reason for the name—Union Arithmetic. It makes a book of 421 pages, and as meritorious a book as it is possible to make out of such diverse elements. Excellent judgment is shown in the selection of the matter.

HIGHER ARITHMETIC.

This is a scholarly work. The Higher Arithmetic is a handsomely bound volume of 542 pages. It was published in 1877.

1863. N. W. STARR.

The Arithmetical Assistant, in Three Parts: containing an extended series of Practical Examples under the various rules of the Arithmetic: designed as a companion for all arithmetics in use, and being in conflict with none. By a Teacher

of thirty years' experience. Part I. Embracing examples from Roman notation to compound numbers, including simple operations in Federal Money; and closing with bills in various forms, adapted to ordinary business transactions. New York: Mason Brothers, 5 & 7 Mercer Street. Boston: Mason & Hamlin. 1863.

Boards, 351 pp.—A. M.

1863. JOSEPH TROLL.

The Intuitive Arithmetical Guide on the Synthetic, Analytical Method, for Children from Six to Ten Years. A series of Progressive Questions and Lessons on Arithmetic, with a Valuable Appendix of Remarks on the Mode of Instruction, for Teachers. A True Representation of own Observation. by J. Troll. Lebanon, Ills. Published by the Author. 1863.

16mo, 156 + 25 pp.—A. M.

1863. J. RHOADS.

The Primary Arithmetic, for Young Learners. By J Rhoads, M. D., Principal of The Palmer Street Grammar School, Philadelphia. New and Revised Edition. Philadelphia: Sower & Barnes, Publishers, No. 37 North Third Street. 1863.

18mo, 72 pp.—A. M.

1863. M. H. RODGERS.

A Note Book of Arithmetical Rules and Definitions used in the Girls' High and Normal School of Philadelphia. By M. H. Rodgers, Teacher of Higher Mathematics. Philadelphia. 1863.

Small 18mo, boards, 44 pp.—A. M.

1863. OUR OWN SCHOOL ARITHMETIC.

This work was prepared by S. Lander, A. M., and published at Greensboro, N. C., 1863.

It is an elementary treatise, carrying the learner through interest. It is well printed on coarse linen paper. The book is a 12mo of 281 pages.

1864. THE SOUTHERN CONFEDERACY ARITHMETIC.

This arithmetic was prepared by Rev. Charles E. Leverett, A. M., Columbia, S. C., and published at Augusta, Ga., 1864.

This is a pale volume of 218 pages, the last 12 pages being devoted to single-entry bookkeeping. The subjects are all briefly but clearly presented.

1864. L. JOHNSON'S COMMON SCHOOL ARITHMETIC.

Raleigh, N. C. Published by Branson & Farrar. 1864.

A pamphlet of 152 pages. Designed for beginners, and embracing the first principles of the science. It was printed for the benefit of the Southern Confederacy by the Biblical Recorder print, for L. Johnson, professor of mathematics in Trinity College. It is printed on rough white paper—ink is very black. It contains only the simple rules, and is chiefly a question book. The book is divided into five parts: 1. Mental arithmetic; 2. Practical arithmetic; 3. Fractions; 4. Confederate currency; 5. Compound numbers.

1865. FELTER'S ARITHMETICS.

There are eight books in the Natural Series of Arithmetics: First Lessons, 98 pages (1865 and 1868); Primary Arithmetic, 182 pages (1863); Intermediate, 303 pages (1862 and 1866); New Practical, 367 pages (1872); New Primary, 154 pages (1880); New Intermediate, 283 pages (1875); Advanced Arithmetic, 268 pages (1877); Complete Arithmetic, 469 pages (1877).

These arithmetics were first published by Charles Scribner's Sons, but subsequently they were purchased by Messrs. Ivison, Blakeman & Co., who continue to publish them.

First Lessons is not a primary arithmetic, but a storehouse from which the teacher may draw material for the instruction of his pupils. The book is filled with suggestive illustrations. It is a good manual to put into the hands of little children, that they may look at the pictures, if the teacher knows how to ask the right sort of questions afterwards.

The Primary Arithmetics.—While the old Primary is a good beginning book, the New Primary is much better. In both books mental exercises are followed by written work, in which larger numbers are used than in the mental problems. The authors hold that the teacher should carefully criticise the pupil's work with reference to the following points: 1. Accuracy; 2. Correct form of figures; 3. Neatness of general appearance; 4. Time required to complete the exercise.

The Intermediate Arithmetics.—There is so little difference between these books, except in appearance, that it is difficult to decide which is the better. Both are excellent drill books.

New Practical.—This book was prepared by Selim H. Peabody, A. M. The book is divided logically into three parts: 1. Elementary Review; 2. Commercial Arithmetic; 3. Mensuration and Mechanics. This is a logical, consistent, and teachable text-book, and is one of the best if not the best book of the entire series.

Advanced Arithmetic.—This is the third book, and it continues the subject where the New Intermediate leaves it.

There is little difference between the Advanced and the second part of the Complete Arithmetic. In some respects the Advanced is fuller in problems, yet on many pages the examples are the same. The chapter on mensuration in the Advanced is very complete.

The New Intermediate and the Advanced slightly modified constitute the Complete Arithmetic.

The New Practical and the Complete, using the Advanced for the second part of the Complete, are superior text-books.

1865. ORTON & FULLER.

New Mathematics, or Lightning Calculator. The Shortest and most Rapid Method of Computing Numbers, within The Comprehension of all having The slightest Knowledge of Figures. Cincinnati: Moore, Wilstach & Baldwin, Printers, No. 25 West Fourth Street. 1865.

16mo, 79 pp.—A. M.

1865. ADOLPH MÜLLER.

Praktisches Rechenbuch für die Mittelklassen der Volksschulen in den Vereinigten Staaten von Amerika. Von Adolph Müller. St. Louis, Mo.: Verlag der Conrad Witter'schen Schulbuchhandlung. 1865.

18mo, 155 pp.—A. M.

1865. MEHREREN LEHRERN.

Mehreren Lehrern in New York und St. Louis. Praktisches Rechenbuch für die Unterklassen der Volksschulen in den Vereinigten Staaten von Amerika. Von mehreren Lehrern in New York und St. Louis. First Book. St. Louis. Mo.: Verlag der Conrad Witter'schen Schulbuchhandlung. 1865.

16mo, 122 pp.—A. M.

1866. PAUL ALLEN TOWNE.

Prof. Paul Allen Towne was born at Hardwick, Mass., in 1823, and at present he resides in the city of New York. He spent many years in the South engaged in teaching. In addition to his mathematical writings, he is a contributor to educational periodicals and scientific journals.

SERIES OF MATHEMATICS.

Professor Towne's series of mathematics comprises Towne's Primary Arithmetic, Towne's Intermediate Arithmetic, Towne's Mental Arithmetic, Towne's Practical Arithmetic, Towne's Algebra, Key to the Algebra.

The Primary Arithmetic is a book of 144 pages. It was published in 1867. It contains no numbers above 1,000. All formal definitions are excluded, and yet technical terms are so introduced as to make familiar both the words and their exact meaning.

The Intermediate Arithmetic, a volume of 216 pages, was published in 1867. A special feature

of this book is the "Model Recitations" found on almost every page. These recitations, properly made, force the pupil into a thorough examination of every step in his progress. No rule is given until by numerous synthetic and analytic recitations it must have been suggested to the mind of the pupil.

The Mental Arithmetic is a book of 176 pages. It is intended to be studied in conjunction with the Intermediate and large Practical Arithmetics.

The Practical Arithmetic contains 330 pages. Its title page reads—

ARITHMETIC: | Adapted to the | Course of Instruction Usually Pursued | in the | Academies and Common Schools | of the | United States. | By P. A. Towne, | Formerly General Principal of the Barton Academy, Mobile, Alabama. | Louisville, Ky.; | John P. Morton & Co. | 1866.

In this arithmetic decimal fractions are introduced as the offspring of decimal notation and not of vulgar fractions, for the sake of scientific accuracy, as well as for the early insertion of problems involving questions of United States money.

The general characteristic features of this series of mathematics are—1. Clear and exhaustive definitions; 2. Early introduction of decimal fractions; 3. Improved operations in solving problems; 4. Models for recitations; 5. Clear and brief analyses; 6. The beautiful typography of the whole series.

1866. REGENTS' ARITHMETIC.

This is a compilation of the arithmetical questions submitted by the regents for admission to the University of the State of New York from 1866 to 1882. The assistant secretary, Daniel J. Pratt, A. M., Ph. D., submitted the list to C. W. Bardeen for publication in 1866, 1880, 1887.

Part I contains 1,293 problems.

The following little books published by C. W. Bardeen, Syracuse, are handy and helpful:

1. Suggestions for Teaching Fractions, W. W. Davis, 1880, 43 pages.
2. Metric Tables and Problems, Oscar Granger, 1883, 23 pages.
3. Thirty problems in percentage, W. W. Bradford, 1877, 33 pages.
4. Latitude and Time, J. Anthony Bassett, 1883, 42 pages.
5. Dime Question Book, Albert P. Southwick, 1883, 36 pages.

1866. JOHN H. FRENCH, LL. D.

John H. French was born at Batavia, N. Y., July 7, 1824. His early educational advantages were very limited. He worked on a farm during the summers, and attended school a few months each winter. At the age of 17 he began teaching. When 21 he revised Adams's Arithmetic, and two years later he wrote Adams's series of mathematics. In 1849 he was chosen principal of the Clyde High School, New York, where he remained for three years. Next he accepted the principalship of the Newtown Academy in Connecticut; but returned to his native State in 1855, when he engaged in publishing county maps. The four years following he was engaged in the preparation of a map and gazetteer of the State of New York. During this period he worked on the revision of Robinson's series of mathematics. In 1866–1869 he prepared a series of arithmetics published by Harper Bros. In 1865 he was superintendent of schools of Syracuse, N. Y., and immediately after called to take charge of the training department in the Albany State Normal School. In 1870 he was appointed secretary of the State Board of Education of Vermont, which position he filled for five years. From 1878 to 1881 he was principal of the Indiana Normal School in Pennsylvania. He resigned on account of ill health, and was soon afterwards appointed institute conductor for the State of New York, which position he held at the time of his death at Rochester, N. Y., December 23, 1888.

This series consists of four books: First Lessons in Numbers, 120 pages, 1866; Elementary Arithmetic, 220 pages, 1867; Mental Arithmetic, 180 pages, 1870; Common School Arithmetic, 348 pages, 1869.

The plan of these books was fully matured in the author's mind before he set about writing them. They assume that there is a natural order in the unfolding of the mental faculties, and that the subjects are adapted to this order. Clear ideas and practical knowledge in the application of numbers to the business affairs of life distinguish this series of arithmetics from most other works.

In the First Lessons the author claims that the natural order of teaching children numbers is: 1. Visible objects; 2. Concrete numbers; 3. Abstract numbers. This book is handsomely illustrated.

The Elementary Arithmetic is one of the very best manuals that has been written on this subject. The definitions are pointed, accurate, and comprehensive. Principles are deduced from exercises inductively presented and are fixed firmly in the mind by the solution of copious examples.

The methods of proof are made to depend upon the pupil's ability to reason correctly.

The Mental Arithmetic.—This "mental arithmetic" teaches two things: 1. That the pupil should acquire accuracy and rapidity in combining and separating numbers; 2. That he should learn to reason correctly. This book is a teachable one.

The Common School Arithmetic.—The last book of this series is one of the most systematic text-books that has been produced in this country. Instead of writing arithmetics, and arithmetics only, Professor French has made a profound study of child mind, and he brought his psychology down from lofty heights and put much of it in his arithmetics. This is evident to anyone who will catch his ideas from the presentation of the subjects he discusses and the many valuable suggestions that he has given to help teachers to understand the subject and how to teach it and how children should learn it.

These are good books, prepared by an educator of clear and keen insight into the workings of child mind.

Harper & Bros. publish these books in excellent style.

1866. GEORGE A. WALTON.

George Augustus Walton, A. M., was born at South Reading, Mass., February 22, 1822. He received his schooling at the common schools and academies in his native place, and afterwards graduated at the State normal school at Bridgewater, Mass. From the time of his graduation in 1843 he taught continuously until 1868.

Since 1861 Mr. Walton has been employed as instructor and conductor of teachers' institutes in Massachusetts, New York, and Virginia. He was appointed agent of the Massachusetts State board of education in 1869, which office he still holds. He is the author of: Primary Arithmetic, 1866, 1869, 12mo, 96 pages; Intellectual Arithmetic, 1866, 1869, 12mo, 176 pages; Illustrative Practical Arithmetic, 1869, 12mo, 336 pages; Written Arithmetic, 1864, 12mo, 348 pages; Walton and Cogswell's Arithmetical Problems and Key, 1872, 12mo, 144 pages; Dictation Exercises, 1866, 12mo, 108 pages.

These books are now published by Messrs. J. H. Butler, Philadelphia, and William Ware & Co., Boston.

The general plan of the books is, by practice, to make the pupil rapid and exact in handling numbers. Drill work and plenty of it are the means the author believes in to secure accuracy. Interest is first created in the subject, and then inductively and progressively the child moves forward in the work which is so attractive to him.

The Primary Arithmetic treats the subject from an objective standpoint. Addition and subtraction are taught together; also multiplication and division.

Walton's Intellectual Arithmetic.—This is a joint production by George A. Walton, A. M., and Electa N. L. Walton. The intellectual part of the book closes with page 149, while a short treatise on written arithmetic fills 16 additional pages. To develop and train the mind is the design of the authors rather than to make expert mental arithmeticians. It is what is called "an easy mental arithmetic." Two editions were issued, the first in 1866 and the second in 1869.

Illustrative Practical Arithmetic.—This is indeed a most excellent common-school arithmetic. The subjects are presented in their natural order. Familiar illustrations are employed to excite correct ideas in regard to numbers. Special cases lead gradually to generalizations. Unity of purpose runs through each set of problems. The pupil is taught how to do one thing well before learning several ways of doing it. Electa N. L. Walton assisted in the preparation of this book.

Walton's Written Arithmetic.—The Written Arithmetic was published in 1864, and it is designed to prepare the pupil for the actual duties of life. The table of contents includes the following subdivisions: 1. Simple numbers; 2. Federal money; 3. Properties of numbers; 4. Fractions; 5. Compound denominate numbers; 6. Decimal fractions; 7. Percentage; 8. Miscellaneous; 9. Appendix. Each subject is ably treated, and definitions, explanations, and solutions, are such as the learner can readily understand.

Written Arithmetic.—The chief merit of this book is the great variety of exercises that it presents. These drills, or exercises, are given to perfect the pupil in the practical applications

of the science. Decimals and integers are treated, usually, together. Curious and puzzling problems are omitted. Principles are referred to a few general rules, and the pupil is afforded a good opportunity to test his own judgment in solving problems.

The Book of Problems.—This book is what its title indicates—containing over 12,000 problems for drill in the various subjects of arithmetic. It is in the line of "drill exercises" that Mr. Walton excels. He knows *how* "to ring the changes on problems."

1866. ORTON'S LIGHTNING CALCULATOR.

Hoy D. Orton puts in italicized letters on the title page, "*Energy is the price of success*," and this is indicative of the work throughout, which consists of "short cuts" in the fundamental rules—cancellation, interest, square and cube roots, mensuration, weights and measures, and astronomical calculations. Common sense and practice make perfect according to this author, who achieved such wonderful notoriety in handling numbers.

The volume is a 12mo, 194 pages, and was published by T. K. Collins, Philadelphia, in 1866.

1866. W. MILLER.

Praktische Buchrechnung, veranschaulicht durch Kreise mit ihren Sectoren, für die Oberklassen der deutschen Schulen in den Vereinigten Staaten von Amerika. Von W. Miller, Lehrer in New York. St. Louis, Mo.: Verlag der Conrad Witter'schen Schulbuchhandlung. 1866.

18mo., 72 pp.—A. M.

1866. S. S. WOOD.

A Concise and Methodical Statement of the Definitions, Principles, and Rules of Practical Arithmetic. By S. S. Wood, Graduate State Normal School. New York: Baker & Godwin, Printers, Printing-House Square. 1866.

18mo, 68 pp.—A. M.

1866. WILLIAM R. G. HUMPHREY.

The Western Abbreviated or Practical One Rule Arithmetic, where the Rule is Illustrated and its Principles made Plain. Compiled by Wm. R. G. Humphrey, Springfield, Illinois: Ben. A. Richards, Printer. 1866.

24mo, 30 pp.—A. M.

1866. JOS. DEGHUÉE.

Aufgaben und Anleitung zum Schriftlichen Rechnen. Für deutsche Schulen in den Vereinigten Staaten. Von Jos. Deghuée. Erster Theil, 84 pp.; Zweiter Theil, 102 pp.; Antworten, 42 pp. New York: E. Steiger. 1866.

German and English. Double-column pages, first German, second English. 8vo.—A. M.

1866. BENJAMIN NAYLOR.

The Radical Mental Calculator, and Student's Guide to a Knowledge of the Powers of Numbers. By Benjamin Naylor, Author of the "Speedy Calculator," and of "Naylor's System of Teaching Geography." Philadelphia: Published by the Author. 1866.

12 mo, 84 pp.—A. M.

1867. BASIS OF ARITHMETIC.

This book is a collection of tables and exercises for beginners. The author, Richard S. Jameson, says: "The Basis of Arithmetic is what its name purports—a primer for beginners—not a treatise for the instruction or guidance of teachers. * * * The nature of numbers, the values of measures, and the use of arithmetical signs can not well be learned by the young from books. They must be explained by the living teacher."

The volume is a thin 12mo, 48 pages, and it is published by J. W. Schermerhorn & Co., New York.

1867. T. A. BRYCE.

The American Commercial Arithmetic, for the use of Commercial Colleges, Private Students, Schools and Counting Houses, embracing an Extensive Course both in Theory and Practice together with the Laws of the United States relating to Interest, Damages on Bills, and the Collecting of Debts. By T. A. Bryce, M. A., LL. D., Author of Treatises on Algebra and Geometry. Used in the Erie Business College. Erie, Penn.[1]: Published by T. Cook & Co., Business College. 1867.

8vo, 341 pp.—A. M.

1867. A. D. Y. HENRIQUES.

Modern Mercantile Calculator, a Companion for the Accountant and Book-keeper practically and illustratively arranged for the use of Bankers, Brokers, Commission Agents, Factors, Book-keepers, Accountants, and Teachers. Elucidating the Shortest and Most Correct Methods of Working out all Problems of Investments, Equations, Discounts, Interest, Domestic and Foreign Exchanges, &c., and embracing every variety of Calculation used in the Counting-House which have never before been published. By A. D. Y. Henriques. New York: J. M. Bradstreet & Son, Printers and Publishers. 1867.

8vo, 369 pp.—A. M.

1867. E. S. WINSLOW.

The Merchants' Calculator and Accountants' Desk Companion; or, Mathematics and Mathematical Data applicable to the Business Transactions of Business Men. By E. S. Winslow, Author of Winslow's Comprehensive Mathematics, the Universal Modern Cambist and Foreign and Domestic Commercial Calculator, The Machinists' and Mechanics' Practical Calculator and Guide, Etc. Boston: Published by The Author. 1872.

16mo, 171 + 32 pp. Copyright, 1867.—A. M.

1867. D. H. CRUTTENDEN.

The Young Pupils' Arithmetic Objectively or Synthetically Arranged. By D. H. Cruttenden, A. M., author of "The Rhetorical Grammar," "The Philosophy of Language," etc. Fourth Edition. New York: Published by J. M. Bradstreet & Son, 18 Beekman Street. 1869.

16mo, 96 pp.—A. M.

The Objective or Synthetic Arithmetic in which the Science is learned from the Art. By D. H. Cruttenden, A. M. First Course. New York: Published by J. M. Bradstreet & Son. 1868.

12mo, 396 pp.—A. M.

1867. WILHELM GRANERT.

Turner-Schulbücher. VI. Leitfaden der Weltgeschichte. Herausgegeben durch den Vorort des Nordamerikanischen Turnerbundes unter Begutachtung einer Commission Schulmänner. Verfasst von Wilhelm Granert, A. M.

New York. 1867. pp. 181. A. M.

1867. J. A. HAWORTH.

Haworth's Key to Lightning Calculations. All kinds of Business Calculations taught in the Shortest and Most Simple Manner. A Guide to the School Boy, the Graduate, the Farmer, the Banker, and any one having the slightest knowledge of numbers. By J. A. Haworth. Cincinnati: H. O. Homan & Co., Printers, No. 118 West Fourth Street. 1867.

18mo, 144 pp.—A. M.

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[1] I have a copy of an edition published at Cleveland, Ohio, by Musgrove & Wright, in 1867, containing 368 pages.—A. M.

1867. NELSON'S ARITHMETIC.

Richard Nelson's Arithmetic was published in 1867 by R. W. Carroll & Co., Cincinnati.

It is a practical treatise of 299 pp., devoted, according to the author, to the general purposes of life. These purposes, judging from an examination of the work itself, lie in the direction largely of commercial arithmetic.

1868. GROESBECK COMMERCIAL ARITHMETIC.

A business arithmetic is composed usually of three distinct features: 1. Short cuts in addition, multiplication, fractions, and interest; 2. Various forms of business paper, some legal information, labor-saving tables, etc.; 3. Business correspondence. In the respects mentioned, this arithmetic, prepared by John Groesbeck, is an ideal book. There is not much arithmetic in it, but what there is is handy; the legal hints are sound, and the other information such as any person needs.

I have the eighth edition of 1869, a 12mo, 348 pp.; it was entered for copyright in 1868, and is published by Eldredge & Bro., Philadelphia.

1868. WHITMAN PECK.

A Practical Business Arithmetic, for Common Schools and Academies. Including a great variety of Promiscuous Examples. By Whitman Peck, A. M., Author of the Promiscuous Exercises in Andrew's Latin Lessons (Revised Edition.) New York: J. W. Schermerhorn & Co., Publishers, 14 Bond Street. 1868.

12mo, 293 pp.—A. M.

1868. D. H. CRUTTENDEN.

Second Course. The Subjective or Analytic Arithmetic, in which the Science is applied to the Art. By D. H. Cruttenden, A. M. No. III. Fourth Edition. New York: Published by J. M. Bradstreet & Son. 1870. Copyright 1868.

12mo, 390 pp.—A. M.

1868. JEAN MACÉ.

Grand-Papa's Arithmetic: A Story of Two Little Apple Merchants. By Jean Macé. New York: P. S. Wynkoop & Son. 1868.

Small 12mo, 142 pp. Not copyrighted.—A. M.

1869. CHARLES S. VENABLE, LL. D.

The subject of this sketch was born in Prince Edward County, Va., in 1827. After receiving a common-school education he studied in the University of Virginia, and afterwards in the universities of Berlin and Bonn. He was for a time professor of mathematics in Hampden-Sidney College, Virginia, and later professor of mathematics and astronomy in the University of South Carolina. For a while he held the chair of physics and chemistry in the University of Georgia. In September, 1865, he was elected professor of mathematics in the University of Virginia, which position he still holds. For five years he was chairman of the faculty of the university. The degree of LL. D. was conferred upon him by the University of South Carolina.

Since his connection with the University of Virginia the University Publishing Company, New York, has published the following mathematical works by Professor Venable: 1. First Lessons in Numbers, 16mo, 128 pages; 2. Intermediate Arithmetic, 16mo, 256 pages; 3. Practical Arithmetic, 12mo, 348 pages; 4. Mental Arithmetic, 16mo, 160 pages; 5. New Elementary Arithmetic, 12mo; 6. New Practical Arithmetic; 7. Key to Arithmetics; 8. Easy Algebra, 12mo; 9. High School Algebra, 12mo; 10. Keys to Algebras; 11. Elements of Geometry, crown 8vo; 12. Notes on Analytical Solid Geometry, crown 8vo.

THE ARITHMETICS.

First Lessons begins with the unit and gradually the four fundamental operations in numbers are unfolded. At every step the mind is aided through the eye by pictorial illustrations. The author combines in a happy manner oral and slate work.

THE INTERMEDIATE ARITHMETIC.

This forms the connecting link between the First Lessons and the Practical. Mental and written work are combined throughout the text, which is sufficiently full to give the pupil a good, practical knowledge of arithmetic through interest. The subjects are well adapted to the capacities of the intermediate classes of pupils in graded schools. It is a book that can be well finished by average classes.

THE PRACTICAL ARITHMETIC.

This is a good, strong book, and is regarded as being sufficiently comprehensive as to render a higher treatise unnecessary. The problems are varied in kind and numerous in quantity, and partake largely of practical affairs. It is a modern book in arrangement of matter and in the treatment of topics.

MENTAL ARITHMETIC.

This little volume appears to have been thrown into the series as an afterthought as a drill book for those teachers who had lingering doubts about doing away entirely with mental arithmetic.

NEW ELEMENTARY ARITHMETIC.

This is the first volume of a two-book series. The child is supposed to be started orally in the text, and in time he begins the work himself. In the preparation of this book the author's primary and intermediate arithmetics are combined and revised in such a manner as to embrace about four years of work in graded schools.

This volume will be followed by the New Practical, thus completing the series.

1869. C. P. BUCKINGHAM.

A new Arithmetic on the Unit System: in which the Fundamental Principles of Arithmetic are familiarly explained and illustrated. By C. P. Buckingham, formerly Assistant Professor of Natural Philosophy in the U. S. Military Academy, and Professor of Mathematics and Natural Philosophy in Kenyon College, Ohio. Philadelphia: Claxton, Remsen & Haffelfinger. 1869.

12mo, 447 pp.

An edition was issued with an inserted title page, dated 1872, and copyrighted in 1871, with title changed to the following: "The Principles of Arithmetic, Explained and Illustrated;" using the same book or original edition of 1869.

Catharinus Putnam Buckingham was born in Springfield (now part of Zanesville), Ohio, March 14, 1808; died ——. He was graduated at the United States Military Academy in 1829 and served as second lieutenant in the Third Artillery on topographical duty till August 19, 1830, and as assistant professor of natural and experimental philosophy at West Point till August 28, 1831. He resigned from the Army September 30, 1831, and from 1833 till 1836 was professor of mathematics and natural philosophy in Kenyon College, Ohio. May 3, 1861, he was appointed assistant adjutant-general of Ohio; May 8, commissary-general; July 1, adjutant-general, serving until April 2, 1862. He became brigadier-general of volunteers July 16, 1862, and served on special duty in the War Department, at Washington, till February 11, 1863, when he resigned. General Buckingham was author of an excellent treatise on the differential and integral calculus. The first edition was published in 1875, and a second, revised, in 1880.—A. M.

1869. W. H. KORFMACHER.

Rechenbuch für Elementarschulen. Nach der Methode von A. Richter und J. Grönings, Seminarlehrern. Für deutsche Schulen in den Vereinigten Staaten Nord-Amerika's bearbeitet von W. H. Korfmacher, Lehrer in St. Louis. Erster Theil. Für die Unterklasse. Vierte Auflage. St. Louis, Mo. Verlag von F. Galer's Buchhandlung, 1869.

16mo, 81 pp.

Zweiter Theil. Für die Mittelklasse. Fünfte Auflage, 1869.

16mo, 186 pp.

Dritter Theil. Für die Oberklasse. Zweite Auflage, 1870. 16mo, 332 pp.—A. M.

1869. H. DALMON.

Metrical Pocket-Book; or, Manual of Weights, Measures and Coins. For the Use of Merchants, Clerks, Travelers, Statisticians, Jewelers, Physicians, Chemists, Engineers, Mechanics, Students and Teachers; containing the Principles of the Metric System; Scales and Tables for the reduction of all the Metric, English and United States Standards; Tables of the more important Foreign Weights, Measures and Coins, with their English and Metric Equivalents, Etc., Etc. By H. Dalmon. Philadelphia: J. B. Lippincott & Co. 1870.

Small 18mo, 54 pp.—A. M.

1869. JACOB J. PERES.

The Child's Arithmetical Example Book and Teacher's Key combined, by Jacob J. Peres, late President of Memphis Board of School Visitors. Chicago: Geo. Sherwood & Co., n. d.

18mo, 48 pp. Copyright, 1869.—A. M.

1869. JOHN E. WADE.

The Mathematical Velocipede; or, Instantaneous Method of Computing Numbers. By John E. Wade.

18mo, 144 pp., n. d., n. p., copyright, 1869.—A. M.

1870. WHITE'S ARITHMETIC.

In 1870 Messrs. Van Antwerp, Bragg & Co. published Dr. Emerson E. White's two-book series of arithmetics, and in 1883 the same firm issued a revised edition. In the preparation of this series the author deviated from the plan usually pursued by others of patching up a two-book series by selecting from three or more books of a series such matter as would constitute a shorter course.

The plan of the author was to arrange an "elementary arithmetic" that would give enough of the subject for pupils through the third, fourth, and fifth grades of city, town, and village schools. Children taking such a course upon leaving school at the end of the fifth year would have acquired a fair working knowledge of arithmetic as far as the computation of simple interest. This groundwork—the Elementary Arithmetic—is designed to accomplish by suitably uniting oral and written exercises in integral and fractional numbers. The inductive method of instruction is followed in the presentation of all subjects. It is emphatically a "drill book for pupils."

It is neatly bound, well printed, and forms a volume of 208 pages.

THE COMPLETE ARITHMETIC.

This is an enlarged growth of the elementary.

The plan of treating each subject is divided into four steps: 1, problems, oral and written; 2, definitions; 3, principles; 4, rule.

There are 360 pages in the book, and it is an attractive volume in appearance as well as in subject-matter.

The title, Complete Arithmetic, is somewhat misleading, since the book is complete in name only.

In both these arithmetics the author combines oral and written work about equally, and for the obvious reason that by such a union the mental arithmetic is not needed.

ORAL LESSONS IN NUMBER.

In this manual, which is designed to guide the teacher during the first, second, and third years of the child's school work in arithmetic, the author sets forth his method of teaching oral arithmetic to children. The directions and model lessons are plain, simple, and easily followed, and are worked out with great care. It is what might be properly called a minute elaboration of the subject with specific directions to teachers.

Emerson Elbridge White was born in Mantua, Portage County, Ohio, January 10, 1829. He was educated at Ewinsburg Academy and the University of Cleveland, taught in the former

institution, and was afterwards an instructor of mathematics in Cleveland University, and principal of the Central High School in that city. He became superintendent of the public schools of Portsmouth, Ohio, in 1856, State commissioner of common schools in 1863, was president of Purdue University 1876-1883, and since that time has been superintendent of schools in Cincinnati.—A. M.

1870. JOHN E. WADE.

The Merchants and Mechanics'. Commercial Arithmetic; or, Instantaneous Method of Computing Numbers. By John E. Wade. New York: Russell Brothers, Publishers, 17, 19, 21, 23 Ross Street. 1878.

18mo, 144 pp. The same book as the one above, with a different title-page.—A. M.

1870. G. L. DEMAREST.

Atlantic Primary Arithmetic. Simple Numbers. By G. L. Demarest. Boston: Ginn Brothers and Company, 13 Beacon Street. 1870.

16mo, 252 pp.—A. M.

1870. REV. URIAS JESSE KNISELY.

Arithmetical Questions for the Recreation of the Teacher and the Discipline of the Pupil. By Rev. U. Jesse Knisely. Philadelphia: Cowperthwait & Co. 1870.

12mo, 69 pp.—A. M.

Rev. Urias Jesse Knisely was born in New Philadelphia, Ohio, March 14, 1838; died May 19, 1881. He was in a great measure self-educated. The degree of M. A. was conferred on him by Marietta College, and that of Ph. D. by Wittenberg College, in which latter institution he had formerly been a classical and theological student. He also attended Jefferson College, Pennsylvania, but was not a graduate of any college. He was chosen president and professor of mathematics of Luther College, an institution of ephemeral existence. Rev. Dr. Knisely was a Lutheran minister of marked ability and great eloquence, and for the fourteen years previous to his death he was pastor of the church of that denomination at Newcomerstown, Ohio. He was a fine mathematician, and excelled especially in the solution of algebraical and geometrical problems. His last work was the revision of Ray's Higher Arithmetic and the key, in connection with Professor Greenwood, which he completed but a short time before his death.—A. M.

1870. JOHN B. JONES.

Elementary Arithmetic, in Cherokee and English, Designed for Beginners. By John B. Jones. Prepared by the Authority of the Cherokee National Council. Cherokee National Press: Tahlequah, Cherokee Nation. 1870.

Boards, 61 double pages; first page, Cherokee; second, English.—A. M.

1871. HANNA'S ARITHMETIC.

Hanna's Complete Ready Reckoner and Log, Table, and Form Book is one of those handy pocket manuals which are designed to save time to the business man, the architect, mechanic, farmer, lumber inspector, etc. It contains 20 tables, and is heartily indorsed by lumber dealers. It is a small 12mo, 203 pages, published by J. B. Lippincott & Co., Philadelphia, 1871.

1871. SHELTON PALMER SANFORD, A. M.

Shelton Palmer Sanford was born in Greensboro, Ga., January 25, 1816. He received his early education in Greensboro. He entered the freshman class of the State university in 1835. It was here that he fully developed his natural fondness for mathematics and laid the foundation of the mathematical knowledge which places him in the forefront of the instructors of the day.

He graduated in 1838. Three months before he graduated Mr. Sanford was elected tutor of mathematics in Mercer University, and he entered on his duties the week following his graduation, at the age of 22. It is rare that a man receives such a tribute to his excellence so early in life.

In 1840 he was elected professor of mathematics in Mercer University, Macon, Ga., which position he still holds.

Professor Sanford is the author of a series of arithmetics which have a national reputation for superior excellence, and which have a very extended circulation not only throughout the South, but in many portions of the North.

The only living representative of the first board of instruction appointed at the organization of the university in 1838, Professor Sanford is now in the fiftieth year of his service as professor of mathematics, wide awake, and abreast of the times. Still vigorous, elastic, and energetic in mind and body, his daily instructions are full of vivacity, arresting and holding the attention of the student and making abstruse mathematical principles clear and simple.

His arithmetics constitute a series of four books: Primary Analytic Arithmetic, Intermediate Arithmetic, Common School Analytical Arithmetic, Higher Analytical Arithmetic. They are published by Messrs. J. B. Lippincott & Co., Philadelphia.

The Primary combines simple exercises in oral and written work. It is an easy drill book, and is designed to give small children clear and distinct notions of the elementary combinations and separations of numbers. The numerous illustrations throughout the text appeal directly to the eye of the learner, and thus help him to set principles more firmly in his mind. The four fundamental rules and an introduction to fractions are included in the 130 pages composing the book.

The Intermediate Arithmetic is a grade higher than the Primary, and it is also preliminary to the Common School Arithmetic. The following subheads indicate the character of this work: 1. Of numbers; 2. Fundamental rules; 3. Fractions; 4. Federal money; 5. Compound quantities; 6. Percentage; 7. Miscellaneous questions, by analysis exclusively. This is a good elementary arithmetic, in which oral and written exercises are combined. It and the Primary were published in 1871.

The Common School Arithmetic is a 12mo of 355 pages. This volume, as well as the former ones, is analytic in its nature. The author gives the problems and the learner is expected to find out solutions. The plan of the book is to make the pupil an intelligent thinker rather than a mere mechanical recorder of figures. The book was entered for copyright in 1872.

The Higher Arithmetic is a well-arranged treatise of 419 pages. The definitions are clear; the principles are well illustrated, and the exercises are original. To reduce the science to its last analysis without the aid of formal rules is what the author proposes to do in this book. The chapter of miscellaneous problems is very interesting.

1871. HAGAR'S MATHEMATICAL SERIES.

This series is published by Cowperthwait & Co., Philadelphia. It contains: 1. Hagar's Primary Lessons in Numbers, 1871; 2. Hagar's Elementary Arithmetic, 1871; 3. Hagar's Common School Arithmetic, 1871; 4. Hagar's Elementary Algebra, 1873.

For teachers: Dictation Problems and Reviews in Arithmetic, 1874; Key to Hagar's Common School Arithmetic, 1874; Key to Hagar's Elementary Algebra, 1874.

This is a series of arithmetics consisting of three books: Primary Lessons in Numbers, Elementary Arithmetic, and Common School Arithmetic. Mental and written exercises are combined in each book of the series, and their connection is such that the Primary Lessons and the Elementary Arithmetic form an abridged course and the Primary and the Common School form a complete course.

Primary Lessons.—The aim of this book is to teach one thing at a time by the presentation of ideas of number objectively and in their natural order. The exercises are simple, progressive, and illustrative. They require little, if any, explanation.

Elementary Arithmetic.—In this work the principles and rules are established by induction. Processes are stated concisely, yet clearly. This work meets the wants of intermediate classes in graded schools. There is a strong, vigorous tone running through the book.

The Common School Arithmetic.—This is a teachable book. Its title indicates its scope and character. It is also a strict arithmetic, arranged upon the plan that questions must be definitely answered, principles and rules exactly recited, and all forms of solutions logically and concisely expressed. The exercises are designed to cultivate the habits of self-reliance and independence in the pupils.

Dictation problems may be used to supplement the author's course or to furnish additional problems with any other text-book. The examination questions are very suggestive, and they constitute a valuable chapter of 14 pages.

Daniel Barnard Hagar was born at Newton Lower Falls, Mass., April 22, 1820. He received his early education in the schools of his native town. After some years of service in a paper manufactory at home and in a dry-goods store in Boston he was prepared for college under private instruction. He received his collegiate education at Union College, Schenectady, N. Y., graduating in 1843. After graduation he was for nearly five years principal of the academy at Canajoharie, N. Y., and was also superintendent of schools in that city. In 1848 he became principal of the large academy at Norwich, N. Y., and in 1849 principal of the Eliot High School at Jamaica Plain, now a part of Boston, which position he held for sixteen years. In 1865 he accepted the position of principal of the State Normal School at Salem, Mass., and he continues to hold it to the present time.

For about ten years he served as an editor of the Massachusetts Teacher. He has delivered many lectures before educational associations. He prepared a history of the Massachusetts Teachers' Association from its organization, in 1845, to 1880.

Believing in the great value of united action among teachers, he has done what he could to promote the interests of teachers' associations. While never in any way seeking for official positions in such associations, he has served as president of the Montgomery County (N. Y.) Teachers' Association, of the Norfolk County (Mass.) Association, of the Massachusetts State Teachers' Association, of the American Institute of Instruction, of the American Normal School Association, of the National Teachers' Association, and of the National Council of Education.

The call for the meeting which was held in Philadelphia in 1857 for the organization of the National Teachers' Association and the original constitution of that body were written by him.

1871. B. S. POTTER AND R. B. WELCH.

Common Sense Applied to Numbers; or, Lightning Addition Reduced to a System. Being a Classification of the Nine Digits into Syllables and Words, by means of which a Column or Columns of Figures may be read as rapidly as a line of Letters in our Written Language; also, Short Methods for Multiplication, Interest, Etc., Etc. A Work of Vast Importance to Accountants, Teachers, and Business Men Generally. By B. S. Potter, A. M., and R. B. Welch. Price one dollar. Bloomington, Ill.: Published for The Authors. 1871.

18mo, 60 pp.—A. M.

1871. B. S. POTTER, R. B. WELCH, & J. E. ANDERSON.

Common Sense Applied to Numbers, or the Word System in reading columns of Figures Explained and Exemplified. By B. S. Potter, A. M., and R. B. Welch. Second Revised Edition. By R. B. Welch, and J. E. Anderson, B. Ph. Quincy, Ill., 1874.

48 pp. Copyright 1871.—A. M.

1871. LELAND BURTON.

Burton's Lightning Arithmetic especially adapted to Class Teaching. Designed as a Self Instructor or Pocket Companion. The Shortest, most Rapid, and Simplest Method ever known; adapted to every Kind of Business; suitable for the Beginner, yet will give the Finishing Touch to a Graduate. Progress is a Law of God. Leland Burton, Professor of Mathematics. Address all orders for this Book to Bowman & Matthews, 510 Pine Street, St. Louis. Or W. A. Reed, Fayetteville, Arkansas. Single copies by mail, $1.00. 1871.

Small 18mo., 109 pages.—A. M.

1871. LORENZO FAIRBANKS.

A Practical Business Arithmetic; designed as a Text-Book for Commercial Colleges, Academies, and High Schools, and for the Use of Business Men, Accountants, Clerks, and Private Students. By Lorenzo Fairbanks, A. M., author of a Treatise on Bookkeeping by Double and Single Entry. University Publishing Company, New York. 1886.

12mo, 440 pages. Copyright 1871.—A. M.

1872. WILLIAM S. HUTCHINGS.

The Lightning Calculator: A New, Readable and Valuable Book, containing Three New Processes of Addition, Four New Forms of Multiplication, Rapid Processes of Squaring and Cubing, Subtraction and Division, his Improved Form of Interest, and Valuable Information in Book-Keeping; together with a History of his Remarkable Life, his Wonderful Discoveries in Numbers, his Amusing and Instructive Parlor Feats, Etc., with his Autograph. Just issued by Professor Hutchings. New York: Press of Wynkoop & Hallenbeck, 116 Fulton Street. 1872.

18mo, 12 pages. My copy does not contain "his Autograph." This pamphlet does not seem to be the complete work described above, and may be only an advertising circular, as it is not copyrighted.—A. M.

1872. W. POWELL WARE.

Prof. Ware's $10,000 Prize Rule for the Equation of Payments. Two-thirds of the time and labor saved—requiring only one division in debit and credit accounts. To which is appended Rankin's Perpetual Almanac. Philadelphia: Claxton, Remsen & Haffelfinger, 624, 626 & 628 Market Street. 1877.

Small 18mo, 47 pp. Copyright 1872.—A. M.

1872. T. W. NIXON.

Nixon's New Method of Teaching Children Multiplication Tables and Remembering Historical Dates. Our Success depends on Practice. T. W. Nixon, Sole Author. Baltimore: Printed by F. A. Hanzschue, No. 166 W. Baltimore Street. 1872.

16mo, 24 p.—A. M.

1872. JOHN SCHMITT.

John Schmitt's New Rules of Multiplication, containing several Entire New Rules of Multiplication, with Sufficient Examples to make the work a ready Reckoner, from 1×1 to 90×90. Kansas City, Mo. For sale by Christ. Schmitt, 710 Main Street. 1872.

Small 18mo, 67 pp.—A. M.

1873. J. A. HENDERSON'S ARITHMETIC.

Henderson's Intellectual and Practical Calculator is a 12mo book of 107 pages. It was published in San Francisco in 1873. The author's theory is this: "It is better to know everything about something than something about everything."

The work is one of those in which the learner is taught how to maneuver with numbers with speed and accuracy. It is similar in character to Orton's Lightning Calculator, but less in its scope.

1873. CHRISTIAN ROPP, Jr.

Ropp's Rapid Reckoner and Commercial Calculator; a New, Practical, and Scientific System of Calculation, unequaled for Simplicity, Brevity, and Accuracy. Also, a series of Original, Useful, and Convenient Tables. By Christian Ropp, Jr., Bloomington, Ill.: Published by the Author, 1873.

18mo, 76 pp.—A. M.

1873. DAVID WHITE GOODRICH.

The Art of Computation, designed to teach Practical Methods of Reckoning with Accuracy and Rapidity. By David White Goodrich, Late Lightning Calculator, Erie Railway. Third Edition: Revised and Enlarged. New York: D. W. Goodrich & Co., Publishers. 1873.

12mo, 206 pp.—A. M.

1874. EDWARD OLNEY, LL. D.

This distinguished educator and mathematician was born in Moreau, Saratoga County, N. Y., July 27, 1827, and died in Ann Arbor, Mich., January 16, 1887.

In 1833 his father removed to Oakland County, Mich., but afterwards settled in Weston, Wood County, Ohio. The son, accustomed to hard labor on a farm and with no educational advantages except such as were furnished at a log schoolhouse, early developed a marked fondness for mathematics and natural science. In this school of early toil he used a plow beam and the front part of a wheat fan (fanning mill) for a blackboard, and in the short space of six weeks he "went through Day's Algebra."

At the age of 19 he began teaching district school, devoting his evenings to the study of Latin. At 21 he taught in Perryville, the county seat, and a year later he took charge of the union graded school, which he organized. Here he had to teach Latin and other higher studies, and by private effort outside of school he qualified himself admirably for the task. For five years he occupied this position, when, in 1853, he was elected professor of mathematics in Kalamazoo College, where he remained till 1863, when he entered upon similar duties at the University of Michigan, and which he ably discharged till his death.

The honorary degree of LL. D. was conferred upon him, owing to his distinguished services as an educator, author, and teacher. Having come up directly from the laboring people, he took a lively interest in their education and influencing them in whatever tended to their welfare. A ready and easy speaker, apt in illustrations, he was a great favorite with the teachers at institutes and State meetings. He took deep interest in all humanitarian enterprises. An active member of the Baptist Church, his whole influence was in the line of his religious convictions of right and duty.

He is well and favorably known as the author of the following series of mathematics, published by Messrs. Sheldon & Co., New York: First Lessons in Arithmetic, 1881; Primary Arithmetic, 1874; Elements of Arithmetic, 1875; Practical Arithmetic, 1879; Arithmetical Exercises, 1875; Science of Arithmetic; Introduction to Algebra; Complete Algebra; Test Examples in Algebra.

HIGHER MATHEMATICS.

University Algebra; Elements of Geometry; Geometry and Trigonometry, University Edition; General Geometry and Calculus.

THE ARITHMETICS.

First Lessons is a book of 144 pages, and is the introductory volume to the author's Practical Arithmetic. It is so simple that the lowest grade pupils may pursue it easily. The pupil is gradually conducted through the four fundamental rules and the simplest exercises in fractions and weights and measures. As a text-book it is beautifully illustrated.

The spirit of the author is well expressed in the Primary Arithmetic, in which he announces the following principles:

1. A text-book should be arranged with reference to sound principles of teaching.
2. One thing at a time in primary teaching.
3. Unity of purpose and infinite diversity of means characterize successful teaching.
4. The method by which we determine what the result of a combination is, and the fixing of that result in the mind.

The Primary Arithmetic is divided into two parts: Part I for first and second grade pupils and Part II for third and fourth grade pupils.

The first includes the fundamental rules, fractions, and denominate numbers, and the second reviews these subjects and also includes short chapters on interest and mensuration.

The Elements of Arithmetic is a volume of 392 pages. Proportionally it is much stronger than either of the others, although it is exceedingly simple in the beginning. It includes all topics usually found in practical or common school arithmetics, and it can be used in ungraded or graded schools; if in graded, it should follow the author's primary work. While it appears to lack system in its arrangement, yet it contains a great variety of useful and interesting exercises, and the pupil that masters it has a very fair knowledge of the subject.

The Practical Arithmetic is hardly equal to the Elementary, although it is almost identical with it. It was prepared because of the diversity of tastes in regard to schoolbooks on the subject of arithmetic.

It is rather difficult to form a correct estimate of Professor Olney's arithmetics. They are characteristic of the man in being a wonderful mass of information in all kinds of shapes. He saw clearly the theoretical, which he endeavored to render extremely practical, and while he succeeded well in carrying out his own views of teaching the subject, it is doubtful if many are able to adopt his methods and follow them successfully. In my opinion, he was a much better teacher than writer of text-books. The living soul was in his instruction, which he was unable to put into his books. And yet his books are not weak, but strong ones, and the suggestive hints he throws out to teachers are invaluable and worth many times the price of each book.

1874. WILLIAM G. PECK, LL. D.

Prof. William G. Peck was born in Litchfield, Conn., October 16, 1829, and resides in the city of New York (1892). He graduated from the Military Academy in 1844 and was promoted to the Corps of Topographical Engineers, and served on the survey of Portsmouth Harbor a short time, and later with Fremont's exploring expedition till the beginning of the war with Mexico. He was now assigned to duty under General Kearny in the Army of the West, and served in this position till the close of the war, when he was ordered to West Point as an assistant instructor in mathematics. He remained there eight years, then resigned his commission and was for two years professor of physics and civil engineering in the University of Michigan. In 1857 he was elected to the chair of mathematics, mechanics, and physics in Columbia College, New York, which he now holds.

Professor Peck, in connection with Dr. Charles Davies, compiled a dictionary of mathematics; he is the author of an elementary treatise on mechanics; the editor of Ganot's Physics; and author of a brief course in mathematics beginning with arithmetic and including determinants. His books are published by Messrs. A. S. Barnes & Co., New York.

ARITHMETICS.

Peck's arithmetical series includes three books: 1. First Lessons in Numbers; 2. Manual of Practical Arithmetic; 3. Complete Arithmetic.

The author in this series of books includes such matters only as are essential to the student, business man, and the artisan. Consequently the First Lessons introduces the beginner to the subject by easy steps, while the Manual occupies a grade between the first book and the Complete Arithmetic. The theory and the more abstruse principles are excluded from the Manual, yet it and the Complete differ only in regard to the extent of matter.

THE COMPLETE ARITHMETIC.

This arithmetic was issued in 1874, and a fuller edition again in 1877. The former contains 313 pages and the latter 415 pages.

Of the three books the last is the best. The exercises are well selected; repetitions are avoided; extraneous matter is excluded; and the explanations are given in such a way as to help the pupil when he needs assistance.

1874. JOSEPH FICKLIN, LL. D.

This distinguished mathematician was born in Winchester, Ky., September 9, 1833, and died September 6, 1887. His father, Joseph Ficklin, was a native of Mercer County, Ky. Professor Ficklin received his first schooling in a little school at Salvisa, in his native State. Here he began his mathematical studies by learning the "multiplication table" from the back of his copy book. Reared under conditions unfavorable for the cultivation of his mental faculties, oppressed by poverty, compelled to work early and late each day, he yet, by the inherent force of his energy, became one of the first scholars of this country. Having picked up such rudiments of an education as he could at intervals while learning the blacksmith's and wagonmaker's trade, he started with his father from Kentucky to Grundy County, Mo., in 1851, but went, instead, to New Madrid,

Mo., where he taught school a few months, and then returned to his grandfather's, in Kentucky, where he attended school nearly a year.

In September, 1853, he joined his father in Missouri. By this time he had mastered all the common branches and had made some progress in the higher ones. Next he went to the Masonic College, at Lexington, Mo., but on account of lack of means he was forced to leave before graduating. However, the institution subsequently conferred upon him the degree of A. B. After leaving Lexington he went to Trenton, where his father lived, and took charge of the high school, which position he held from 1854 to 1859.

In 1859 he was elected professor of mathematics in the Female College, Bloomington, Ill., but he soon came back to Missouri. He taught the public school in Linneus, and afterwards taught a private school there. In September, 1864, he accepted the chair of mathematics and chemistry in Christian College, Columbia, Mo. During the year he heard some classes also in the State University. At the beginning of the fall term he entered upon the duties of the regular professor of mathematics, philosophy, and astronomy in the university, which chair he filled till the time of his death.

The University of Wisconsin conferred upon him the degree of Ph. D. in 1874, and in 1884 the additional degree of LL. D. He was a fellow of the American Association for the Advancement of Science and a member of the American Astronomical Society.

As a mathematician his talents were of a high order, and he had few equals in handling difficult problems in mechanics. He was equally skillful in integrating complicated differentials. Except to a few mathematicians he is better known to teachers through his text-books, which are: 1. Complete Algebra and Key, New York, 1874; 2. Algebraic Problems and Key, 1874; 3. First Lessons in Arithmetic, 1881; 4. Elementary Arithmetic, 1881; 5. Table-Book and Primary Arithmetic, 1881; 6. Practical Arithmetic, 1881; 7. Advanced Arithmetic, 1881; 8. National Arithmetic and Key, 1881; 9. Elements of Algebra, 1881.

These books are published by one of the oldest firms in this country, that of Messrs. A. S. Barnes & Co.

The Primary Arithmetic is a book of 104 pages. It includes the Table Book and Primary Arithmetic. This book contains copious exercises for slate, blackboard, and oral drill, plentifully interspersed with pictorial illustrations. Only such definitions as the pupil should know are inserted. The elementary rules, United States money, fractions, and the useful tables are treated of in such a way as to attract and interest children. It is an excellent work for beginners.

The Elementary Arithmetic is a continuation of the previous volume. The exercises are of a practical character. In this volume the author begins to develop the subject more systematically. Arithmetic must be taught as a science. Each question is designed to require search and thought before an answer can be given, and the how and the why are taught by inductive exercises more than by the statement of formal propositions.

This book takes the pupil through the elementary rules, fractions, denominate numbers, and the metric system. It is a 12mo, 180 pages.

The Practical Arithmetic is a neat volume of 312 pages. Of all text-books recently published this is one of the very best. The inductive method of treating each subject is strictly adhered to. Nothing is anticipated before the pupil is properly prepared for it. The author has kept in view the pupil's mental powers in the gradation of the exercises. The work is especially strong and clear in the treatment of fractions and percentage. The chapters on mensuration and short methods are invaluable acquisitions to practical men.

The National Arithmetic is the same as the Practical Arithmetic to page 269, and the remaining 186 pages form the Advanced Arithmetic. These two parts form an excellent common-school arithmetic, in which all essential subjects are included and all useless matter is excluded.

1874. GEORGE SOULÉ.

Soulé's Contractions in Numbers, designed for the Use of Schools, Clerks, Accountants, Mechanics, Planters and Private Learners. It elucidates the principles of the science of numbers, and the most practical and rapid methods of

handling figures. It embraces the Vicenary System of Addition, an entirely new System, and the most lightning-like method known. It fully illustrates Subtraction by the Addition method, Simultaneous Multiplication, and all the other approved contracted methods of multiplying and dividing whole and fractional numbers. Percentage and Interest computations are extendedly elucidated by our Philosophic System, and many practical questions in Stocks and Bonds, Compound Investments, etc., are presented for the first time. English, French, German, Austrian, Russian, and Brazil Exchange are presented and Philosophically explained. Practical work in Mensuration of Surfaces and Solids constitutes a Special Feature of the Book. It contains a vast amount of important information not to be found in any similar treatise. It is replete with new and practical examples, the rarest gems of the science of numbers, which are of great value to the Accountant, Merchant, Mechanic, Planter, Student and all classes of business men. By Geo. Soulé, Practical Accountant, Commercial Lawyer, President of Soulé's Commercial College, New Orleans, and Author of Soulé's Analytic and Philosophic Commercial and Exchange Calculator. New Orleans. Published by the Author. 1874.

12mo, 264 pp.—A. M.

1874. HEYER M. NEXSEN.

Mental Calculation. The Science of Figures and Numbers, or How to Multiply, Divide, Add, Subtract, &c., ANY Set of Numbers In the Mind alone, Correctly, and Quick as Lightning. By the New Science of Mental Calculation, Based upon New Scientific Principles, Methods, Ideas, Contractions, Rules, etc. By Heyer M. Nexsen, Formerly Expert Calculator, P. R. R. Pier 38, N. R. Volume I. New York: H. M. Nexsen, Publisher, 267 W. 16th Street, N. E. Corner 8th Avenue.

12 mo, 120 pp. In some respects a remarkable book. The following is the dedication: "TO ALMIGHTY AND OMNISCIENT GOD, FATHER OF ALL TRUTH, SOURCE OF ALL SCIENCE, GIVER OF EVERY GOOD AND PERFECT GIFT, AND AUTHOR AND FINISHER OF EVERY GOOD WORD AND WORK; this little volume is DEDICATED by the AUTHOR, H. M. Nexsen."

I will add a few extracts from the preface:

"This work is full of MARVELOUS METHODS OF CALCULATION EASY to learn, based on SCIENTIFIC PRINCIPLES, SIMPLE, GRAND, and NEW, that have ASTONISHED the Author and Discoverer himself and others who have watched him calculate day after day, for 14 men, rapidly making out freight bills for him to extend for them, which were as quickly required to send off with the loaded freight trains. To INSTANTANEOUSLY give results was a daily wonder to them and to visitors.

"Such INTUITION is a GIFT FROM GOD, and the author believes he has SOLVED THE MYSTERIES OF QUICK and EASY CALCULATION BY PRAYER and BY THE GRACE OF GOD, WHOSE INSPIRATION CAN IMBUE THE MIND and GIVE IT UNDERSTANDING and POWER.

* * * "Nexsen's Scientific Methods of Calculation are easy to learn, because the Principles discovered are based on COMMON SENSE, and therefore easy, though never before known. They are the GRANDEST MASTER STROKES of CALCULATION ever invented or discovered by man, or revealed to man, by THE OMNISCIENT GOD WHO shows HIS SOVEREIGNTY in the minds of men, to whom HE grants the Gift of INTUITION, which impresses the thoughts of the endowed one, whose mind and thoughts are thus controlled by the Mental Inspirations from GOD, until the purpose and mission of such gifts of genius is accomplished," etc.—A. M.

1874. WILL STARR HAMLIN.

Hamlin's Arithmetical Self-Instructor, containing The Most Simple and Comprehensive Rules for the Shortest and Most Rapid Methods of Computing Numbers, Applicable in Every Day Business Transactions. By Will Starr Hamlin, the Lightning Calculator. Energy is the Price of Success. Chicago: Fergus Printing Company. 1874.

18mo, 56 pp.—A. M.

1874. ANNE M. RICE.

Slate Exercises in Numbers, for Primary Schools. 300 Lessons, Arranged for Two Years' Work. With Suggestions for Oral Recitations. By A. M. Rice. H. Rude, 375 Main St., Springfield, Mass., and Nichol & Hall, 32 Bromfield St., Boston. 1874.

Oblong, pp. 114.—A. M.

1874. J. C. MIDDLEBROOK.

Middlebrook's Lightning Calculator Embracing all the Practical Parts of Mathematics, and a full Exposition of Cancellation, with Numerous Examples for Practice. Carefully Adapted to the Purposes of Teaching in Schools of Every Grade, and to the General Use of Merchants, Mechanics, Farmers, and All Others. By J. C. Middlebrook. Meridian, Miss.: Powell & Malone, Book and Job Printers. 1874.

16mo, 39 pp.—A. M.

1875. EDWIN A. WILLIAMS.

Business Manual, containing a Correct and Useful Method of Solving any Problem in Simple or Compound Interest, Currency, Etc., beside numerous Miscellaneous Examples. Invaluable to All Classes. By Edwin A. Williams, San Francisco, Cal.

Small 18mo, 20 pp.—A. M.

1875. JAY F. LANING.

Contractions in Arithmetic. Every Rule and Operation Shortened. Hours of Labor Performed in as Many Minutes. Everybody's Companion and Friend. Address all orders to the Author, Jay F. Laning, New London, Ohio. Price One Dollar. Robison, Savage & Co., Printers, Etc. 1875.

18mo, 86 pp.—A. M.

1875. G. M. FURMAN.

Arithmetical Problems for the Use of Advanced Classes in Schools. By G. M. Furman, Teacher in the Binghampton High School. Binghampton: Carl, Stoddard & Co., General Book and Job Printers. 1875.

Small 18mo, 60 pp.—A. M.

1875. RICHARD NELSON AND HENRY A. FABER.

The New Mercantile Arithmetic for Book-Keepers, Schools and Colleges. By Richard Nelson, Author of "Nelson's Book-Keeping," and Henry A. Faber, President Queen City Commercial College. Published by Faber and Langdale, 200 and 202 Vine Street, Cincinnati, O. 1875.

16mo, 300 pp.—A. M.

1875. G. ERLENKÖTTER.

Rechenbuch für Deutsche Elementarschulen in Amerika. Zweiter Theil. Die Rechnungsarten des bürgerlichen Lebens, (nebst Antwortenheft), Streng Stufenmäszig bearbeitet von G. Erlenkötter, Lehrer. Philadelphia und Leipzig. Verlag von Schäfer und Koradi. 1875.

18mo.—A. M.

1876. GOFF'S ARITHMETICS.

Milton B. Goff, LL. D., president of the Western University of Pennsylvania, is the author of the following books: 1. First Book in Arithmetic, 12mo, 144

pages, 1876; 2. Elementary Arithmetic, 12mo, 224 pages, 1888; 3. Complete Arithmetic, 12mo, 452 pages, 1876; 4. Arithmetical Problems, 12mo, 240 pages, 1877.

With the exception of the Elementary Arithmetic these books were first published by A. H. English & Co., Pittsburg, but they are now published by Messrs. Taintor Bros. & Co., New York.

The First Book is a neat little volume, nicely printed and beautifully illustrated. The chapters on fractions and the tables are admirably presented.

ELEMENTARY ARITHMETIC.

The author had in mind the wants of graded schools when he wrote this book. He included such subjects as pupils should know, whether they leave school or study a more advanced work. The problems are selected with direct reference to business transactions. The book is a fine specimen of the printer's art.

COMPLETE ARITHMETIC.

This is by far the best of the author's works. In many respects it is a very superior text-book. Here the author shows most clearly his strong powers of generalization. To aid pupils and teachers in putting their arithmetical knowledge into good form, this is one of the best and safest guides. Every teacher should keep this book for handy reference.

ARITHMETICAL PROBLEMS.

This is a drill book for either teacher or pupil. The problems are well selected, and cover all subjects usually found in the best arithmetics.

1876. PROF. ALFRED KIRK.

Prof. Alfred Kirk was born in Harrison County, Ohio, in February, 1832, and shortly after his birth his father's family removed to Jefferson County, of the same State, where Alfred grew to manhood. Here he attended district school until 16 years of age, when he entered Richmond College, an institution that ranked as a first-class academy, where he remained four years pursuing the regular classical course. Upon leaving the institution he began his career as a teacher in the same county. Afterwards he went to Chicago, where he now resides. On the 1st of May, 1889, he will have completed twenty-one years as a principal in the Chicago schools.

KIRK AND BELFIELD'S ARITHMETICS.

These arithmetics are published by Messrs. George Sherwood & Co., Chicago. They are arranged under two distinct heads, "Condensed Series" and "Two Book Series." The first embraces Model First Book, Model Second Book, and Model Third (Business) Book, and the second Model Elementary and Model Complete; also a separate volume, "The Little Folks' Model Arithmetic."

MODEL ARITHMETIC COMPLETE.

This is a 12mo, of 359 pages, and was entered for copyright in 1875. Its essential features are: 1. Accuracy and perspicuity in the statement of definitions; 2. Philosophical discussions of principles and their applications; 3. Combination of oral and written exercises in each subject; 4. The unusually large number of examples, carefully prepared and arranged; 5. The grouping of miscellaneous examples for reviews and examinations.

For this arithmetic it is enough to say that it is one of the very best text-books issued in this country. The authors know what the average boy and girl can do in school. They had before them children of such capacity while writing each page. Truly it is a "Model Book." What the authors claim for the book is fully carried out in the text.

The Complete Arithmetic is bound in three parts for those who prefer it in that form.

ELEMENTARY ARITHMETIC.

This is a volume of 208 pages, published in 1876, and it may be used as an introductory work to the Complete Arithmetic or as a finishing book for pupils who do not have time to complete the grammar-school course. It carries the pupil through interest.

REVISED ELEMENTARY ARITHMETIC.

A 12mo, 288 pp.

This book was prepared by Mr. Belfield, and was published in 1887. The table of contents exhibits most clearly the scope of the work. It assumes that the pupil has had oral instruction

in numbers from 1 to 10, and that he can read in the Second Reader. The exercises are arranged for pupils through the second, third, and fourth grades.

There are some points especially worthy of commendation in this volume. For instance, "Suggestions to teachers" contain the kernel of all that is essential in teaching arithmetic to beginners. The mechanical work of the book is admirable. It is better type for the schoolroom than any other arithmetic I have ever examined. The exercises are excellent in every respect. It is a pleasant book to look at or to look through.

THE LITTLE FOLKS' ARITHMETIC.

The authors designed this book for the first two years of the child's school life. It is planned after the Grube method.

The exercises are well graded, and the book itself, from the Grube standpoint, is one of the very best. The volume is a thin 12mo, 92 pages.

1876. SINGER'S ARITHMETICS.

The Model Series of Arithmetics, prepared by Edgar A. Singer, principal of the Henry W. Halliwell Grammar School, Philadelphia, comprises the Model Primary, 128 pages; the Model Elementary, 256 pages; the Model Practical, 400 pages; and the Model Mental, 184 pages. These books were entered for copyright in 1876 by Messrs. Eldredge & Bro., Philadelphia.

The Primary Arithmetic is designed for beginners of tender years. There is a method, beginning with the first book, carried through the entire series. No sudden transitions are made, but the pupil passes along naturally and easily from what he already knows to that which he is to acquire. First the concrete problem and afterwards the abstract one is the plan the author adopts to impress the pupil with the relations existing between the processes. From this book the child learns the four fundamental rules as applied to whole numbers.

The Elementary Arithmetic follows the Primary, but includes the following additional topics: 1. Properties of numbers; 2. Fractions; 3. Decimals; 4. Denominate numbers, including some of the simple cases in mensuration. The problems are well graded and combine written and mental exercises. It is well adapted to children of the third, fourth, and fifth grades in city, town, and village schools, or to children of from 9 to 12 in country schools. The definitions are clear and sharp, the model solutions brief and pointed, and the principles and rules forcibly expressed.

The Practical Arithmetic is a beautiful volume, handsomely bound and tastily printed. It naturally follows the Elementary, but not necessarily. In my opinion, it and the Mental Arithmetic form an excellent course, and one that is sufficiently extended for all ordinary schools below the very highest grades. A model text-book by a teacher who knew well what to do and how to do it.

The Mental Arithmetic shows the same painstaking care as the other books of the series, and it is well adapted to the average child.

Throughout the series it is very evident that the author places a proper estimate on the value of mental arithmetic.

1876. WILLIAM R. G. HUMPHREY.

The Western Abbreviated, or Practical One-Rule Arithmetic; where the Rules are Illustrated, and the Principles Made Plain. Second Edition. Enlarged and Revised. By Wm. R. G. Humphrey. St. Louis, Mo.; Printed by Jno. J. Daly & Co., 213 N. Third Street. 1876.

18mo, 133 pp.—A. M.

1876. J. W. FLEMING.

An Essay on Arithmetic, by J. W. Fleming, Maquoketa, Iowa. January, 1876. W. S. Belden, Printer, Maquoketa, Iowa.

8vo, 48 pp.—A. M.

1876. ALFRED COLIN.

The Universal Metric System: Prepared especially for Candidates for Schools of Science, Engineers and Others. By Alfred Colin, M. E., Principal of a Preparatory Scientific School. New York: D. Appleton & Co. 1876.

49 pp.—A. M.

1876. HENRY A FABER.

Concise Mercantile Arithmetic, for Commercial Colleges: A Hand-Book for the Counting-Room. Containing all the more useful and practical calculations of every-day application, explained on Scientific principles. By Henry A. Faber, President Queen City Commercial College and Author of "Faber's Manual," "Statistical Account Book," and Co-Author of the "New Mercantile Arithmetic." Cincinnati: Queen City Commercial College, N. W. Corner Fifth and Walnut Streets. 1876.

16mo, 200 pp.—A. M.

1876 JOSEPH J. SKINNER.

Principles of Approximate Computations. By Joseph J. Skinner, C. E., Instructor in Mathematics in the Sheffield Scientific School of Yale College. New York: Henry Holt and Company. 1876.

16mo, 98 pp.—A. M.

1877. THE NEW AMERICAN ARITHMETICS.

This excellent series of arithmetics was prepared S. Mecutchen, A. M., and George M. Sayre, and published by E. H. Butler & Co., Philadelphia, in 1877.

This is either a two-book series or a three-book series, owing to the way the school prefers. That is, Part First stands as an independent volume; while Part Second and Part Third are bound separately, or when combined form "The New American Practical Arithmetic."

Part First is a handsome little book of 84 pages. The object of the authors is to present the first principles of arithmetic in a simple and practical manner without burdening the child with theories. Constant labor is held to be the only way to gain knowledge. It is a book that demands work.

Part Second begins with the fundamental rules, and in 137 pages the following subjects are adequately treated: 1. Simple numbers; 2. United States money; 3. Common fractions; 4. Bills and accounts; 5. Denominate numbers; 6. Decimal fractions; 7. Denominate fractions.

Part Third includes: 1. Percentage; 2. Ratio and proportion; 3. Partnership; 4. Equation of payments; 5. Averaging of accounts; 6. Analysis; 7. Involution and evolution. 8. Mensuration; 9. General review problems; 10. Matters belonging to higher arithmetic. This book contains 202 pages.

The Practical Arithmetic is designed for those schools which prefer the second and third parts in one volume of 326 pages.

This series of books combines in an eminent degree the following features:

1. Oral and written arithmetic; 2. Clear, concise, and comprehensive definitions; 3. Examples that actually occur in business transactions; 4. Fewer formal rules than any other series; 5. They can be mastered by the average child in a reasonable time.

1877. NUMBERS FOR JUNIOR CLASSES.

Miss Martha Roe put into this book just what the pupil is supposed to need. A few definitions to stimulate inquiry; no rules, but a great number of examples, decimal fractions, and denominate numbers are given great prominence.

It is a well-bound volume of 160 pages, published in 1877, by C. W. Bardeen, Syracuse.

1877. FIRST STEPS AMONG FIGURES.

This is a drill book in the fundamental rules of arithmetic, divided into two parts, "The Teachers' Edition," of 192 pages, and the "Pupils' Edition," of 143 pages. The key to the work is: 1. Counters; 2. Figures; 3. Abstract numbers; 4. Practical problems. The book was prepared by Levi N. Beebe, and is published by C. W. Bardeen, Syracuse, N. Y. The first edition was printed in 1877.

1877. RAUB'S ARITHMETICS.

This series embraces two books—Elementary Arithmetic and the Complete Arithmetic, published by Porter & Coates, Philadelphia, in 1877. The author,

Albert N. Raub, A. M., was for many years principal of the Central Pennsylvania State Normal School, and is widely known as a writer on educational methods and of schoolbooks.

The Elementary Arithmetic treats in a very perspicuous manner of the following subjects: 1. Fundamental rules; 2. United States money; 3. Properties of numbers; 4. Fractions; 5. Decimal fractions; 6. Denominate numbers; 7. Percentage and review problems. It covers the ground well in 164 pages.

The Complete Arithmetic is an excellent treatise which, in connection with the Elementary, constitutes an admirable two-book series. This book is one of the best common-school arithmetics published.

The chapter on "Building Associations" is a new feature in arithmetical literature.

The author has united oral and written arithmetic very skillfully in these books.

Albert N. Raub, A. M., Ph. D., was born in the county of Lancaster, Pa., March 28, 1840. His early educational advantages were only such as were afforded by the common country schools of the times. At the age of 16 he became a student at the State normal school at Millersville, Pa., from which he graduated in the scientific course in 1860, being one of the leading members of the first class which graduated from the institution as a State normal school. Soon after graduating he was made principal of the Bedford Union School, and a year later principal of the public schools of Cressona, Schuylkill County, where he remained three years, when he became superintendent of schools in the town of Ashland, in the same county. At this time he wrote and published two spelling books and acted as educational editor of a country paper. From this time he has continued to hold important educational positions. In 1877 he succeeded in establishing a State normal school at Lockhaven, of which he became principal. Since August, 1885, he has been principal of the academy of Newark, Del.

1877. H. H. HILL.

A New and Simple Method for Square and Cube Root. A Handbook for the Use of Teachers and Pupils. By H. H. Hill. Chicago, Ill. Max Stern, Goldsmith & Co., Printers. 1877.

16mo, 15 pp.—A. M.

1877. JAMES E. RYAN.

The Standard Arithmetic, for Schools of all Grades and for Business Purposes. In Two Numbers. Number One. By James E. Ryan, Principal of School No. 26, Brooklyn. New York: Lawrence Kehoe, 9 Barclay Street. 1877.

12mo, 184 pp.—A. M.

1877. HENRY E. SAWYER.

Metric Manual for Schools. The Decimal System of Measures and Weights. With Exercises and Problems. By Henry E. Sawyer, A. M. Boston, n. d.

64 pp. Copyrighted 1877.—A. M.

1877. HOY D. ORTON AND W. H. SADLER.

Orton & Sadler's Business Calculator and Accountants' Assistant. A Cyclopædia of the most Concise and Practical Methods of Business Calculations, including many valuable labor-saving Tables, together with Improved Interest Tables, Decimal System: showing the Interest on from $10 to $10,000. Rate, Ten per Cent. per Annum. By Hoy D. Orton, Lightning Calculator, formerly Teacher of Rapid Calculations in the U. S. Naval Academy, and W. H. Sadler, President of Sadler's "Bryant & Stratton" Business College, Baltimore. Designed for the practical use of the Banker, Merchant, Accountant, Mechanic, Farmer, Business Man and Student. Containing the shortest, simplest and most rapid methods of computing numbers, adapted to all kinds of business and every-day life. Written and arranged so as to be within the comprehension of every one having the slightest knowledge of figures. Baltimore, Md.: W. H. Sadler, Publisher, Nos. 6 & 8 N. Charles St.

18mo, 304 pages. Copyright, 1877. I have another copy, 323 pages. 1889.—A. M.

1877. J. PICKERING PUTNAM.

The Metric System of Weights and Measures. By J. Pickering Putnam, Architect, Member of the American Metrological Society and of the American Metric Bureau. Second Edition, Revised and Enlarged. Boston: American Metric Bureau, 1 Tremont Place. 1877.

8vo, 70 + 13 pp.—A. M.

1877. P. T. LINDHOLM.

Försök till Praktisk Lärobok i Aritmetik of P. T. Lindholm. Vasa, Goodhue Co., Minn. 1877. (Norwegian.)

12mo, 128 pp.—A. M.

1877. JOHN H. METCALF.

Self-Instructor, Rapid Calculator, and Key to the Business and Important Rules of Arithmetic; for Calculating Grain, Hay, Lumber, &c. Useful to Farmers, Mechanics, Grocers, Bankers and Business Men Generally. All Performed by Rule and Examples. By John H. Metcalf. Dubuque: Newcomb & McCraney, Printers. 1877.

16mo, 58 pp.—A. M.

1877. JAMES E. RYAN.

The Standard Arithmetic, for Schools of all Grades and for Business Purposes. In two Numbers. Number Two. By James E. Ryan, Principal of School No. 26, Brooklyn. New York: Lawrence Kehoe, 9 Barclay Street. 1877.

12mo, 203 pages, and 22 pages of answers.—A. M.

1877. C. FRUSHER HOWARD.

Howard's California Calculator, and Golden Rule for Equation of Payments. The Newest, Quickest and most Complete Instructor for all who desire to be "Quick at Figures." By C. Frusher Howard, San Francisco, Cal. Entered at Stationers' Hall, London, England. 1878.

18mo, 94 pages. Copyright, 1877.—A. M.

1877. LYDIA NASH.

A Table Book and Introductory Arithmetic. By Lydia Nash. New York: Press of Francis Hart & Co. 1877.

18mo, 68 pp.—A. M.

1878. MacVICAR'S ARITHMETICS.

Malcolm MacVicar, Ph. D., LL. D., is the author of: 1. Elementary Arithmetic; 2. Teacher's Manual; 3. Practical Arithmetic; 4. Key; 5. Complete Arithmetic, Key; 6. Handbook; Drill exercises.

THE COMPLETE ARITHMETIC.

This is published in two parts. Part first takes the pupil through reduction. The problems are of two classes, those to be solved orally and those for written work. Definitions are terse; problems are numerous. Fractions are ingeniously represented by heavy lines. Part second is stronger in proportion than Part first. Both, united, form a good, practical, business arithmetic. Part first contains 223 pages and Part second 249 pages. The other works I have not seen. The author is principal of the State normal school at Potsdam, N. Y. The book was published in 1878 by Messrs. Taintor Bros., Merrill & Co., New York.

1878. THE FRANKLIN ARITHMETICS.

Edwin P. Seaver, A. M., and George A. Walton, A. M., are the joint authors of the Franklin Arithmetics, a series consisting of the following books: 1. Pri-

mary Arithmetic, 1879, 12mo, 96 pages; 2. Elementary Arithmetic, 1878, 12mo, 144 pages; 3. Mental Arithmetic, 1884, 12mo, 172 pages; 4. Written Arithmetic, 1878, 12mo, 348 pages.

THE PRIMARY ARITHMETIC.

This book appeals directly to the eye, and "numbers are treated as numbers of things" instead of abstractions. Analysis and synthesis, or the breaking of a number into parts, and putting these together, constitute an essential feature of the work which the pupil is required to perform. Small numbers are thus used to familiarize the pupil with processes.

THE ELEMENTARY ARITHMETIC.

The distinguishing feature of the Elementary Arithmetic is that it is a drill book in numbers and not a dissertation on the science. The four fundamental rules are so arranged and combined that they can be learned in much less time than when studied separately.

THE WRITTEN ARITHMETIC.

This is the last and the best book of the series. It is an intelligent text-book and it demands that kind of work from the pupil. All operations are referred to as few principles as possible. These are illustrated at the outset.

The imprints of the Franklin Arithmetics read variously, J. H. Butler, and Butler, White & Butler, William Ware & Co. They are now owned and published by Messrs. Taintor Bros. & Co., 18 and 20 Astor place, New York. This comes from a union of the firms Butler, White & Butler and Taintor Bros. & Co.

1878. BAKER'S ARITHMETIC.

Andrew H. Baker's Complete Arithmetic was published by P. O'Shea, New York, 1878.

This is a concise book of 195 pages.

1878. BARDWELL'S ARITHMETIC.

A Course in Arithmetic, by F. W. Bardwell, professor of astronomy in the University of Kansas, is a 12mo of 365 pages, published by G. P. Putnam's Sons, New York, 1878.

This is a unique treatise, and it is radically different from any other work prepared by an American author. It is intended to present within the compass of a single volume all that the average pupil needs to study. Sufficient is given to perfect him in the science. The subject-matter is arranged logically into three distinct parts, and in which the pupil gives his attention to a specific thing which is complete within itself.

Of the logical divisions, the first includes the simple operations which are explained, and exercises are given for practice. The second, in which numbers are chiefly used, in the measure of quantities of weight, surface, volume, time, and value; and in the third division, the general principles of the science are presented and applied to the solutions of problems.

Part I assumes that the learner is able to comprehend the principles of numerical operations, when they are presented to him properly. Consequently the definitions are clear and expressed in simple language. The points enforced are rapidity and accuracy in the four fundamental rules. In Part II the pupil should learn all the tables, committing them to memory, and if well drilled in the four fundamental rules he is prepared to make all reductions from one denomination to another.

The last part is arranged to develop the reasoning faculties by requiring an explanation of principles involved in the solution of each problem, and a direct analysis in terse, vigorous English.

In comparing this with other American arithmetics, it must be classified as a book of definitions, principles, and explanations of arithmetical terms and phrases. It is a valuable reference book for every teacher of arithmetic to possess. "An Essay on Methods of Arithmetical Instruction" by Professor Bardwell should accompany the arithmetic. The one throws light on the other.

1878. GRUBE'S METHOD.

A little, thin volume of 44 pages on how to teach elementary arithmetic, with a large number of practical hints and illustrations, by Prof. F. Louis Soldan, principal, St. Louis Normal School, and published by Messrs. S. R. Winchell & Co., Chicago, in 1878.

The work, in brief, is an exposition of Grube's method of teaching arithmetic. A suggestive work for teachers.

1878. NASH'S TABLE BOOK.

Another introductory arithmetic by L. Nash, copyrighted in 1878, and published by Benziger Brothers, New York, Cincinnati, and St. Louis.

A 12mo of 90 pages. This is a very simple book.

1878. MILNE'S ARITHMETIC.

This series contains three books: 1. First Lessons, 1878, 12 mo, 144 pages; 2. Elementary Arithmetic, 1882, 12 mo, 205 pages; 3. Practical Arithmetic, 1878, 12 mo, 391 pages.

These books were first published by Messrs. Jones Bros. & Co., Cincinnati; but the right to publish and sell the books belongs now to Messrs. Van Antwerp, Bragg & Co., Cincinnati.

First Lessons is prepared upon the inductive and objective methods. It is an average book of the kind.

The second volume is, comparatively, a shade stronger than the first one. Between First Lessons and the Practical was a gap, which the Elementary fills. The author gives a large number of oral exercises, which will answer the purpose of a separate work on Mental Arithmetic.

In the Practical Arithmetic each subject is presented inductively, and the pupil goes over the path as an original investigator. After each induction he generalizes. The language of business, when not inconsistent with scientific accuracy, is largely employed in the text. The book is a clear but concise presentation of the fundamental principles of the science.

Professor Milne was born in 1843, and was educated in the public schools of New York State, the Brockport Collegiate Institute, Brockport, N. Y., and at the University of Rochester, Rochester, N. Y. He graduated from the University of Rochester in 1868, received the degree of Ph. D. from the University of Rochester, and the degree of LL. D from Indiana Asbury University (now DePauw University). He taught in the public schools of New York State, the Brockport Collegiate Institute, the Rochester Collegiate Institute, the State normal school at Brockport, and the State normal school at Geneseo, of which school he has been principal since 1871.

1878. JOHN S. ROYER.

Problems in Mathematics prepared for the Ansonia High School. By John S. Royer, Principal of the Ansonia Public Schools. Ansonia, O.: Printed at Novelty Office. 1878.

12mo, 16 pages. Contains 23 "introductory problems," 14 "percentage" problems, 61 "junior problems," 58 "senior problems," and 50 "geometrical problems."—A. M.

1879. THOS. P. O'BRIEN.

Beauties in Mathematics. Comprising a choice selection of United States Weights and Measures. Most wonderful operations in Multiplication and Division. A complete revolution in Commercial Arithmetic, Rule of Three, Fractions, Interest, Discount, Partnerships, Series of Progressions and Polygonal Numbers, Permutations and Combinations. Analysis and a complete series of Choice Problems, together with a dissertation on the Gregorian Calendar—Day of the Week and Easter-time, which will be found most useful by students pursuing their studies in Mathematics, and by Business Men in general. To these are added a choice selection of Amusing Problems as applied to Games, Very Curious Squares and Properties thereof. To which are added a Small Treatise on Land Surveying and Mensuration, and a copious selection of Promiscuous Examples. By Thos. P. O'Brien, A. M. San Antonio, Texas. M. M. Mooney, Power Book and Job Printer. 1879.

8vo, 63 pp. A very full title for so thin a book. The "Small Treatise on Land Surveying" is so very small that I have not been able to find it.—A. M.

1879. C. E. BAKER.

The Student's and Book-Keeper's Manual. A Practical Guide in Business, containing short, simple and rapid methods of calculation in Multiplication, Division,

Interest, Bank Discount, Partial Payments, Equation of Payments, Etc., Etc., Etc. Designed for the use of Business Colleges, Commercial Students, Bookkeepers, Etc.

By C. E. Baker, Professor of Book-keeping and Business Arithmetic in the Evergreen City Business College of Bloomington, Illinois. Bloomington: Democratic News Print. 1879.

A little volume, 125 pages.—A. M.

1879. J. R. SPIEGEL.

Live Questions on the English Branches. A Handbook for Superintendents, Principals, Teachers, and Students. By J. R. Spiegel, A. M., Superintendent of Public Schools of Westmoreland County, Pa. Philadelphia: Eldredge & Brother, 17 North Seventh St. 1879.

12mo, 294 pp. Pages 63-106 devoted to arithmetic.—A. M.

1879. SAMUEL M. ADAMS.

Adams' New "Shorthand" Arithmetic, being mostly a Compilation of the Shortest Known Methods of Solving Business Arithmetical Problems, to which are added some New Features by the Compiler. Outside appearances would indicate the price of this book to be high: an examination of its contents will prove it to be cheap. Book and Job Rooms of Messenger: Troy, Ala.

Small 18mo, 70 pp.—A. M.

1879. L. M. SNIFF.

Arithmetical Solutions, and Mensuration: comprising Model Solutions with Explanations. By L. M. Sniff, A. M., President Tri-State Normal College, Angola, Indiana. Cleveland, O.: J. R. Holcomb & Co., Publishers. 1890.

18mo, 82 pp. Copyright, 1879.—A. M.

1879. HENRY E. SAWYER.

Words and Numbers. A Lesson-Book for Primary Schools. By Henry E. Sawyer, A. M., Associate Principal, State Normal School, New Britain, Conn. Boston: Thompson, Brown, & Company. 1880.

18mo, 69 pp. Copyright, 1879.—A. M.

1879. FRANCISCO WIEDEMANN.

Libro Primero de Aritmética Para Niños que Trata de los Números de 1 á 10 para la Enseñanza en las Escuelas Primarias y en las Familias por Francisco Wiedemann, Director de la Cuarta Escuela Municipal de Dresde. Nueva York D. Appleton y Compañía, 549 Broadway 551. 1879.

16mo, 112 pp.—A. M.

1879. C. FRUSHER HOWARD.

Howard's Art of Computation and Golden Rule for Equation of Payments for Schools, Business Colleges and Self-Culture. A New, Concise and Comprehensive Teacher and Manual of Business Arithmetic. By the Author of the California Calculator, C. Frusher Howard, San Francisco. 1879.

16mo, 118 pp.—A. M.

1879. L. M. SNIFF.

Analytical Methods of Arithmetic, comprising Model Solutions with Explanations. By L. M. Sniff, Professor of Mathematics in N. W. O. Normal School. Ada, Ohio, Millar & Thompson, Printers. 1879.

18mo. 50 pp.—A. M.

1879. COL. FRANCIS W. PARKER.

Quincy Course in Arithmetic. By Col. Francis W. Parker, Cook Co. (Ill.) Normal School. Chicago: A. Flanagan, Publisher.

16mo, 38 pp.—A. M.

1880. SEYMOUR'S ARITHMETICS.

No teacher is better prepared to write a series of arithmetics than Hon. George E. Seymour, of the St. Louis high school. His course in arithmetic is a vigorous reaction against a half dozen or more books in a common-school course. The central thought underlying this series of arithmetics is that after the fundamental rules common fractions and analysis must be thoroughly mastered.

The series is composed of three books—Elementary Arithmetic, Practical Arithmetic, and Mental Arithmetic.

The Elementary Arithmetic is a book of 204 pages. It is a clear-cut book, definite, analytic, and intellectual. Good drill in oral and written work is afforded to the pupil. Instead of lengthy explanations suggestive hints are given whenever they are deemed necessary.

The Mental Arithmetic is different in one respect from all others hitherto published. In the main body of the book problems are grouped. For instance, "fish problems" are classed together; so "horse and saddle problems," "hound and hare problems," and so on. This I regard as an excellent feature.

Practical Arithmetic: "No attempt has been made to make this book either a complete dictionary of mathematical terms or a mere encyclopedia of useful mathematical knowledge."—Author.

In this book, as in the elementary, the operations are all reduced to the fewest principles possible.

For common and graded schools this is one of the best arithmetics published. The keen analytical skill of the author's mind is imprinted on every page of this volume. In 310 pages the foundation is laid for the mastery of the entire subject of arithmetic.

This series was published in 1880 by the American Schoolbook Company, St. Louis, Mo.

1880. GRANT'S ARITHMETIC FOR YOUNG CHILDREN.

This little book is by Horace Grant, and the American edition is edited by Willard Small and published by Messrs. Lee & Shepard, Boston, It is a handbook for teachers, and it is well adapted to the instruction of children from 4 to 7 years of age. No number greater than 20 is used by the author. All primary teachers ought to have a copy. Lee & Shepard copyrighted this edition in 1880. The directions to teachers and the exercises form a volume of 134 pages.

1880. GRADED PROBLEMS IN ARITHMETIC AND MENSURATION.

This is a companion volume to the New American Series of Arithmetics. The problems cover subjects usually found in arithmetic and the simple cases in mensuration. To interest classes and to keep them at all times fresh and active, this collection forms an excellent tonic. For reviews and examinations of classes it is well adapted. There are nearly 3,500 examples, carefully graded, in the book, which is a 12mo, 204 pages, by S. Mecutchen, A. M. Philadelphia: E. H. Butler & Co.

1880. JAY F. LANING.

Newly Discovered Methods for Arithmetical Computation (Simplified and Improved.) Based on New Principles. Short, Simple, Practical and Scientific. Every Subject of Arithmetic Treated. Old Works Superseded. New London, Ohio.

18mo, 194 pp.—A. M.

1880. C. F. R. BELLOWS.

Arithmetic its What How and Why. A Manual for the Use of Teachers. By C. F. R. Bellows, M. A., Professor of Mathematics Michigan State Normal School; Author of Analysis of Arithmetic; of Elementary Algebra its What How and Why; of a Classification of Geometrical Facts; and of a Treatise upon Trigonometry. Ypsilanti: Michigan State Normal School.

12mo, 178 pp.—A. M.

1880. COUNTY SUPERINTENDENTS' QUESTIONS.

County Superintendents' Questions, embracing Theory and Problems, carefully selected from lists now in use by The County Superintendents of Iowa, Indiana, Illinois, Wisconsin, Pennsylvania. Classified Under Proper Headings for Convenience of Reference. Chicago: T. S. Dennison.

18mo, 48 pp. Copyright, 1880. A classified collection of arithmetical questions.—A. M.

1880. Z. L. BURTON.

Burton's Business Arithmetic especially adapted to Class Teaching, Commercial Schools and Colleges. The Shortest, most Rapid and Simplest Method ever known; adapted to every kind of Business; suitable for the Beginner, yet will give the Finishing touch to the Graduate. "Time is Money." By Z. L. Burton, Professor of Mathematics. Address all orders for this Book to the Author, Sherman, Texas. 1880.

Small 18mo, 115 pp.—A. M.

1881. G. A. WENTWORTH'S ARITHMETICS.

This series of books, published by Messrs. Ginn & Co., Boston, is composed of three books: Grammar School Arithmetic, 1885, 372 pages; High School Arithmetic, 1881, 362 pages; Primary Arithmetic, Teachers' Edition, 1884, 474 pages.

The Grammar School Arithmetic is by Professor Wentworth and Rev. Thomas Hill, D. D., LL. D., ex-president of Harvard College; and the Primary Arithmetic by Professor Wentworth and E. M. Reed, principal of training school at Plymouth, N. H.

One of the chief characteristics of these arithmetics is the absence of rules. The pupil is to learn arithmetic "by doing," and to use his own judgment intelligently when he is doing. There is also a noticeable absence of formal definitions, with which many arithmetics fairly bristle. The pupil is expected to make an arithmetician of himself by working and thinking, rather than by blindly following the directions on guideposts telling him which way to go at each turn. In the selection of well-graded problems for the Common School and the Higher arithmetics the authors exercised excellent judgment. The problems present a great variety of arithmetical work, and they illustrate the principles of the science in an admirable manner.

In the Higher Arithmetic unusual prominence is given to the metric system, and in the Common School Arithmetic the chapter on mensuration forms an excellent illustration of the close connection existing between arithmetic and geometry. The vocabulary of terms supplies largely the omission of definitions in the text. These books, although on a new departure, are good books.

The Primary Arithmetic is intended to occupy the child's attention four years. The first year he works from 1 to 10, the second year to 20, and the remainder of the work for two years more. The authors introduce fractions with integers from the start. "Fractions" and "Percentage" are the best chapters in this book.

1881. GILMAN C. FISHER.

A Teachers' Manual in Arithmetic for Primary Grades. By G. C. Fisher, Superintendent of Schools, Dover, N. H. Boston: New England Publishing Co., 16 Hawley Street. 1881.

12mo, 70 pp.—A. M.

1881. J. J. MILLS AND N. CROPSEY.

Graded Exercises in Arithmetic. No. 2. Fundamental Operations. Designed for The Third and Fourth Years, Indianapolis Public Schools. By J. J. Mills, N. Cropsey, Ass't Supt's. Published by Order of the Board of School Commissioners. Indianapolis: Merrill, Hubbard & Co., Publishers, No. 5 East Washington Street. 1881.

16mo, 235 pp.—A.M.

1881. DARÍO GONZALEZ.

Aritmética Elemental para la Enseñanza en las Escuelas y Colegios de Centro-America. Por el Doctor Darío Gonzalez. Cuarta Edicion corregida y notablemente aumentada. Nueva York: D. Appleton y Cía., Libreros-Editores. Guatemala: Librería y Papelería de Emilio Goubaud. 1881.

12mo, 181 pp.—A. M.

1881. SOME TEACHERS.

Practical Arithmetic, designed for Elementary Schools. Part II. Union of Mental and Written Arithmetic. By Some Teachers. Buffalo, N. Y. "Volksfreund" Print, 46 and 48 Broadway. 1882.

16mo, 107 pp.—A. M.

1882. HARPERS' GRADED ARITHMETICS.

Two books form this series, which was published in 1882 by Harper & Bros., New York.

The First Book is for the third and fourth year pupils in a graded course of instruction. The problems are both oral and written. The general plan of the book is that known as the Grube method, which is made to include the following separate processes: 1. Induction; 2. Measuring, 3. Table; 4. Comparison; 5. Combinations; 6. Applications. The numbers treated of in this book, exclusive of miscellaneous problems, according to the Grube method, are from 1 to 100, inclusive.

The book is aptly illustrated, substantially bound, and contains 140 pages.

Harpers' Second Book combines oral and written work throughout. The definitions, principles, and rules are stated in plain language. Blackboard outlines for reviews and examinations form an excellent feature of this work. The compilers of this arithmetic knew what to put in and what to omit. In 364 pages all important matters are treated.

1882. ARITHMETIC FOR DEAF MUTES.

This is a little volume of 200 pages, designed for deaf mutes, prepared by D. C. Dudley, M. A., principal of the Kentucky Institution for the Education of Deaf Mutes.

The work was published at Danville, Ky., 1882. The scope of the work embraces the fundamental rules and common fractions.

1882. STONE'S ARITHMETIC.

Dudley C. Stone, the author of this book of graded problems, was deputy superintendent of the San Francisco schools, and his opportunities for observation enabled him to prepare a manual which would guide teachers in concentrating arithmetical instruction. His effort was along the line of business arithmetic, and in which he had found pupils mostly deficient. To give the pupil the power of correct and concentrated thought and skill and accuracy in computation, the plan which suggested itself to Mr. Stone was to place before the learner such problems as occurred in business affairs.

The title of the work is: Essentials of Arithmetic, consisting of 1,000 graded problems.

The grading is "back-end first," that is, the lowest grade is seventh, when rationally it, being the lowest, is the first grade. According to the author's arrangement the number of problems in each grade is, seventh, 100; sixth, 100; fifth, 100; fourth, 100; third, 100; second, 100; first, 100; supplementary, 200; bills in United States money, cash accounts, etc., 100.

The book is a 12mo, 141 pages, published by A. L. Bancroft & Co., San Francisco. 1882.

1882. HUTTON'S MENSURATION.

The Manual of Mensuration, by Henry H. Hutton, M. A., principal of the High School, Waverly, N. Y., is an excellent treatise for common and high schools. The definitions are concise, the rules briefly stated, and the exercises sufficient in number.

The areas and solids of elementary geometrical figures, the conics and their oids, as well as irregular bodies, are included in this work. A bright class can "cipher through this book" in four months. It is a mechanical drill book in which the demonstrations are not given. Published by C. W. Bardeen, New York, 1882, 168 pages.

1882. HOOSE'S ARITHMETIC.

The author, James H. Hoose, A. M., Ph. D., and principal of the State normal school at Cortland, N. Y., has given the essentials of Pestalozzi's system of teaching numbers in this little book. It is a helpful manual for the primary teacher. The introduction is worth the price of the book. It is a 12mo, 216 pages, published by C. W. Bardeen, Syracuse, N. Y.

1882. SAMUEL H. GOODYEAR.

Business Calculations. A Brief Arithmetic for the Office and School Room. Containing Principles, Explanations, Rules, and Oral and Written Practice in all Computations pertaining to Business. "*Order and method render all things easy.*" By Samuel H. Goodyear, A. M., (Principal Cedar Rapids Business College). Author of "Book-keeping and Business Practice," and "Actual Business for the School Room." Cedar Rapids, Iowa: E. J. Hubbell & Co., Publishers of Commercial Text Books and Blanks. 1882.

12mo, 222 pp.—A. M.

1882. G. DUVERNOY.

Arithmetical Examples in the Fundamental Rules with Abstract Numbers, for Slate Exercise. By G. Duvernoy, Professor in Houston High School. Houston: M. J. Sherwood, Publisher. 1882.

Small 18mo, 58 pp.—A. M.

1882. J. C. DOLAN.

Dolan's Drill Tables in Addition, Subtraction, Multiplication, and Division, adapted to Graded and Ungraded Schools. By J. C. Dolan, Principal Hancock Public Schools, Pittsburg, Pa. James M'Millin, Printer, 111 Third Avenue. 1882.

12mo, 36 pp. The second edition, enlarged, 12mo, 1884, contains 50 pp.—A. M.

1882. J. M. PYLE.

Arithmetic by Analysis. By J. M. Pyle, Manager of Dixon Business College and Instructor in Anatomy and Physiology in the Northern Illinois Normal School. Dixon: W. M. Kennedy, Printer. 1882.

16mo. 110 pp.—A. M.

1882. J. H. MILLER.

Miller's Common-Sense Arithmetic: Upon the Principle of "Cause and Effect." Published by the Author. 1882.

18mo. 64 pp.—A. M.

1882. SOME TEACHERS.

Thoroughly Graded Arithmetic, designed for Elementary Schools. Part I. By Some Teachers. Buffalo, N. Y. "Volksfreund" Print, 46 and 48 Broadway.

18mo, 45 pp.—A. M.

1883. ARITHMETICAL ANALYSIS.

In this book the topics are outlined, and the problems are solved as models to be followed by teacher and pupils. The main object is to show how to do the work in a neat, logical, and elegant manner. While it applies more particularly to Ray's New Practical Arithmetic, it can be used almost as well with any other treatise. The Arithmetical Analyses and Outline Lessons fill 118 pages which close the text-book course, and in an Appendix of 63 pages are given model analyses and unique solutions of many interesting problems.

This is a good manual to assist the teacher in putting his knowing into convenient shape for instant use.

The work was entered for copyright by the author, W. H. F. Henry, in 1883, and it is published by J. E. Sherrill, Indianapolis.

1883. THOMAS TUTTLE.

Practical Application of the Slide-Rule, or Logarithmic Solution of Mechanical and Practical Questions by Inspection; with Rules for the Use of the Steel Square, and a Comprehensive Arithmetic, containing Rules and Explanations for the Solution of all Practical Questions required by the Mechanic, Farmer, or Business Man; to which is added a Scientific Method of Ascertaining the Dominical Letter for any Year, and the Day of the Week for any Date, from the Christian Era to the End of 10,000 Years; Historical Data, Etc., Etc. By Thomas Tuttle. Boston: Published by the Author. 1883.

12mo. 144 pp.—A. M.

1883. S. C. DANFORTH.

The Mathematical Gem, being a Treatise on all the Peculiarities in the Use of Figures, and containing New Rules and Methods designed for the Use of the Teacher and the Mathematical Student everywhere. By S. C. Danforth. Omaha, Neb.: Samuel Rees, Printer and Book Binder. 1883.

Small 18mo, 101 pp.—A. M.

1883. JOHN H. LEONARD.

Leonard's New and Time-Saving Method for Subtraction of Fractions, with many Corollaries on Simple Numbers deduced from the Fractional Treatise. Sacramento: H. S. Crocker & Co., Printers. 1883.

Small 18mo. 55 pp.—A. M.

1883. H. G. SQUIRES.

The Rapid Reckoner Manual, containing Answers to nearly 7,000 Problems in Addition, Subtraction, Multiplication & Division, also, explicit instructions for Using the Rapid Reckoner. And a Full Exposition of the Pittsburgh System of Rapid Arithmetic. By H. G. Squires, Principal Thirteenth Ward Public Schools Pittsburgh, Pa.

12mo, 84 pp.—A. M.

1883. JUDGE JOHN WELCH.

Mathematical Curiosities: being a series of Puzzles, Surprises, New Rules and Short Cuts, including a cheap and novel form of Interest Table, or Method of Computing Interest, by Judge John Welch, late Chief Justice Supreme Court of Ohio. Athens Messenger. 1883.

8vo, 55 pp.—A. M.

John Welch was born in Harrison County, Ohio, October 28, 1805. He was graduated at Franklin College in 1828, studied law, and was admitted to the bar in 1833. Was prosecuting attorney 1834-1839; State Senator 1846-47; in 1850 was elected to Congress, serving one term; in 1852 was

a member of the national convention that nominated Winfield Scott for the presidency: in 1856, elector on the Fremont ticket. Was judge of the court of common pleas in 1863-65, and was then raised to the supreme bench, serving thirteen years. Franklin College gave him the degree of LL. D. in 1867.—A. M.

1883. CHARLES L. HOWARD.

Graded Examples and Problems in Arithmetic. By Charles L. Howard. Second Edition. St. Louis: American School Book Company. 1883.

16mo, 80 pp.—A. M.

——— Charles L. Howard. A Complete Arithmetic for Common and Graded Schools. By Charles L. Howard. Knight, Loomis & Co., Boston, New York, Chicago.

12mo, 192 pages + 32 pages of Answers, and "Notes, Suggestions, and Solutions for Difficult Products." No date nor copyright.—A. M.

1883. M. FRENCH SWARTHOUT AND M. A. FARNHAM.

Sheldon's Graded Examples in Arithmetic. First Book. By M. French Swarthout, and M. A. Farnham. Sheldon and Company, New York and Chicago. n. d. Copyright, 1883.

12mo, 205 pp. Second Book. By the same authors. 12mo, boards, 221 pp.—A. M.

1883. S. A. MORROW.

Brevity, Simplicity and Utility, Applied to Business Calculations. By S. A. Morrow, of Eutaw, Ala. Published only by the Author. Price fifty cents. Address S. A. Morrow, Jackson, Tenn.

24mo, 78 pp.—A. M.

1883. D. M. GARRETT. (?)

How to become Quick at Figures. Comprising the Shortest, Quickest and Best Methods of Business Calculations. Thirteenth Edition. Troy, N. Y.: H. B. Nims & Company. 1886.

12mo, 190 pp. No name on title page. Copyrighted by D. M. Garrett, probably the author, 1883.—A. M.

1883. NATHAN NEWBY.

Outlines of Number Science. By Nathan Newby, Professor of Mathematics in the Indiana State Normal School, Terre Haute, Indiana. Terre Haute: Heleb & Goodwin Press. 1883.

16mo, 186 pp.—A. M.

1883. FISH'S ARITHMETICS.

A two-book series of arithmetics by Daniel W. Fish, A. M., published by Messrs. Ivison, Blakeman & Co., New York, in 1883, as follows: 1. Arithmetic Number One, Oral and Written, 176 pages. 2. Arithmetic Number Two, Oral and Written, 336 pages.

Number One is a real live book for pupils just beginning the subject. Children never need an arithmetic till they can read the problems. "Baby arithmetics" have no place in a well-conducted schoolroom. This is by far the best primary arithmetic the author has written. A fit companion volume is Number Two. For the average school these two books, with Robinson's Intellectual, form a good course. They are published by Messrs. Ivison, Blakeman & Co., New York.

1884. JOHN W. COOK'S ARITHMETIC.

Methods in Written Arithmetic, by John W. Cook, is a neat little volume on the How to teach, consisting of 189 pages, printed in Chicago. It was published in Chicago in 1884.

1884. W. H. SADLER AND W. R. WILL.

Sadler's Inductive Arithmetic. A Comprehensive and Practical Treatise, embracing the latest and most approved methods of performing numerical computations. Complete Edition. By W. H. Sadler, Associate Author of "Orton & Sadler's Business Calculator," "Sadler's Counting-House Arithmetic," President, Founder, and Proprietor of the Bryant, Stratton & Sadler Business College, Baltimore, and W. R. Will, Principal of the Mathematical Department of the Bryant, Stratton & Sadler Business College, Baltimore. Second Edition. Baltimore, Md.: W. H. Sadler, Publisher, Nos. 6 and 8 N. Charles St. 1885.

8vo, 721 pp. A very comprehensive work.—A. M.

1884. HENRY A. JONES.

An Aid to Numerical Calculation. Mental and Written. Containing New and Valuable Methods of Computation. Embracing a System of Abbreviated Multiplication, also a New Process and General System of Abbreviated Division. Adapted to and designed for the Use of Academies, Higher Schools, Private Schools, and the Higher Grade of Scholars in the Public Schools. Arranged by Henry A. Jones. Southington, Conn.: Jones & Savage. 1884.

16mo, 202 pp.—A. M.

1884. C. C. FIELDS.

Practical Treatise on Cancellation and How to Cancel, Elemented in Common Sense Terms that All Can Understand. Giving Clear and Explicit Instructions How to Solve any Practical Mathematical Problem by Cancellation, Together with Many Different Methods of Multiplication, Addition, Division, and Their Proofs. Designed to Instruct All in the Shortest Possible Way of Solving Problems. Bristol, Tennessee: Published by C. C. Fields.

36mo, 124 pp.—A. M.

1884. GEORGE H. WOODWARD.

1000 Test Problems in Arithmetic, arranged for Drill in High Schools, Academies, and Normal Institutes. With an Appendix of Practical Outlines, Rules and Formulas. By George H. Woodward. Indianapolis, Indiana: Normal Publishing House, J. E. Sherrill, Proprietor. 1889.

12mo, 114 pp. Copyright 1884.—A. M.

1884. J. W. FREEMAN.

Arithmetical Problems. A Choice Collection of Carefully Prepared Problems, Embracing all the Leading Operations of Arithmetic. By J. W. Freeman, Author of The Improved Geographical and Historical Cards. Chicago: A. Flanagan, Publisher.

18mo, 27 pp.—A. M.

1884. EDWARD ROTH.

A Short Arithmetic Part First: The Four Rules especially prepared for Beginners at School and for those desirous of giving Instruction at Home. By Edward Roth, A. M. Philadelphia: No. 1135 Pine Street. 1884.

12mo, 100 pp.—A. M.

1884. MISSES ELLEN W. BOYD, JOSEPHINE S. SCHOFIELD, AND AUGUSTA HAYES

St. Agnes School Arithmetic. Inscribed to the Graduates of the School. Albany, N. Y.: H. H. Bender, Publisher, 71 and 73 State Street. 1884.

18mo, 146 pp.—A. M.

1884. B. FRANK PINKERTON.

The Practical Mental and Written Arithmetic, uniting Oral and Slate Work, and containing over 4500 Practical Problems. By B. Frank Pinkerton, Superintendent of Schools, Holidaysburg, Pa. 1884.

12mo, 279 pp.—A. M.

1884. G. H. DISMUKES.

The Practical Calculator, a Teacher and Guide for Solving all Practical Questions, in a Quick, Easy and Simple Manner, containing Rules that have never been Introduced to the Public. By G. H. Dismukes. Published for the Author. Paris, Texas.

24mo, 96 pp.—A. M.

1884. J. NEWTON SMITH.

Handy Helps for those who Help Themselves. "Practice makes Perfect." Published by J. Newton Smith, New York.

A very small book, cloth, gilt edges, not paged. Apparently of but little account.—A. M.

1884. K. W. DYNIEWICZ.

Arytmetyka czyli Ksiazka Rachunkowa. Opracowal Podlug Arytmetyk Amerykańskich K. W. Dyniewicz. Chicago, Illinois. Drukiem i Nakladem Wladyslawa Dyniewicza. 1884.

18mo, 120 pp.—A. M.

1885. NICHOLSON'S ARITHMETIC.

There are three books in this series: 1. Primary Arithmetic, 91 pages, 1885; 2. Intermediate Arithmetic, 224 pages, 1885; 3. Complete Arithmetic, 329 pages, 1885.

Prof. J. W. Nicholson, A. M., professor of mathematics in the Louisiana State University, did good work in the preparation of these books. The subjects are well arranged, the matter admirably selected, and the illustrations apt and pointed.

F. E. Hansell & Bros., New Orleans, are the publishers.

1885. TOWNSEND'S ARITHMETICS.

These arithmetics are published by Scranton, Wetmore & Co., Rochester, N. Y. Three books constitute the series. Each is a book of problems. Julius L. Townsend, the author, is principal of Franklin Grammar School, Rochester. The Primary Arithmetic contains 625 problems; the Intermediate Arithmetic, 700 problems; and the Grammar School Department, 2,000 problems.

Good judgment is displayed in the selection and graduation of the problems.

1885. RICHARDS'S NATURAL ARITHMETIC.

This is a 12mo. of 192 pages, published in 1885 by The Interstate Publishing Company of Boston and Chicago. The author, Hon. Zalmon Richards, Washington, D. C., is a teacher of wide experience, and the Natural Arithmetic embodies his views of what should be taught in elementary schools as well as what should be omitted. The author claims that the Natural Arithmetic, "if properly used, will obviate most of these difficulties and shorten the time necessary to master it to one-half or less, at the same time secure greater efficiency."

This statement is made to depend upon the following fundamental principles: 1. The name and meaning of every unit must be kept in mind; 2. The number of units of any name that makes one of the next higher must be kept in mind; 3. Numbers or units of different kinds must be reduced to the same before they can be added or subtracted.

Numbers are again divided into four varieties, based upon the unit principle, namely: 1. Whole numbers or common units; 2. Decimal units; 3. Common fractional units; 4. Denominate units.

These four varieties of numbers can each be used in four ways—added, subtracted, multiplied, divided.

It remains now to teach the pupils to understand and to read the language of numbers, and then to use numbers in the ways indicated; but the application of numbers to the demands of life is regarded as the most difficult branch of this art.

The volume is divided into the arithmetic proper, consisting of 122 pages, and an "Appendix for the Teacher's Use" of 70 pages. The size of the volume indicates the brief treatment of topics; yet the exercises, explanations, suggestions, etc., are admirably calculated to help both teacher and pupil.

1885. THE NEW ARITHMETIC, BY 300 AUTHORS.

This is a compilation of problems by some 300 different contributors, arranged and edited by Mr. Seymour Eaton, and printed in Detroit by The Supplement Company.

The exercises are grouped into 8 departments, each of which includes about 25 pages. The problems are such as require a moderate effort for the pupil of average ability. The book can be used advantageously by the teacher where the regular text does not supply enough problems for exercise. It is simply a book of problems.

1885. HERMAN MARTIN.

Hawkeye Educational Series. Elementary Arithmetic. By Herman Martin, B. S., B. D. Miller, Girton & Waters, Des Moines, Iowa. 1885.

16mo, 179 pp.—A. M.

1885. FRANK H. HALL.

Arithmetic of the Farm and Workshop. Designed for the More Advanced Pupils in District Schools, and for Supplementary Work in City Schools. By Frank H. Hall, Principal of Sugar Grove (Ill.) School. Chicago: Geo. Sherwood & Co. 1885.

16mo, 76 pp.—A. M.

1885. H. BRODT.

Elementary Lessons in Arithmetic for Schools and Families. By H. Brodt, Professor of Pedagogy in Elmhurst College. Elmhurst, Illinois: H. Brodt. 1886.

12mo, 52 pp.—A. M.

1885. PRACTICAL TEACHER.

An Appendage; or the Complete Arithmetic, Mental and Practical; with the Tables of Weight, Measure, Money, &c. By a Practical Teacher. New York, n. d.

Pp. 170-217. Copyrighted 1855.—A. M.

1885. R. S. DAVIS.

The Arithmetical Reviewer. Five Hundred Questions, Five Hundred Problems, and Five Hundred Mental Examples, embracing all the Leading Subjects of Arithmetic; together with numerous Notes, Diagrams, and Tables of Valuable Information. In Two Editions. The Pupil's Edition, containing only the Questions and Problems. The Teacher's Edition, containing Questions, Problems, Mental Examples, Notes, Diagrams and Tables; together with the Answers to both the Written and Mental Examples. By R. S. Davis, Principal of the North Hill School, Burlington, Iowa. Copyright by R. S. Davis, 1885.

Small 18mo, not paged.—A. M.

1885. B. A. HATHAWAY.

1001 Questions and Answers on Arithmetic. Lebanon, Ohio: Published by the Author. 1887.

161 pp. Copyright 1885.—A. M.

1885. ELLEN L. BARTON.

Language Lessons in Arithmetic. Written and Oral Exercises. By Ellen L. Barton, Principal Portland School for Deaf. Boston: Published by Ginn & Co. 1885.

239+195 pp.—A. M.

1885. S. W. GOODHUE.

The Geometrical Bird Method in Mental Multiplication. The Inverted Pyramid Process in Written Multiplication. By S. W. Goodhue, Chicago: Printed by H. H. Hoffmann & Co. 1885.

18mo, 94 pp.—A. M.

1886. SHELDON'S TWO-BOOK SERIES.

This series of arithmetics consists of the Elementary and the Complete Arithmetic.

The Elementary Arithmetic takes the pupil through simple interest. The exercises judiciously combine oral and written work, while the Complete Arithmetic embraces all that is necessary in a work that is not a higher arithmetic. Together they contain 618 pages of printed matter, of which the Complete Arithmetic has 400 pages. In matter and form these two books reflect credit on the firm of Messrs. Sheldon & Co. The series was published in 1886.

1886. WELCH'S INTERMEDIATE PROBLEMS.

This manual contains more than 2,000 problems in fractions, reduction, and decimals. It is a 12mo., 96 pages, prepared by Emma A. Welch, a teacher, and is published by C. W. Bardeen, Syracuse, N. Y., 1886.

1886. GEORGE SOULÉ.

Soulé's Intermediate, Philosophic Arithmetic, embracing Oral and Written Problems involving the Great Principles of the Science of Numbers, and their Application to Practical Computations. The Philosophic System is used throughout this work. This System gives Strength, Acuteness, Expansion, and Depth to the Mind, and thus prepares it for active service in the field of practical Mathematics and upon the Highest Planes of Thought. Contractions in Numbers and Practical Work in Percentage, Interest, Mensuration of Surfaces and Solids, constitute special features of the Book. It is replete with new, practical problems, and it sparkles with the rarest gems of the Science of Numbers. The Metric System is also fully presented and clearly elucidated. By Geo. Soulé, Practical and Consulting Accountant, Commercial Lawyer, President of Soulé's Commercial College and Literary Institute, Author of Soulé's Scientific and Practical System of Book-keeping, The "Introductory Philosophic Arithmetic," "Contractions in Numbers," "The Philosophic Drill Problems," and the "Analytic and Philosophic Commercial and Exchange Calculator." New Orleans. Published by the Author. 1886.

16mo, 511+52 pp.—A. M.

1886. D. J. O'DONNELL.

O'Donnell's Perfected Science of Arithmetic, embracing New Principles, and Instant Methods of Solution. Instructions to Teachers, illustrating Methods of Developing the Powers of Reason, Judgment, Observation and Instant Perception, thus enabling the Private Student, without other Assistance, to become a Master of the Science. Rules and Formulas are Discarded. (Those "make-shifts for brains," which authors and teachers use to assist the student by taking away

the necessity of REASONING, which is the principal means of mental development, and *this* is the chief object of Higher Mathematics.) D. J. O'Donnell, Author and Publisher, East Saginaw, Michigan. 1886.

16mo, 300 pp.—A. M.

1886. SAMUEL MECUTCHEN AND GEORGE M. SAYRE.

Butler's Series. The New American Practical Arithmetic. By Samuel Mecutchen, A. M., and George M. Sayre. New Edition, Revised and Enlarged. Philadelphia: E. H. Butler & Co. 1886.

12mo, 382 pp.—A. M.

1886. B. FRANK PINKERTON.

Easy Steps to the Practical Mental and Written Arithmetic. By B. Frank Pinkerton, Superintendent of Schools, Hollidaysburg, Pa. Address, for Information, etc., B. Frank Pinkerton, Hollidaysburg, Pa. 1886.

12mo, 80 pp.—A. M.

1886. A. C. HUMMER.

Essence of Arithmetic. By A. C. Hummer. Copyrighted by the Author in 1836.

52 pp.—A. M.

1886. J. B. WELLINGTON.

Wellington's Rapid Calculator and Accountants' Assistant. By J. B. Wellington, Chicago, Ill. For the benefit of Schools, Teachers, Merchants, Clerks, Bookkeepers, and the General Public. Chicago: Brown, Pettibone & Co., Printers. 1886.

Small 18mo, 52 pp.—A. M.

1886. WILLIAM H. CADWALLADER.

The IXL Lightning Calculator, a Mathematical Compendium for Students, Farmers, Laboring Men, Mechanics, Merchants, Clerks, Bankers, Etc., by William H. Cadwallader, Ludlow Falls, Miami Co., O. Computations of Percentage and all of its Applications Made Easy. Something far superior to anything of the kind ever before offered to the Public, being a collection of brief, lucid, comprehensive and accurate methods of solving all problems relating to Percentage, its applications, Etc. Charles S. Kessler, Printer, West Milton, O. 1886. First Thousand Edition.

18mo, 55 pp.—A. M.

1886. INDIANA EDUCATIONAL SERIES.

Elementary Arithmetic. Combining Oral and Written Exercises. Indianapolis, Ind.: Indiana School Book Co.

16 mo, 192 pp. Copyright, 1886.—A. M.

——— Complete Arithmetic, Combining Oral and Written Exercises. Indianapolis, Ind.: Indiana School Book Co.

16mo, 352 pp. Copyright, 1886.—A. M.

1886. ANDREW J. RICKOFF.

Numbers Applied: a Complete Arithmetic. By Andrew J. Rickoff, A. M., LL. D. New York, Boston, and Chicago: D. Appleton and Company. 1888.

16mo, 416 pp. + 33 pp. of answers.—A. M.

Andrew Jackson Rickoff was born in Mercer Co., N. J., Aug. 23, 1824. He was educated in Woodward College, Cincinnati, Ohio, and afterwards taught, and has been superintendent of

schools in Portsmouth, Cincinnati, and Cleveland, Ohio, and Yonkers, N. Y. At the International Exposition in Philadelphia in 1876, Mr. Rickoff received a medal as the designer of the best plans for school buildings. He is the author of many schoolbooks.—A. M.

1886. HERMAN MARTIN.

Hawkeye Educational Series. Complete Arithmetic, by Herman Martin, B. S., B. D. Miller, Girton & Watters, Des Moines, Iowa.

16mo, 315 pp.—A. M.

1886. R. K. BUEHRLE.

The Lancasterian Exercises in the Fundamental Rules of Arithmetic. Prepared by Supt. R. K. Buehrle. Philadelphia: Sower, Potts & Co., 530 Market street.

Small 18mo, 36 pp.—A. M.

1886. JAMES HOGG.

A practical Course of Instruction with Hogg's Improved Slide-Rule in Arithmetic and Mensuration; also Rules, Examples, and Tables for Making Calculations by Logarithms; also a Practical Course of Instruction in the Calculations of Machinery for the Superintendent and Overseer in the Textile Manufacture, with Rules, Calculations, and Tables. By James Hogg. Boston: Rand Avery Company. 1887.

18mo, 161 pp.—A. M.

1886. LUCINDA ISABELLA ELLIS.

The Teachers' Aid: A New and Easy Method for Teaching the Fundamental Rules of Arithmetic. By Lucinda Isabella Ellis, Superintendent of Primary Schools, Salem, N. J. Copyrighted October 22, 1886. Salem, N. J. Gwynne, Printer. 1889.

8vo, 144 pp.—A. M.

1886. ED. M. MILLS AND S. A. KAGY.

The Dollar Method in Stocks and Bonds, Exchange and Commission, including Problems in True and Bank Discount, Profit and Loss, and Interest, all Neatly Analyzed and Explained, together with Notes and Suggestions to Teachers, by Ed. M. Mills and S. A. Kagy.

18mo. 70 pp. Copyright, 1886. No date nor place of publication on title page.—A. M

1887. OUR NEW ARITHMETIC.

First Steps in Number, by William M. Peck, A. M., is published by A. Lovell & Co., New York, 1887.

It is designed to furnish pupils work in arithmetic for four years, beginning with the First Reader. The general plan of the book is that of the Grube Method up to the number 20. No illustrations adorn the pages, but it is, nevertheless, a working book. In the time allotted to study the pupil is expected to learn well the four fundamental rules and a few simple exercises in fractions. "The Hints to Teachers" are first class. The book is well printed, and it might be used to good advantage as a supplementary reader, as well as an arithmetic. It is a 12mo, 144 pp.

1887. THE NEW PRACTICAL ARITHMETIC.

This book was written by Waite A. Shoemaker and Isabella Lawrence, of the State Normal School, St. Cloud, Minn. It is one of the State Series of text-books of that State, and it was published by D. Appleton & Co., New York, in 1887.

It is designed for use in grammar and high school grades, according to the preface. The appearance of the book is pleasing to the eye, and every one of the 412 pages[1] shows the finest skill of the printer's art.

[1] The 1890 edition contains only 404 pp.

1887. PAYSON'S PRACTICAL ARITHMETIC.

Mr. John P. Payson, the author of this treatise, was the former master of the Williams School, Chelsea, Mass. Lee & Shepard, publishers, Boston, Mass., 1887.

This book is strictly a "drill book," the examples being such as occur in the business world. The author believes that "pupils should be taught to think, rather than to become expert in solving difficult problems." The work is practical, direct, and energetic. Every page bears the impress of a live teacher. In 145 pages the author has presented the most useful as well as the most important topics found in arithmetic. It is an excellent elementary work.

1887. CALIFORNIA ARITHMETICS.

The California State Series of arithmetics consists of two books—Primary Number Lessons, and Advanced Arithmetic. The first is a 12mo, 149 pages, and the second a 12mo, 288 pages. Both were published in 1887. The author's name does not appear.

Primary Number Lessons is a beginner's book, and it conducts the learner through simpler exercises in the fundamental rules, not including long division. Till the pupil reaches page 109 he encounters no number greater than 144. From page 133 to 141 the exercises in fractions form a good section. The numerous exercises illustrating the uses of the signs on pages 126, 132, 141, 142, 143, 144, 145, 146, 147, 148 are poorly and erroneously expressed. The use of the comma (,), thus: "$5 \times 6, \div 3, \times 6 - 5 - 3 - 7 + 3 = 70 - ?$," destroys the sense.

Advanced Arithmetic.—This is a brief practical treatise, filled with problems. Problems are classified under appropriate titles, and a few explanations of problems are inserted to aid the pupil in his work. The best topics are "Abbreviations" and "Glossary," yet many of the problems are well chosen. As a series for a State the books are not up to the ordinary works on this subject.

1897. H. C. SYMONDS.

Abstract of the Elements of Arithmetic arranged in Tabular Form. By H. C. Symonds. (West Point.) New York: D. Van Nostrand Co.

18mo, 130 pp.—A. M.

1887. BROTHERS OF THE CHRISTIAN SCHOOLS.

Elements of Arithmetic, Mental and Written. New Series. By the Brothers of the Christian Schools. 46 Second Street, New York. 1887.

16mo, 198 pp.—A. M.

——— Commercial Arithmetic, Mental and Written. New Series. By the Brothers of the Christian Schools. 46 Second Street. New York. 1887.

16mo, 242 pp.—A. M.

1887. CHARLES E. SAYWARD.

A Book of Practical Exercises in Commercial Arithmetic prepared for exclusive use in The Bryant & Stratton Commercial School of Boston. By Charles E. Sayward, Teacher of Arithmetic in the Bryant & Stratton Commercial School, Boston, Mass. H. E. Hibbard, Publisher, 608 Washington Street. 1887.

8vo. 155 pp.—A. M.

1887. SEYMOUR EATON.

One Hundred Lessons in Business. By Seymour Eaton, Author of "The New Arithmetic," and several other works.

8vo. 32 pp. devoted to "Short Cuts in Figures."—A. M.

1887. LARKIN DUNTON.

Methods of Teaching Arithmetic in Primary Schools. By Larkin Dunton, Head-Master of the Boston Normal School. Silver, Burdett & Co., Publishers, New York, Boston, Chicago. 1891.

16mo, 165 pp. Copyright, 1887.—A. M.

1887. B. H. WORD.

Word's Double-Quick Calculator. By B. H. Word. The Shortest, Simplest and Most Rapid Method Known. It contains all the Business Rules of Mathematics and in the Simplest Method Possible. Union City, Tenn.: Cartan's Steam Printing House. 1887.

18mo, 200 pp.—A. M.

1887. JESSE D. SPRAGUE.

Rapid Addition. A Paper on Practical Methods. By Jesse D. Sprague. New Edition, Rewritten. Boston: published by Ginn & Company. 1887.

Small 18mo, 39 pp.—A. M.

1887. W. V. WRIGHT.

Mechanics' Arithmetic; or, Practical Mensuration. For Schools and Colleges. By W. V. Wright, B. A. Twelfth Thousand. Boston: New England Publishing Co., 3 Somerset St.

8vo, 62 pp.—A. M.

1887. S. S. PACKARD AND BYRON HORTON.

The Packard Commercial Arithmetic. By S. S. Packard, President of Packard's Business College, New York, Author of the Bryant and Stratton Book-keeping Series, and of Packard's New Manual of Book-keeping and Correspondence, and Byron Horton, A. M., Principal of the Mathematical Department of Packard's Business College. New York: S. S. Packard, 101 East 23d Street. 1888.

12mo, 300 pp. School edition.—A. M.

Silas Sadler Packard was born in Cummington, Mass., April 28, 1826. He was educated at Granville Academy, Ohio, and afterwards taught at the age of 17 years. In 1858 he established a business college in New York City, and he has contributed much to the advancement of business education in the United States.—A. M.

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A few of the examples are subjoined:

Page 7, example 1: "A woman spent 5 cents in the morning for a glass of beer and 10 cents at night for a jug of lager. What did she spend for both?

"2. This woman said she was starving for food. She could have got a loaf for 5 cents and a pound of meat for 10. How much would they have cost?

"Then she could have had food for a day for the price of her drink."

Page 8, example 13: "Pat gave 5 cents for 2 cigars, 1 cent for matches, 12 cents for lager beer; 3 cents he lost playing pitch penny; 15 cents he gave for a lottery ticket, worth nothing at all. What did Pat spend in all?

"14. This same Pat had no cap, and his toes stuck out of a hole in his shoe. 'Pat,' said a lady, 'why do you not buy a new cap and have your shoes mended?' Pat said: 'It would cost 25 cents to get a cap and 11 cents to have my shoe mended.' What would that be? Had not Pat wasted as much money as that?"—A. M.

Julia McNair Wright was born in Oswego, N. Y., May 1, 1840. She was the daughter of John McNair, a well-known civil engineer, whose father emigrated from Scotland in 1798. She was educated at private schools and academies, married Dr. William Janes Wright, the mathematician, in 1859, and has devoted her life mainly to literary work. Her books are mostly religious stories, anti-Catholic, and temperance.—A. M.

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James M. Greenwood was born November 15, 1836, near Springfield, Ill. He obtained his early education in the common schools. When he was 16 years old he removed with his parents to Adair County, Mo., where he worked on a farm, studied by himself, and began to teach, also spending a year in Canton Seminary. He was professor of mathematics in the normal school at Kirksville, Mo., 1867-1874, and in the latter year he became superintendent of schools in Kansas City, Mo., which position he still holds (1892).—A. M.

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CHAPTER XVI.

PUBLIC EDUCATION IN ITALY AND ITS REFORM. (1895–1899.)

BY PROF. ALEXANDER OLDRINI.

Scholæ, ut recte procedant, praeceptoribus optimis opus est—et sana doctrina imbutis. Igitur, caveant consules, ne quid Respublica detrimenti capiat.

INTRODUCTION.

Eppur si muove!

The development of public education among the masses is not only the loftiest attainment of progress, in the perception of the intellectual of every civilized nation, as a means to surely raise their people to destinies marked with superiority and glory; but it is also a problem the masses themselves nowadays begin to appreciate as the most powerful and objective means by which to foster their social and material redemption.

So that, at the end of the wonderful century that heralded to humanity at large the conception that frontiers can no more exist between nations under the enlightenment and subsequent growing applications of science, education ceases to be the patrimony of the few, a literary tournament for the mind, but affirms itself as an accomplishment of the first order for one and all in the competition for the betterment of life, and for the mastery of nature's eternal, creative forces.

Italy, the atavitical "alma mater gentium," could not, on the threshold of her third resurrection (1859) as a worldly power, fail to be strongly and immediately impressed with the truth that pervades the modern world, and her first national parliament, led by such famed men as Count Cavour, the staunch supporter of the principle of the supremacy of the civil power for Italy, "a free church in a free state," promptly decreed the necessity of compulsory instruction. Then, so soon as the Peninsula, through the holocaust of 45,000 lives, lost all along the Via Crucis of her martyrdom, and the (for her) ruinous expense of $300,000,000, could proclaim her independence from foreign rule, the first national census was ordered (1861). Although an initial measure, difficult therefore and incomplete in its methods and results, that very first census brought to light the manifold moral and material evils of which the once glorious land had become a helpless victim.

In certain districts of central and southern Italy it was then found that illiteracy had reached the average of two-thirds of the entire population, Reggio di Calabria and Catania furnishing the amazing proportion of 93 per cent of illiterates.

Marquis Massimo d'Azeglio, one of modern Italy's most brilliant

statesmen, artist and scholar, summed up the abnormal situation thus revealed by the figures of the first Italian census of public instruction and other vital matters in these memorable words: "Italy is made: we must now make the Italians."

Following his call, amid the proverbial indifference of the Italian wealthy class, and almost without means, an élite of thinkers, legislators, and enlightened progressive citizens put themselves at once to the ungrateful task of stamping out ignorance, indolence, and superstition, against the will of the seemingly degenerated Italian masses. Public men they were and humble pioneers of human progress, working together as a sacred phalanx to raise their historical country to the apprehension of modern civilization.

That some results, although not thoroughly satisfactory, were obtained within the comparatively short period of forty years, is thus due practically to their action, of which the law Casati, enforcing public primary education (1859), was the first move in the right direction. Afterwards followed the law of 1877, that expelled sectarianism from national education, permitting the adoption by the communes of Italy of new programmes for primary schools more in touch with modern aspirations and the real wants of the Italian people.

Under the law of 1877 compulsory education was enforced by requiring the appointment of teachers for children between 6 and 9 years of age as follows: First, in all communes of less than 5,000 inhabitants, one teacher of inferior class for each 1,000 inhabitants; second, in the communes having between 5,000 and 20,000 inhabitants, one teacher for every 1,200 inhabitants; third, in the communes having over 20,000 inhabitants, one teacher for every 1,500 inhabitants. At the end of 1896 all of the 8,260 communes of Italy had complied with the requirements of this law.

The nature of this sketch is such that the writer must refrain from quoting the names and the works of all the worthiest pioneers of educational reform in modern Italy. However, with a view to offering all the necessary information with regard to the fundamental difficulties that still stand in the way of its systematic development, he will offer, besides the regular statistical figures by Prof. L. Bodio, the illustrious chief of the Italian department of statistics, a survey of the most recent official documents, such as laws and reports on public education, etc., and consider with special care the reports for 1897 and 1898 of Prof. Francesco Torraca and Prof. Giuseppe Castelli, both superior officers in the department of public instruction, addressed to the present minister, Dr. Guido Baccelli, "pensatore e scienziato insigne," the originator and the energetic center of the recent movement, that marks a turning point in the reform of the whole system of education, on the following lines of his programme: "Absolute autonomy in Italy in superior and special education; decentralization and specialization of secondary instruction; and public primary and normal schools under the permanent and immediate control of the State."[1]

[1] For the full comprehension of the origin of the educational system in Italy, since the Casati law, the reader is respectfully referred to the information so intelligently collected for a number of years by Miss Frances Graham French, the zealous specialist in the school systems of northern and eastern Europe; and, furthermore, to the three sketches successively prepared by Prof. Oldrini and Prof. Bodio, for 1890-91; Prof. B. A. Hinsdale, 1893-94; and Dr. E. Rossi, 1894-95; and published in the Reports of the United States Commissioner of Education for the years specified.

I. Statistics.

Italy: Area, 114,410 square miles. Administrative divisions, 69 provinces, 8,260 communes or boroughs. Population, 31,500,000 (January, 1899). Italians abroad estimated at 4,000,000, of whom about 1,500,000 are in the United States.

Number of pupils in kindergartens and primary and normal schools in 1895–96.

	Pupils.	Per 100,000 inhabitants.	
		Pupils.	Schools.
Kindergartens	317,117	1,020	9
Public and primary schools	2,379,349	7,650	147
Private schools	210,074	675	29
Evening schools	101,025	325	9
Sunday schools	50,344	162	6
Superior female complementary schools	7,319	24	0.69
Normal schools	24,152	78	0.48
	3,089,380	9,934	

This number of pupils is about 10 per cent of the total population of Italy, besides 28,455 pupils in Italian schools abroad.

KINDERGARTENS.

Kindergartens have been instituted by the communes into which Italy is divided for purposes of administration, also by corporations, private societies, and citizens.

There are 2,813 kindergartens in 1,888 communes, frequented by 317,117 children, of whom 160,185 are males and 156,632 females; or one kindergarten to each 708 children between 3 and 6 years of age, and 15.9 per cent of the children between those age limits attending kindergartens.

Comparison for the last decade (1886–1896).

	1886.	1896.	Increase.
Kindergartens	1,489	2,813	1,324
Pupils	252,763	317,117	64,354
Teachers	5,603	6,884	1,281

In 992 kindergartens all the children were admitted free; in 1,208 only the children of the poor were admitted free; in 613 all children paid (of which 418 kindergartens were private and 195 public).

Four hundred and seventy-eight kindergartens had adopted the method of Froebel, 135 that of Aporti, and 2,200 both methods.

The expenditure for the year 1896 for all kindergartens appears to have been $1,332,000, this amount having been supplied by the state, the provinces, and the communes, as well as by donations, bequests, contributions, etc. Recently the kindergarten institution has been brought under the control of the scholastic authorities, under the initiative of Minister Baccelli.

COMPULSORY PRIMARY INSTRUCTION.

Teachers.—The number of public-school teachers in 1896 was 51,505, or 1.65 to every 1,000 inhabitants—that is, 1.47 for primary courses and 0.18 for normal and superior female courses complementary of the former.

Public day schools.—There were 50,526 opened in 8,247 communes; that is, 40,705 obligatory of the inferior degree and 4,798 of the superior, besides 5,023 not obligatory, of which 4,046 were of the inferior and 977 of the superior degree.

School buildings.—For the inferior degree there were 44,751 buildings, with 44,431 teachers and 1,341 assistant teachers; for the superior degree, 5,775 buildings, located in 1,831 communes, provided with 5,447 teachers and 286 assistants.

Pupils.—The total number of pupils that attended public day schools of the inferior grade in 1896 was 2,212,325, of whom 139,577 were in private schools duly recognized by the Government.

The primary inferior degree, divided into three courses, had 1,123,929 pupils for the first elementary year, 655,830 for the second, and 432,566 for the third.

The number of pupils attending the primary superior course, a complementary course of the inferior, was 167,024, of whom 106,171 attended the fourth year's course and 60,853 the fifth and last; in all, 167,024, of whom 21,560 belonged to private schools recognized by the Government as equal to the public ones.

So that the grand total for the five classes constituting the inferior and superior complementary courses in primary public day instruction was, including both public and private schools, in 1896, 2,212,325 plus 167,024—that is, 2,379,349, or 8.33 for every 100 inhabitants in 1896—whereas in 1872 the attendance was 6.43 per cent of children between 6 and 12 years of age. The full 100 per cent in attendance, under the obligation of the law relating to public elementary schools, was possible only in the northern provinces of Piedmont and Lombardy.

The number of public school buildings regularly opened in 1896 averaged 1.62 for each 1,000 inhabitants.

The pupils registered in each of them averaged 49 for the inferior three courses and 29 for the superior two courses.

The number of private day classes in schools where there was no regular division between the inferior and the superior degree, as is the case in Government schools, reached 4,210; these were located in 9,000 buildings, with 9,565 teachers having a diploma and 1,088 without one. They were attended by 210,070 pupils (69,424 males, 140,650 females), divided as follows: 165,011 in the inferior three courses (51,114 males, 113,897 females) and 45,064 (18,310 males and 26,753 females) in the superior.

The proportion of private school buildings to the population was 0.29 per 1,000 inhabitants, the pupils attending them 6.73 per 1,000 inhabitants, or 23 pupils to each building and 1 teacher to every 22 pupils.

There was, therefore, a total, both in public and private primary schools, of 59,526 buildings, 62,077 teachers, and 2,589,423 pupils, of whom 2,377,336 were in the three inferior and 212,087 in the two superior grades, or 19 buildings per 10,000 inhabitants on an average and 83.26 pupils per 1,000 inhabitants, this latter proportion being identical with the 8.33 per cent of the total population of Italy before

mentioned. Evening, Sunday, female complementary, and normal pupils are not included in these figures.

Enrollment.—The children subject by law to attend primary schools in 1896 numbered 2,353,165. There were actually found to be enrolled the following number:

Inferior degree:		
Under 7 years of age	72,225	
From 6 to 9 years of age	1,558,977	
Over 9 years of age	726,968	
Not classified	19,166	
		2,377,336
Superior degree:		
Under 10 years of age	31,391	
From 10 to 12 years	117,427	
Over 12 years of age	62,442	
Not classified	827	
		212,087
Grand total		2,589,423

The excess of the actual inscriptions (2,589,423) over the obligatory (2,353,165) or 236,258, is to be attributed to the eventual admission to school of children under 6 and children over 12 years of age.

Graduation.—The pupils of the three inferior classes of primary instruction, whether they come from public or private schools, obtain at the end of the third scholastic year after the examination a diploma that admits them to the two next superior classes. Those having graduated from the superior courses are admitted to the normal school or to the first class of secondary instruction, either classic education (ginnasio) or technical and commercial courses. A royal decree (April 26, 1896) prescribed that all pupils having received during the year a monthly average of seven-tenths points should not be required to undergo examination at the end of the scholastic year. This provision seemed not to have proved practicable, however, in every case, since a subsequent decree (1898) reestablished the obligation of the examination for the pupils of the first, second, and fourth elementary classes.

Results of the examinations for the year 1895-96.

	Male.	Female.	Percentage of Graduation.	
			Male.	Female.
Three inferior courses:				
Examined	154,526	121,063		
Graduated	107,113	88,928	69.32	73.46
Two superior courses:				
Examined	16,203	8,339		
Graduated	11,556	6,478	71.32	77.68

Night and Sunday schools.—With a view to complete the instruction of children that have discontinued their studies after graduation from the third year of compulsory instruction the law of 1877 compelled them to attend night or Sunday schools for one year longer. However, the law has not made it compulsory upon the communes to keep night and Sunday schools, so that this kind of public instruction can not give good results, lacking, as it does, proper direction and control. Adults are admitted in them from the fact that they

are public and free of charge and supported by the State and (voluntarily) by the commune when not by private contributions.

In 1896 night and Sunday schools were regularly opened in 1,969 communes only; that is, night schools in 1,059 communes and Sunday schools in 498, and night and Sunday mixed in 412. There were none open in 6,291 communes. The school buildings occupied numbered 4,687, 2,808 for night and 1,879 for Sunday schools. The attendance amounted to 151,369 pupils, 101,025 taking night and 50,344 Sunday courses (110,468 male and 40,901 female).

Superior and complementary female schools.—The programmes for these schools are such as to correspond to preparatory courses for admission to normal schools. They include drawing, foreign languages, bookkeeping, and other branches pertaining to both arts and professions.

In some of these schools, especially if annexed to conservatories of music or private colleges, the pupil being prepared at once for the diploma of teacher, all the subjects are taken up according to the programme of normal schools, with the addition of pedagogy, morals, hygiene, and rights and duties of a citizen.

The superior elementary female schools, however, have been instituted with the main object of securing to girls, the majority of whom do not pursue special or higher instruction, a degree of instruction superior to the one imparted in the two elementary courses, with a view to enable them to enter at once upon practical bookkeeping, correspondence, etc., whether in a store or with a commercial firm, or to prepare them to make a living in other practical industrial fields, such as artificial flowers, gloves, hats, dresses etc., where young women are mostly desired.

In 1895–96 there were 142 schools complementary to the elementary courses, and 72 schools so complementary and also preparatory to the examinations for the diploma of admission to normal schools. These schools had in all 1,765 teachers and 7,319 girls. The majority of them were private, that is, there were 137 private to 77 public. Of the public schools, 45 were supported by bequests and public donations, 24 by the funds of the commune, and 8 directly by the Government.

Normal schools.—In 1895–96 there were 148 normal schools, of which 138 were for superior instruction (32 for males and 106 for females) and 10 for inferior instruction. The new law, promulgated in 1896, reduced them to a uniform basis, with three courses, at the end of which the pupil receives a diploma of teacher for the two degrees of primary or elementary instruction.

The majority of the normal schools, 117 out of 148 (34 for males and 83 for females) are now under the control of the Government; the remaining 31, not following the official programme, are free, and are divided into 2 schools for males and 29 for females, with a total of 2,253 pupils.

The total number of pupils in Italy's normal schools in 1895–96 was 24,152 (1,836 males and 22,316 females), averaging 163 pupils to each school, of whom 161 were females and 2 only males. Of the total population, 4.76 per million were normal pupils.

The disproportion between the attendance at normal schools of young men and young women really indicates the increasing tendency of the latter to control the teaching in the field of primary education throughout the country, while the male element, as will be explained later on, pursues almost exclusively its way toward secondary, special,

and superior instruction. It is gratifying to be able to state at this juncture that the standard of efficiency of female teachers for primary instruction is considered by competent authorities such as to insure continued progress in the efficiency of the elementary schools themselves, considered as a whole.

The attendance of the two sexes at normal schools will be better appreciated by comparison with the statistical figures of the last decade.

	1885-86.	1896.
Normal schools	133	148
Male pupils	1,287	1,836
Female pupils	9,255	22,316
Percentage of males	12	8
Percentage of females	88	92

In 1895–96 the examinations in normal schools for teachers' certificates were attended by 7,681 pupils, of whom 5,183 were admitted; 52 per cent being males and 74 per cent females.

Italian schools abroad.—It may be interesting to learn of the efforts made by the Italians, under the intellectual initiative of the National Literary Society Dante Alighieri, for the preservation of the national language in foreign countries.

In Turkey, Asia Minor, Egypt, Greece, Tunis, and Tripoli elementary instruction is given in 33 schools for males, and 22 for females, attended by 4,945 boys and 3,145 girls—or, for 55 schools for primary instruction, 11,087 pupils, besides 11 kindergartens with 1,786 children.

There are, moreover, Italian schools in a number of European States, as well as in South America and in the United States, with an attendance of 11,215 pupils of both sexes, and a number of parochial schools having about 6,053 pupils.

These figures, published by the Italian department of foreign affairs, have been prepared by the consular authorities in the above-mentioned countries, and are for the year 1898.

EXPENDITURE FOR PRIMARY AND NORMAL PUBLIC INSTRUCTION.

The communes of Italy are compelled by law to support, out of their income, a number of public elementary schools proportional to the population; to pay all salaries to teachers, clerks, and school employees; to contribute to their pension funds, and to provide for all rentals and furniture, including gymnastic apparatus.

The minimum yearly salary for teachers paid by them is determined by law as follows:

Teachers of the superior degree:	
Cities, males	$200 to $264
Cities, females	160 to 211
Country, males	160 to 180
Country, females	130 to 144
Teachers of the inferior degree:	
Cities, males	180 to 200
Cities, females	144 to 160
Country, males	140 to 150
Country, females	112 to 130

These salaries are increased by one-tenth every six years of uninterrupted service, and four times in a period of twenty-four years of service.

The communes, however, without obligation under the law, pay also for kindergartens, evening and Sunday schools, and a number of primary schools beyond the obligatory ones, as well as for special normal schools and colleges thereto annexed, for which they furnish the buildings and the furniture and eventually grant a certain amount of purses for poor pupils.

The total expenditure of the communes for 1895–96 was about $12,150,000 of which almost a third was for salaries paid to teachers. Of that amount $880,000 constituted a voluntary contribution by the communes for the aforesaid purposes, thus affording an average of $1.05 for each pupil attending day (primary and normal) schools, and $1.01 for those attending night or Sunday schools or kindergartens. Considering the total population of Italy, this expenditure amounted to 39 cents per inhabitant.

The 69 provinces contributed to the same end the amount of $150,000 only.

The State contribution for primary and normal education for the year 1896-97 was about $1,200,000, covering particularly the expenses of the two special superior normal institutes for females of Rome and Florence, and of a number of female colleges, besides special subsidies to deaf-and-dumb institutes, to sick teachers and their widows, to special didactic publications, libraries, for the purchase of scientific instruments, etc.

THE TEACHERS' PENSION FUND.

At the end of 1896 the pension fund for the benefit of elementary teachers, their widows and orphans, amounted to $11,899,132.

The annual dues from the communes to the fund, being equal to the 5 per cent of the salaries paid and that of the teachers themselves to 4 per cent of their salaries, amounted to $497,550, while the State has contributed annually since the year 1878 to said fund the sum of $50,000. This contribution is expected, however, to come to an end in 1900.

The full pension is due to a teacher after twenty-five years of regular teaching, on the basis of the average of his salary, provided that the amount does not exceed the average of his salary of the last three years. In case of his death the widow and orphans are admitted to the benefit of his pension in proportion to his already acquired rights, but in no case shall the pension thus revertible to the widow and orphans exceed two-thirds of the pension enjoyed or that the teacher previously was entitled to at the time of his demise.

The number of communes obliged by law to contribute to the teachers' pension fund in 1896 was 8,133. The kindergartens and schools subject by law to contribute to the pension fund numbered 40,462, besides 404 other special institutions.

The number of teachers likewise compelled by law to contribute to it was 39,708 in primary schools and 462 in kindergartens and other educational institutions.

ILLITERACY.

The grand total of illiterates between 6 and 20 years of age amounted in 1888 to 61.94 per cent (64.09 between 6 and 12 and 54.30 between 6 and 20), proportionally divided as follows:

Northern Italy	40.86
Central Italy	64.61
Southern Italy	83.52
Insular Italy	80.92

The progress thus realized in public elementary instruction in Italy between 1881 and 1896 is shown by the present percentage of 55.24 of illiterates (63.04 male and 47.43 female) or a decrease of 6.70 per cent in the number of illiterates in fifteen years.

II. Report for 1895–96 of Prof. F. Torraca, Director of Primary and Normal Instruction, to the Minister of Public Education.

Says the director: "To courageously face the reality, however sad and painful it may be, means spurring the people to the realization of much different ideals." He starts by stating that the 227 scholastic inspectors of Italy, whose annual reports are gathered by him through the 69 provincial "provveditori," upon whose authority the inspectors directly depend, did not perhaps perform their inspection according to the expectation of the department. "When," writes Professor Torraca, "once for all I decided to know the whole truth about the real condition of public, primary, and normal instruction of the country, and began to read and compare said reports, rather tardily and with difficulty obtained from our inspectors, I found that some abounded in detail, others offered only scanty and incomplete information, while the remainder were only empty rhetorical generalities." Even in the matter of statistical data "some reports offered only a small amount, and others none at all." Whenever statistics were given in sufficient quantity, he found that they were prepared on no uniform basis, either with regard to matter or method.

This criticism of the director had the real merit of spurring public opinion and determining the movement of reform, of which an account will be given further on. One of the main points of Professor Torraca's criticism is that in which he particularly reflects on the inspectors' zeal; but it must be said in their defense that the law did not yet arm public inspectors enough to successfully fight the wayward policy of many communal authorities, especially with regard to questions of hygiene, buildings, teachers' qualifications, pupils' attendance, etc.; and, furthermore, that to overcome the evils and the incompatibilities blocking the onward march of public instruction many an inspector ("whose chief duty is to indicate to the Government how to force a new life into the national system of education") made some fearless, at least, if not very methodical, expositions of the real state of things as they found it, as appears from the following quotations:

From a letter of the "provveditore" of Campobasso (southern Italy), accompanying the report of the inspector of his province: "The laws of 1878 and 1888, providing for the construction of new buildings suitable for schools and for the repair of existing ones, found the communal authorities of this province reluctant. The commune of Casa Calenda only (and there are 133 communes in the province) has built a good schoolhouse. Many of the buildings that are now in use for school purposes should be absolutely given up, hygiene, pedagogy, and morals imperiously requiring it." A special law seems to be necessary to that end, as in the rural communes "there is not a single case of decent premises that could contain fifty to seventy pupils;" and this, in certain instances, notwithstanding the good disposition of the municipalities themselves. The inspectors of Oristano (Sardinia): "In most of our communes the schools are in unhealthy hamlets, are without a ceiling or a floor," and are "badly

protected with out-of-joint windows." That of Sanremo (Liguria): "Low garrets, without air, light, space, and toilet rooms." That of Pallanza (Lombardy): "So badly built and located that no child can assuredly learn propriety or cleanliness there." That of Susa (Piedmont): "The nonclassified school buildings are in fact stables, where the noise of the animals there gathered, such as oxen, donkeys, sheep, chickens, etc., constitutes a great distraction." "I felt repugnance," says the courageous inspector, "on entering, and as the air that one breathes in them is highly vitiated, I could not endure to stay long, so that my visit did not amount to much. The municipal administration, however, holds that the pupils, being for generations used to stable schools, do not suffer by them."

Such a state of things, deplorable in itself, but which, however, seems to be an exception with the rural schools of northern Italy, assumes a more general character in the southern provinces: "In almost all rural schools in the district of Isernia there are no toilet rooms." In the district of Avellino, "seven communes excepted" out of 66, "the school buildings are small, dirty, without light or air, or even toilet closets." The same observation holds good for the districts of Alghero and Ozieri, "with only four exceptions." The inspector of the district of Calfanisetta (Sicily) writes of "schools that are real prisons, not temples of morality and teaching, where the children suffer so much that they hate to go there; where, besides, they can not find room enough," etc. The inspector of the district of Clusone reports that "the atmosphere of the schools is so corrupt from the miasma of the water-closets that they constitute practical centers of infection." In the commune of Carife "the second and third courses of male primary schools are located in the building of an old cemetery, in the rear room of which there is still a pile of bones," etc. An inspector from Sicily concludes, after the darkest picture of his own district, and almost in despair, that "veritas odium parit."

The main cause for this incredible state of things, affecting the rural districts, is given by Professor Torraca in these words: "It appears that the buildings rented for school purposes, in most cases, are not what they ought to be, because they are selected by either incompetent or interested people. Inspectors report that in a number of communes the school buildings are selected, however unfit and at a rental of two or three times their value, simply because the owners of them are aldermen." He then adds: "Whenever the department of public instruction saw its way clear to act, the communes have duly been recalled to the fulfillment of their duty." However, after so detailed and open an exposure of facts he finds grounds to praise many communes of northern Italy and Tuscany, and a few of southern Italy for the progress realized in school buildings, which, as one naturally anticipates, are generally up to expectation in the largest cities of Italy. The logical conclusion of the director's report on the subject is that, "in order to eradicate such evils, the inspector ought to be given full authority with regard to the choice of school buildings; enough power, in fact, to cancel if necessary the rental contracts made by the commune, even when they have the approval of the local board of health." But, as is urged by many an inspector, "the only radical measure that would bring a remedy in a short time to the school-buildings evil, would be a law compelling every commune to build outright a school at its own expense or with the help of the subsidies and loans for that purpose granted by the Government to

the communes in pursuance of the above-quoted laws of 1878 and 1888."

School furniture.—Inspectors report in a general way that the furniture has been found good in 16,129 schools, deficient in 20,403 and bad in 13,497. To quote the statistics furnished by the inspector of Noto, it appears that in 1895–96 in his district, "6,952 children being under legal obligation to attend school, 4,371 of them were actually inscribed on the school rolls, but only 3,943 could be accommodated." Other inspectors complain also of the quality of the accommodations: "Contrary to hygiene and discipline," says the inspector of Gallipoli, although "the school furniture prescribed by the scholastic by-laws, aiming only at the strictly necessary, should come within the means of every commune." It is reported, however, that in many instances "no regular inventory of the scholastic furniture is ever made, and that consequently there is no regular delivery made to the teachers;" so that "they do not take proper care of it, with the result that even new furniture, bought with the subsidies of the Government, becomes in a few years useless.

The apparatus and material used in instruction, "of which many communal officials fail even to appreciate the usefulness," have been found to be in very much the same condition as the furniture, viz, good in 15,790 schools, insufficient in 19,560, and less than that in 16,679; so that, observes the much dissatisfied director, "from the land where the orange tree is in blossom our thoughts turn with melancholy to the northern countries of Europe, where the schools have benches rationally made; where the teacher's chair is respected; the cabinets for collection of objects plentiful; the library of a good size; the wall maps and the models for manual training efficient; where there is to to be found a musical instrument to accompany the singing of moral songs, of psalms, or of patriotic hymns; * * * because in those countries not only the Government or the municipal authorities look out for the schools, but also the family itself."

However there has been some progress realized on this point, as well as toward the organization and circulation among the people of scholastic and popular libraries.

As to the important question regarding the heating and cleaning of the schools, there are still very many complaints, especially on account of unhealthy stoves, the lack of proper water, and cleanliness of the halls and of the pupils themselves. At Fondri, Itri, and in other communes, reports the inspector of Gaeta, "I found the pupils to be dirty in their persons and wearing dirty clothing; the heads of many of them being covered with sores that infected the atmosphere, so that I had to order them out of the schools, although the official of the local board of health assumed that they were not contagious." These evils are due in part to the scarcity of school janitors, and to the lack of authority and energy of some teachers.

The second part of Professor Torraca's report bears on the following important subjects: The teachers and their teaching in general, the national language, arithmetic, history, geography, rights and duties of a citizen, penmanship, gymnastics, drawing, singing, female education, elements of agriculture, manual training for males, etc. He states that almost all the inspectors report to him that, as a whole, the teachers' education, both moral and intellectual, which is the most important point, is generally reputed to be good; that they have

dignity and that they conscientiously perform their duties; so that during the year 1895–96 the scholastic authorities very seldom have had occasion to summon, to reprimand, or to punish them.

In the year 1895–96, out of 50,048 teachers, 18,773 were considered very good and efficient, 23,995 tolerably good, while 7,280 were teachers whose education and training proved to be below the requirements. Female teachers are in general more appreciated than males and their instruction more efficient. Some inspectors charged teachers with indolence, with discouragement, with giving up the studies that would enable them to keep in touch with progress. Especially was this the case in the rural districts, where many also are blamed for taking up after school hours other occupations, sometimes very inconsistent with their purely moral mission. "But," observes one inspector, "how could the teacher and his family live, if he has one, with the meager pittance, for instance, of 35 cents per day, that the rural teacher of the third course earns?" "In fact," says another inspector, "the State contribution is not such as the straightened circumstances of the teachers require, since, for the 69 provinces, this year the State only contributed the pitiful amount of $342,113, distributed among 6,741 communes, to help rural teachers out of their distress."

As to the efficiency of the teaching itself, as imparted throughout the country in rural districts, the director could not gather sufficient information from the inspectors' reports to form a definite opinion; but, while one may say that it is still lacking, and probably very much so from the point of view of new didactic methods and conceptions of what teaching should be to prove effectual, yet some progress has been realized of late, and besides the subject is being taken up with increasing attention and intelligence every day, and for this purpose all inspectors urge "the organization of local school committees to serve as a permanent and active bond between the schools and themselves and as a constant spur for the teacher to perform his duty, keeping in touch with progress and new methods."

Now, it may be permitted to the writer of this sketch to say, after this rapid survey of Professor Torraca's report, that by his candid and dispassionate statements, although with a tinge of pessimism, of the real condition of primary and normal instruction in Italy on the basis of the most reliable information he could secure, he has powerfully contributed to a reform of education in Italy and rendered the cause of public education a signal service; in fact, the greatest service that an official in his high capacity could render by proving to be "Amicus Plato, sed magis veritas."

Hon. G. L. Pecile, in a speech before the Italian Senate, in July, 1897, summed up the whole situation in these words: "Out of 8,253 communes, only 1,800 have an elementary superior course, 6,453 having only the first course of three classes. Of the 2,166,497 registered pupils, only 412,000 reach the third year; that is, one-fifth, and of these only 176,351 (according to the statistics for 1893–94), or 8 per cent, graduate." It appears natural, therefore, that from the category of nongraduates come almost all the 40 per cent of illiterates at the time of their enlistment in the army, or 20 per cent in northern Italy, and 57 up to 63 per cent in the islands of Sardinia and Sicily; and, as delinquency and illiteracy go together, this last island has the record for both in Italy.

III. The Reform and the Reformer.

[Extracts and survey of the report of Prof. G. Castelli, director chief of division of the department of public instruction for the year 1898.]

Nothing could give a clearer and more exact idea of the progress of the reform going on in the system of public education in Italy the last two years under the guidance of Dr. Guido Baccelli than the recent report of Professor Castelli on the most important matters already added to the program of primary and normal schools, viz, agricultural instruction and manual training, which are destined to dispose and keep the Italian people in a closer and more effective connection with the schools than before.

Professor Castelli, one of the foremost and most intellectual leaders in the field of public education, and a staunch supporter of agricultural instruction and manual training since the beginning of the agitation for their adoption, in his report states that the present Minister Guido Baccelli's efforts since 1881 toward the reform of the administration, discipline, and teaching in the public schools have awakened emulation for new attainment, "both with the family, the teachers, the pupils, and municipal authorities." "A happy change this in public opinion; the teachers being now more appreciated and cared for than in the past, and all discrimination having ceased to exist between them and the authorities, while they are animated with a greater faith in their mission." Whereupon the director announces that the school, with its course of study enlarged by the addition of practical agriculture and manual training, is no longer the traditional place where spelling, ciphering, and grammar rules were taught only with a view to preparation of the pupils for secondary instruction, at the highest, but "it has become a self-relying institution, provided with sufficient resources, and realizing the great moral ideal involved in the duties and rights of a modern State toward public education." And this, however, without assuming that everything is done; since two laws are still most necessary for the attainment of the end aimed at by the minister in these words: "To impart sufficient instruction to the masses, and to morally educate them as far as it is possible;" that is to say, (1) a law for the betterment of the condition of the schools (with regard to hygiene, discipline, attendance, etc.), and of their teachers (professional training, salary, and authority); and (2) a law regarding complementary schools for the education of youth in the three years that precede their compulsory enlistment for military service; and these laws were ready, but general questions kept the Parliament from voting them as urged and expected by Minister Baccelli this year.

As to agricultural instruction, this subject was added, in fact, to the branches taught in the normal schools some twelve years ago—elements of agriculture for male schools, and of horticulture and silk-worm culture for the female ones—but this verbal teaching of the elements never amounted to much indeed, because not supported by their practical application.

Dr. Baccelli sought the means of attaining such a desirable end; and for that purpose he addressed a warm and patriotic appeal in July, 1898, to the provincial authorities, to the communes, to all charitable and benevolent organizations and corporations, as well as to merchants and the rich at large, urging that "each and every rural

school be freely provided with a farming ground ('campicello') in which the modest rural teacher, personally benefited by the proceeds of its crops, might practically teach the land-tiller's son intelligent farming together with the elementary branches." "From that very farming ground," concluded the learned and noble minister, "upward through secondary instruction and special courses, let the Virgilian doctrine of the blessings of agriculture raise the people to the height of the Atheneum, where the enlightenment of science and the experimental synthesis will be associated in a lofty work of justice and national redemption."

Numberless expressions of approval from every class of citizens, inspired by a patriotic and a social idea, answered this public call for a piece of land for the village school, "thus," writes Professor Castelli, "attesting that, without distinction of class or political lines, when duly consulted, the Italian nation can show how passionately it has education at heart; no less in fact than order, peace, dignity, and the integrity itself of the country."

During the exposition of Turin in 1898 the National Congress of Farmers, and many other congresses there held, took up for immediate consideration Dr. Baccelli's circular, and passed in effect the following resolutions on the subject: That the department of public instruction should develop the teaching of agricultural science in national schools (63 schools existed in 1896 in which agriculture was regularly taught, while the next year none were to be without it), and in all secondary technical schools there should be established sections of agriculture and land surveying; that also chairs of agriculture be established in all those universities having already the two faculties of mathematics and physical sciences; that complementary courses to the primary degree and manual training be instituted in all the rural communes having none; that in order to multiply the number of agricultural schools the Government should inaugurate winter itinerant courses for adult peasantry.

At the end of 1897 the elements of agriculture were theoretically taught in 471 primary schools, but as they were considered by the inspector as very inefficient and far from the mark, especially on account of the teachers' shortcomings, Dr. Baccelli, taking advantage of the meeting of 117 teachers, delegates at the opening of the Tenth National Course of Manual Training at Ripatransone (of which mention will be made further on), ordered a series of theoretical practical lectures on agriculture to be delivered then and there by Prof. A. Rossi, the rector of the practical school of agriculture at Ascoli Piceno, authorizing in the meantime the "proveditore" of that province to deliver certificates of attendance to all the teachers who should have attended that entire course of lectures.

This example was immediately taken up by other provinces, where lectures on agriculture were delivered by the most capable professors belonging to the universities, superior schools of agriculture, technical institutes, practical schools, and itinerant classes of agriculture, with the aim of determining what the teachers should know in order to usefully teach agriculture in their school. The result was that 184 chairs of lectures on agriculture were established, securing the attendance of about 12,000 teachers, "a fact, this," says Professor Castelli, "worthy of the highest consideration, as it represents an imposing spontaneous contribution to that work in all the sections of the country by the most learned and experienced men." This was a

new start indeed for the Latin nation, so habituated to the principle of centralization inherited from the Roman world, therefore so dependent at times for everything upon the central authority, "and one," argues Professor Castelli in his patriotic enthusiasm, "showing that self-government is not an endowment of the Anglo-Saxon alone." Now, to offer proofs of this assertion, that "there are in Italy latent forces making self-help a possibility with the masses," he adds: "Very deserving citizens began teaching silkworm culture in many schools, leaving the profit of the sale of cocoons to pupils and teachers; others took up rational bee farming, practical cheese making, aquiculture, rural hygiene, and zoology." Many a society for the development of industrial manufacturing stood ready to subsidize the schools for the training of children in small household industries. Some offered implements or fertilizers, others periodicals, technical books, didactic material, etc.

Concurring with this unprecedented outburst of individual initiative toward public education, the department opened a competition for a practical treatise on agriculture for the normal schools, granting a prize of $1,500 for the best ones. "While it is still impossible," says the report, "owing to the continued progress of this movement, to offer positive statistics of the number of 'school fields' now being cultivated, we know already of 2,257 fields, the size of which varies from that of a 'small orchard' to that of a real important 'property,' and of 8,000 rural schools where agricultural instruction was given in 1898; so that Italy has practically covered in a few months the ground that it took France many years to cover."

IV. Il Lavoro Educativo (Manual Training).

As in preceding sketches of education in Italy this important subject has only been hinted at, I think it useful to state here more at length, and on the authority of the chief of the department of public instruction, how the subject has been taken into practical consideration, briefly noting the different steps toward its adoption in Italy, viz: (1) A circular (1885) of former Minister Coppino opening the door to the teaching of positive pedagogy by recommending the addition of a kindergarten course to the courses for normal preparation; the study of drawing in two superior courses; the transformation of the elementary courses in the large cities into popular schools with manual training. (2) A report of former Minister Villari (1898), now president of the National Society Dante Alighieri, on the schools for manual and professional training visited by him in Switzerland, Germany, Denmark, Sweden, Norway, and Belgium. (3) The reports of Professors Zaglia, Agostini, Cavazzuti, and Castelli on the special courses at Ripatransone. (4) A circular embodying the programme for elementary and normal schools in 1894. (5) The debates and resolutions of several congresses on pedagogy and manual training (1897); but above all, (6) the famous ringing circular of Dr. Baccelli (July, 1898), reasserting the Roman motto, "Non scholæ sed vitæ discere," that raised at last the problem of agricultural and manual training in Italy out of the field of unfruitful discussion, closely followed by a circular thus determining the sphere of action for primary instruction henceforth: "For each rural school a field (campicello); for each urban school the experimental industrial shop; and for females training in female occupations and domestic economy." A school

with a field and shop, to bring a new activity into primary instruction; a popular school, that in time will make up "in tenui labor" for the didactic and pedagogical inadequacy of the present Italian primary instruction, due, above all, to the brevity of the period of compulsory attendance at school.

The history of the rapid and successful pedagogical crusade in Italy for manual and professional training is well worth being shortly recounted here, owing to the very important results already realized.

On former Minister Coppino's initiative, a committee of 14 distinguished Italian teachers was sent (1897) to Nääs to study practically manual training as a means of education in "the free alphabet of industrial arts" in the seminary of the illustrious Swedish philanthropist, August Abrahamson. On their return, after a visit to German, Danish, and Swiss training schools, a system of manual training was devised especially for Italian pupils, based on the "marvelous unity of pedagogical intuitions." Prof. Emidio Consorti, of Ripatransone, has been recognized by all as the pioneer and the intellectual leader of the new scholastic innovation, in promoting which he is considered a master "for practical common sense, firmness of purpose, and vigor of action." The fundamental principles of his pedagogical system may be summed up as follows: The natural activity of the child; his spontaneous impulse to work; his freedom of action; the pleasure of observation; the sentiment of individuality.

The characteristics of his experimental methods are these: Rationality, science, naturalness, and modernity; having for elements: Observation, experimentation, induction, and deduction, to be didactically developed as follows:

To show the child the object, with a brief description of the same.

To make the analysis and the sketch of the object.

To proceeed to its synthesis and complete its design upon a plane and in relief.

The school of Ripatransone, owing to the merits of Professor Consorti, its founder, has recently been raised by Dr. Baccelli to the rank of State normal institution, and has already prepared 2,500 teachers for manual and professional teaching in primary and normal schools through an annual course extending over fifty days, to which, besides teachers of both sexes of kindergartens and of primary and normal schools, are admitted, as well school directors and district inspectors.

Its programmes include: Elements of agriculture; domestic economy; female industries, and work in paper, pasteboard, straw, willow ware, clay, wire, tin, cloth, wood, etc.; household employments and small rural industries; design.

As an appropriate conclusion to this chapter, and with the object of illustrating the spirit of reform now spreading in the educational world of Italy with regard to the philosophy of pedagogy, I think it pertinent to quote from a recent study by Miss Alessandrina Garibaldi, one of the worthiest pupils of Professor Consorti, a few characteristic observations on manual training:

Work is a social law. In its triumph over nature, humanity owes everything to work.

Work may eventually spur, convince, persuade, but its practice alone can impart to man those energies and aptitudes and habits that render work at once necessary and pleasant, as well as useful, active, and skillful.

The child is happy only when he plays; and when he plays so that he can exert all his energies and activities, muscles and intelligence, senses, heart, and will power, he really works. Surely, everything that comes to his hand—paper, clay,

wood, stone, iron, etc.—he inexorably modifies, changes, breaks, destroys; but through that cutting, shaping, constructing, or copying objects and forms, he finds out and creates; thus unconsciously revealing and actually practicing the universal law of analysis and synthesis.

V. Secondary Education.

"Ginnasii" and "licei" (classic secondary schools).

Pending the Parliamentary debates on the reform, Hon. Senise, in his somewhat pessimistic but splendid survey of the whole educational field of Italy, sarcastically alluded to the "plebeians" invading the secondary schools of the country, especially the "licei," to be turned by these, an indigestible mass of students, into the universities and superior and special institutes, which in turn they overcrowd, and of which they are the actual curse; urging for such a national evil a remedy, and a radical one.

Since then something has already been undertaken in that direction by the introduction of a reformed curriculum involving a reduction of hours in purely scientific matters and in the Greek language, and introducing in their stead mathematics and one modern language. This experiment has been undertaken in six "licei": at Rome, Milan, Turin, Florence, Venice, and Palermo.

Thus, the ensemble of measures and new conceptions for the reform of primary and normal and secondary technical and classic instruction is expected to rationally transform in a few years public education in Italy, and to prepare for university and superior special instruction qualitatively better elements in such a degree only as the country has use for; and as to the quantity, more rationally distributed with regard to an agricultural training's increase.

The abnormality of the educational system of instruction in Italy is clearly illustrated by statistics showing the existing proportions between the different types of schools and their object, as follows (for 1898):

	Number of students.
Universities	23,285
Superior and special institutes	3,166
Industrial and commercial schools	30,398
	56,849

There were only 1,137 students in practical and 112 in the superior schools of agriculture.

The reform is expected to correct such disproportion in favor of agriculture, "one of the most important features of the new educational policy," says Prof. G. Gorrini in his biography of Dr. Baccelli, "as the increase in the study of agrarian matters and laws will restore to healthy conditions the masses of the urban populations by directing them to the conquest of the uncultivated national lands, still unredeemed from ignorance and the latifundia," the curse of the Roman Empire and of modern Italy still.

Statistics of "ginnasii" (5 years course) and "licei" (3 years course) for 1895–96.

The Ginnasii.—In 1895–96 there were 708 ginnasii, of which 183 were State institutions, 83 equaled in rank the State ones (57 supported by the communes, 24 by bequests, 1 by the clergy, and 1 by

donations), and 442 did not equal the State ones (1 supported by a province, 31 by communes, 24 by bequests, 257 by religious corporations, and 129 by donations). The number of ginnasii, compared to those of 1893–94, has been augmented by 3 in the Venice Province, 3 in Sicily, 3 in Sardinia, 2 in Liguria, 1 in Piedmont, 1 in the Campania, and has been decreased by 2 in the Province of Umbria, 2 in Calabria, 1 in Abruzzi, 1 in the Puglie, and 1 in the Basilicata, making a net gain of 6.

Their total number of students was 54,137 in 1893–94, and 55,515 in 1895–96, or 1,378 more. In 1893–94 the number of girl pupils registered for classic education was 732, and 912 in 1895–96, an increase of 180.

Examinations for promotion.—In the first four courses of the ginnasii 46,542 pupils were present at the end of 1895–96, of whom 6,217 were promoted, without examination, for merit, and 3,147 passed their examination for admission to a superior class; 8,773 were refused promotion, and 1,405 did not attend examination.

In 1893–94, in the first four gymnasial courses, of each 100 pupils 16 were promoted without examination, 63 were promoted after examination, 17 were refused promotion, and 4 did not take the examination. The corresponding proportions for 1895–96 are as follows: 13, 65, 19, 3.

The examination for admission to the licei was given for 1895–96 in 280 ginnasii, and the number of those promoted amounted to 6,686 (including 130 girls) out of 9,668 candidates, as against 9,221 candidates and 6,268 promoted in 1893–94.

The professors in the ginnasii for 1895–96 numbered 4,739, not including 333 directors without a chair and 328 gymnastic teachers. Of the given total, however, 847 held courses also in another institute. In 1893–94 there were 4,468 professors, of whom 759 taught as well in another institute, besides 258 directors and 294 gymnastic teachers.

The licei.—During 1895–96 there were open 332 licei (116 State institutions, 29 ranked as equal to State ones, and 187 not thus ranked). Of these last, 3 were supported by the commune, 3 by bequests, 136 by religious corporations, and 45 by private donations. The total number was 21 greater than in 1893–94.

The following classification may be made of the licei and the students registered in them for 1893–94 and 1895–96:

Licei supported by—	1893–94.		1895–96.	
	Licei.	Students.	Licei.	Students.
The State	113	10,292	116	10,945
Communes, ranked	18	1,100	19	1,195
Bequests, ranked	9	447	10	587
Communes, not ranked	3	49	3	82
Bequests, not ranked	4	103	3	67
Religious corporations, not ranked	117	3,063	136	3,461
Private funds, not ranked	47	1,360	45	1,349
	311	16,414	332	17,689

The table shows an increase of 1,275 students in the two years; among the students in 1895–96 there were 216 girls, as against only 111 in 1893–94.

Examination for promotion from the first two of the three lyceal courses to the third and last (giving number of students):

	1893–94.	1895–96.
Promoted without examination	1,581	1,533
Promoted after examination	7,373	7,689
Not promoted	1,817	2,113
Not examined	482	616

Per cent promoted in 1894, 79.57; per cent promoted in 1896, 77.16; or 13 per cent promoted without examination, 64 per cent after examination, 18 per cent not promoted, and 5 per cent not examined.

Examination at the close of the third course for admission to the University or to a superior institute, for 1895–96: Students examined, 6,600, of whom 4,252 passed. In 1893–94 there were 5,933 examined, of whom 3,788 passed.

Per cent of students examined, promoted to the university or to a superior institute, from each class of licei: Percentage from State licei, 85.68; pareggiate or ranked as State, 72.87. Not ranked: Communal, 29.31; endowed, 60.00; corporations, 78.87; private, 44.14. Among those promoted for 1896 there were 44 girl students.

Teaching force.

Year.	Licei.	Professors.	Directors.	Gymnastic teachers.
1893–94	311	1,806	141	135
1895–96	332	1,852	167	156

The number of students seeking admission to and instruction in licei is such that a number of "licei annexes" have sprung into existence in late years.

SECONDARY INSTRUCTION: AGRICULTURAL, COMMERCIAL, INDUSTRIAL, AND NAUTICAL.

When one realizes that for success in life, besides the ethical object of instruction, to wit, the training of the intellect and of the heart, there must immediately follow the consideration of the usefulness of some practical training, he has grasped the full purport of secondary instruction, in that department especially in which it prepares youth for agricultural, industrial, and commercial pursuits. It takes, indeed, a man of good ethical and practical education to make of commerce not only a mere matter of business, but a congenial pursuit leading to the welfare of a given country, in the expectation that this twofold moral and practical training may one day blend the natural law of "love and hunger," of which wrote the immortal Goethe, into a by-law of fraternity of all nations. I think that in the modern effort of bringing nations into closer contact, the Anglo-Saxon race, the most powerful one to-day, owing to the spirit of reform of the Middle Ages that revolutionized her life, deserves the greatest part of the merit. Because, if it is true that the Italian genius of Columbus, Polo, Amerigo, Cabot, etc., leading humanity across mysterious and dreaded seas, marked the highest triumph of the Latin race, and

that Latins and Anglo-Saxons alike followed in the wake of the discoverers to conquer and populate this continent, hoisting their flag here and there, the first result was that there, where the Anglo-Saxon settled, a new civilization, symbolized by moral, civil, and religious liberty and equity among men, spread over land and sea.

No wonder, therefore, that to-day, a consequence of yesterday, the Anglo-Saxon commercial schools, based on the most improved pedagogical methods, know how to efficiently train youth for the world's competitive arena of trade and commerce.

Italian secondary instruction has made of late a marked progress; but when its programmes are compared with those of other nations, they still appear to be far below the training of the German and English or American schools. Nothing short of the full carrying out of the reform now going on in this branch of education in Italy will, eventually, arm the Italians in a fitting manner to stand a chance in the markets of the world.

Hon. G. Baccelli, in planning his reform for secondary instruction, has distinguished three types of technical schools, to wit, the agricultural the industrial, and the commercial, to correspond to the local wants of the different sections of Italy, the programme for the first type of school being farming and natural sciences; for the second, practical and theoretic industrial technology, experiments in mechanics, and the like; for the third, a general education, equipping youth especially for home business, but as well for international commercial affairs, adding to it that ethical training, by which "blighting egotism," so easily engendered by the study of commercial branches, shall not prevent a young merchant from becoming a good and a refined citizen.

It is understood, however, remarks Professor Chiarini, director of secondary instruction, in his quite recent report, that the reform bearing on the three described types of schools for secondary instruction preserves to them the character of "schools of general culture," therefore they are not to be confused with the "practical schools of agriculture," the "schools of application" or "arti e mestieri," the "special schools of commerce," and the "industrial schools" now under the direction of the department of agriculture and commerce.

At the beginning of this year 19 state secondary schools had already been re-formed to the new type—6 agrarian, 2 industrial, and 11 commercial—and many others were in process of reformation.

That Italy, a maritime nation "par excellence," situated by nature on the sea, in a unique association with three continents, Europe, Africa, and Asia, may through its re-formed commercial educational methods gain in time a respectable rank in international commerce, will be easily conceded, owing to its marvelous faculty of assimilating the perfected methods and sciences of other nations; and also to the recent awakening of her maritime genius, that once, before the growth of the English genius for commercial conquest, had made of the Republics of Venice, Genoa, Pisa, and Amalfi, for centuries, the queens of the sea.

STATISTICS OF TECHNICAL SCHOOLS OF GENERAL CULTURE AND COLLEGES (CONVITTI).

The technical school has a three-years' course, leading to the technical superior institute of a two-years' course. In 1895–96 there were 381 technical schools, with a registration of 36,654 pupils, reduced at

the end of the year to 33,351, as against 32,775 for 1893–94, as follows:

Class of technical school.	Number of schools.	Students.	
		1893–94.	1895–96.
State	181	20,430	21,591
Provincial, ranked	2	257	187
Communal, ranked	80	7,601	7,715
Endowed, ranked	9	495	515
Communal, not ranked	35	1,451	1,139
Endowed, not ranked	12	555	578
Religious corporation, not ranked	2	96	86
Private, not ranked	65	1,890	1,540
	387	32,775	33,351
Free attendance		186	390
Total students		32,961	33,741

Girl students for 1893–94, 1,963; for 1895–96, 2,818.

Examination for promotion from the first to the second class.—In 1895-96 there were 25,533 students examined, of whom 1,131 (276 girls) were promoted without examination, 14,017 (1,404 girls) after examination, 8,661 (430 girls) were not promoted, and 1,721 (84 girls) were absent at the time of the examination.

Out of the total attendance for 1895–96 on the two first courses, 4 per cent were promoted without examination, 55 per cent after examination, 34 per cent were not promoted, and 7 per cent were not present, as against the corresponding percentages of 4, 57, 32, and 7 for 1893–94.

The results of the examination of "licenza" (1895–96), admitting to the superior technical institute (two years' course), in 286 technical schools, were as follows:

Class of school.	Examined.	Passed.	
		Number.	Per cent.
State	4,729	3,624	76.63
Ranked	2,151	1,590	73.82
Provincial, not ranked	201	128	63.68
Endowed, not ranked	101	66	65.35
Corporation, not ranked	5	3	60.00
Private, not ranked	583	292	50.08
Family instruction	671	305	45.45
Total	8,444	6,608	

Passed examination	470
Passed after first examination	2,813
Passed fall reexamination	2,725

The total number promoted for 1895–96 was 6,008 (484 girls), as against 5,941 for 1893–94.

Teaching force.

Year.	Professors.	Directors.	Gymnastic teachers.
1893–94	2,825	115	276
1895–96	2,755	125	323

TECHNICAL INSTITUTES.

The following table shows the number of technical institutes and students attending them for the two years specified:

Year.	Number of institutes.	Students.	Special students.
1893–94	72	8,259	930
1895–96	74	9,144	263

Or an increase of 1,027 registered students in 1896 and a decrease of 849 special students, owing to a decision of the department of public education (1895) denying to all nonpromoted or not-admitted outside students inscription as "special" in the class to which they aspired, or to a superior one.

The attendance for 1895–96 in the 74 institutes was as follows:

Common year	3,342
Physico-mathematical section	1,581
Surveying section	1,504
Agricultural section	18
Commerce and accounts section	2,576
Industrial section	123
	9,144
Special	263

Making a total of 9,407. Included in this number were 50 girls, as against 23 for 1893–94.

At the examination for promotion to the second year 69 per cent were promoted, 20 per cent not promoted, and 3 per cent were absentees; 550 were without examination.

Examination of "licenza" in 69 institutes: Out of 2,304 pupils (including 4 girls) of the second year course, 1,543 passed, or 66.97 per cent of the candidates, as against 1,521 licensed, or 68.79 per cent, in 1893–94, as follows:

	1893–94.		1895–96.	
	Number.	Per cent.	Number.	Per cent.
Physico-mathematical section	481	67.27	441	67.25
Surveying section	393	64.85	442	65.97
Agricultural section	5	62.50	12	60.00
Commerce and accounts section	613	72.46	618	67.17
Industrial	29	80.18	30	78.95
	1,521	68.79	1,543	66.97

The lowered percentage of the "licensed" in 1895–96 is due to the participation in the examination of students prepared by private instructors or private institutes; the licensed students of State courses amounted to 83.81 per cent of the candidates.

The number of instructors in technical institutes was as follows:

Year.	Number of institutes.	Professors.	Presidi.	Professors of gymnasium.
1893–94	72	1,290	10	65
1895–96	74	1,314	10	64

NAUTICAL INSTITUTES.

In 1895–96 there were 21 nautical institutes, of which 19 were State schools, 1 communal, and 1 private, with 550 attending students, 44 special students, and 309 registered for the two years of the preparatory course.

The attendance on the various sections was as follows:

	1893–94.	1895–96.
Sea captains	45	4
Naval constructors of second class	32	5
Machinists of second class	15	4
Captains of high seas	256	157
Constructors of first class	23	14
Machinists of first class	410	306
	781	550
Preparatory course	132	309
Special	75	50

In the examination for promotion, out of 336 students attending the different sections (excepting the last year, when the examination for letters patent follows), 21 were promoted without examination, 214 after examination, 83 were not promoted, and 18 were absent; or, out of each 100 students having attended courses, 70 were promoted, 25 not promoted, and 5 were absentees.

In the examination of "licenza" in 18 institutes there were 419 candidates, of whom 285 passed, or 68 per cent, as against 461, 280, and 61 per cent in 1893–94.

Of the 285 in 1895–96, 141 passed at the first examination and 145 at the fall reexamination; 5 received letters patent of sea captains, 4 of naval constructors of second class, 7 of machinists of second class, 69 of high-seas captains, 6 of naval constructors of first class, and 194 of machinists of first class. Of the 285 naval students thus licensed, 173 belonged to State, 6 to nonranked, and 4 to private institutes, while 102 studied privately for preparation.

Number of professors in twenty-one nautical institutes: In 1893–94, professors, 181; presidi, 6; professors of gymnasium, 19. In 1895–96, professors, 183; presidi, 7; professors of gymnasium, 18.

STATISTICAL SUMMARY OF SECONDARY INSTRUCTION.

The following table shows the changes that have taken place in fifteen years (1881–1896):

Class of schools.	Year.	Number of schools.	Students registered.	Graduates (licenza).
Ginnasii	1881	701	41,124	4,820
	1896	708	59,578	6,686
Licei	1881	298	11,133	2,981
	1896	332	17,689	4,272
Technical schools	1881	383	22,120	3,233
	1896	381	36,654	6,008
Technical institutes	1881	79	6,878	1,098
	1896	74	9,943	1,543
Nautical institutes	1881	26	816	240
	1896	21	907	285

Thus it is shown that while the number of schools for secondary instruction is about the same in 1896 as in 1881, except the nautical institutes, all branches of instruction have an increased number of students, the increase being 45 per cent for the ginnasii, 67 per cent for the licei, and 67 per cent for the technical schools.

The following is a summary of the latest figures on secondary instruction, from advance sheets of the reports for 1896–97 and 1897–98:

	1897-98.		1896-97.	Pupils.	
	Number of schools.	Pupils.	Pupils.	Increase.	Decrease.
State ginnasii	183	25,551			
Ginnasii ranked as State	81	8,095			
Total	264	33,646	34,357	711	.....
State licei	116	10,675			
Licei ranked as State	29	1,744			
Total	145	12,419	12,432	.....	13
State technical schools	184	24,649			
Technical schools ranked as State	95	9,914			
Total	279	34,563	33,875	688	.....
State technical institutes	.....	10,382			
Technical institutes ranked as State	.....	1,353			
Total	.....	11,735	11,880	.....	145
Naval institutes, State	18	926			
Naval institutes, private	1	20			
Total	19	946	918	.....	28

Increase of pupils between 1896-97 and 1897-98, 1,213.

Since 1888 the statistics of the convitti have included also the institutions for the blind and the deaf and dumb, but the convitti annexed to the practical schools of agriculture and to the agricultural schools, and also the convitti attached to exclusively professional schools, are not included.

In 1895–96 there were 919 convitti for males, 50 of which were State schools, 15 provincial, 62 communal, 220 endowed, 297 supported by religious corporations, and 275 private, being an increase of 6 over 1894.

As to attendance, in 1893–94 there were 60,105 male pupils in all the convitti (86 per cent in the schools annexed to the convitto itself). In 1895–96 there were only 58,839, or a decrease of 1,266 pupils from the previous year.

In 915 out of the 919 convitti in 1895–96 there were 915 directors, of whom 557 were priests. In 255 convitti the teachers were all priests, in 240 partly priests and partly civilians, and in 100 there were no teachers besides the director. As in preceding years, "secular priests," viz, those not inscribed in any religious order, constituted the majority.

As to the annual contributions of the pupils, the following figures were gathered by the general director of statistics (915 convitti furnished in season their figures): In 120 convitti all the inmates were admitted gratuitously, in 473 on payment, and in 322 partly on payment and partly gratuitously.

CONVITTI FOR FEMALES.

In 1893–94 there were 1392 convitti for females, with 50,162 pupils, and in 1895–96 there were 1,456, with 49,367 pupils. Of these convitti, 11 were State schools, 25 provincial, 47 communal, 718 endowed, and 665 private.

The number of girls attending "special schools" of singing, music, embroidery, etc., was 4,629; normal schools, 4,620; elementary or complementary and superior schools, 40,118; total, 49,367, as against 35,543 in 1885, or an increase in ten years of 13,824 female pupils. Out of the 1,456 directors, male and female, of the female convitti, 917 were priests and 539 civilians. The instructors were divided as follows: 665 priests, 462 civilians, and 236 unclassified.

Of the female convitti, 436 were free, 592 admitted pupils on full payment, and 415 admitted part free and part on payment.

"In the female convitti," states the director of statistics, "instruction is, as a rule, given by nuns," thus making evident that in Italy the education of girls, outside of those attending State schools, is still almost exclusively in the hands of the clergy, to the extent of at least about 50,000 girls. The same thing can be said of male convitti enrolling 58,839 students.

OTHER INSTITUTIONS.

Of the 8 special schools of agriculture founded between 1879 and 1898, 5 are devoted to vine culture, 1 to olive culture and oil making, 1 to pomology and horticulture, and 1 to zootechny and cheese making.

In 1897–98 these 8 schools had 90 instructors and assistants and 410 students; in 1898–99, 496 students. There were 89 diplomas granted for 1897–98.

There are 28 practical schools of agriculture, having 112 teachers and assistants; number of students in 1897–98, 951; in 1898–99, 1,085. There were 201 diplomas granted in 1897–98.

There are thus in all 36 agricultural schools, which had in 1898–99 a total of 202 teachers and 1,581 students. The 4 schools of mines had 14 teachers and 42 pupils, and issued 6 diplomas in 1897–98.

Industrial and commercial schools.

Kind of schools.	Schools.	Pupils.
Superior schools of art applied to industry	6	847
Schools of arts and trades	65	14,417
Schools of art applied to industry	105	11,256
Special schools for males	12	1,004
Professional schools for females	14	4,998
Schools of design and plastic art	174	12,256
Total	376	44,778

These last schools are located in the 69 provinces.

There are also 26 academies and institutes of the fine arts, of which 13 are national and 13 private. These had in 1897–98 230 teachers and 3,886 pupils. The Institute of Fine Arts, at Florence, dates from 1350, the Academy of Carrara from 1769, the Academy of Milan from 1776, the Institute of Modena from 1786, and the Institute of Parma from 1756. The others have been established during the present century.

Italy has 6 national institutes and conservatories of music, which had 145 teachers and 875 pupils in 1897–98. Of the pupils, 555 were males and 320 females. The College of Music, at Naples, the oldest of them, dates from 1806.

There are also in Italy a great number of private institutes and conservatories of music; among these 5 musical lyceums and 40 private or municipal conservatories and musical institutes attain to the standard of the national institutions.

Normal schools of choral singing are attached to the conservatories of Naples and Parma. Their two years' courses embrace, beside the theory and practice and the art of singing, elementary harmony and practice on the keys of an instrument; also anatomy, physiology, hygiene, and their applications to singing.

There are in Italy 11 military institutes and superior schools. The Military Academy of Turin, dating from 1669, teaches the art of war, the use of artillery, engineering, and military sanitation. There is also a normal school of infantry and another of cavalry. In 1897–98 the 11 institutes had 299 instructors and 1,616 pupils, and 988 pupils were promoted at the end of their courses of study.

The Naval Academy, at Leghorn, founded in 1881, and the School of Pupil Machinists, at Venice, founded in 1862, taken together had 79 instructors and 301 students, of whom 116 were promoted.

Of the 32 State libraries the largest is the national library at Naples. This and two others contain more than 100,000 volumes each. The total number of books and manuscripts in 1897–98 was 1,690,825, of which 12,711 were manuscripts. The number of readers was 1,294,869. One library dates from the sixteenth century, 3 from the seventeenth, 7 from the eighteenth, and 2 are of this century.

The libraries of Italy may be grouped into the following 11 classes:

	No. of libraries.		No. of libraries.
1. National libraries:		7. Libraries of academies, scientific institutes, and chambers of commerce	172
Autonomous 17		8. Libraries of private or moral bodies, foundations, mutual benefit societies, reading cabinets open to the public	478
University 15		9. Religious seminary libraries	175
National, properly so called 12		10. Libraries of hospitals, congregations, and benevolent societies	26
	44	11. Private (most important ones)	40
2. Libraries of superior institutes	9		
3. Provincial and communal libraries	418	Grand total	1,831
4. Primary and secondary school libraries	378		
5. Libraries of military institutes and academies	45		
6. Archives and departmental Government libraries	46		

VI. Statistics of Special Superior Instruction.

The following list gives the names and locations of the 11 superior special schools, with the dates of their foundation:

Bari: Superior School of Commerce, 1886.
Florence: School of Social Science, 1875.
Florence: Superior Institute of Work for Women, 1882.
Genoa: Superior School of Commerce, 1884.
Genoa: Superior Naval School, 1870.
Milan: Superior School of Agriculture, 1870.
Portici: Superior School of Agriculture, 1872.
Rome: Superior Institute of Work for Women, 1882.
Turin: Museum of Italian Industry, 1862.
Vallombroso: Institute of Forestry, 1869.
Venice: Superior School of Commerce, 1868.

These schools had, in 1895–96, 137 professors, 748 students, 65 auditors, and granted 97 diplomas. The following courses are taught in them, among others: Social sciences, jurisprudence, courses for public notaries (who in Italy correspond to public registers and recorders), consular courses, superior courses of commerce, of normal economy, of statistics, of public law for accountants and computers, of foreign languages, of chemical and mechanical industries, of ornamentation, of electrotechnic science for civil engineers, of customs and tariffs, of naval mechanics and hydrography, of agrarian sciences, and of forestry.

VII. Superior Instruction—Universities.

Superior instruction in Italy is given in 17 State universities and 4 independent ones, twenty-one in all.

The State universities are located at Turin, Pavia, Padua, and Genoa, in northern Italy; Bologna, Pisa, Rome, Modena, Parma, Siena, and Macerata, in central Italy; Naples, in southern Italy; Palermo and Catania, in Sicily, and Cagliari and Sassari, in Sardinia.

The 4 independent universities are located in central Italy at Camerino, Ferrara, Perugia, and Urbino.

In southern Italy there are also university courses attached to the licei of Aquila and Bari, as well as at Catanzaro, in Sicily. There are besides in Italy 13 superior institutes, viz: Four autonomous schools of applied engineering, at Bologna, Naples, Rome, and Turin; 1 superior technical institute, at Milan; 3 superior schools of veterinary medicine, at Milan, Naples, and Turin; 1 institute for superior studies, at Florence; 1 scientific and literary academy, at Milan; 1 superior normal school, at Pisa, and 2 superior normal female institutes, at Florence and Rome.

There are, besides the above, 2 schools of applied engineering connected with the universities of Padua and Palermo, 3 more connected with the universities of Genoa, Pavia, and Pisa, with one single course, and 4 schools of veterinary medicine connected with the universities of Bologna, Modena, Parma, and Pisa.

All of the above-mentioned institutes are under the direction of the department of public education. A list will be given farther on of other superior schools controlled by other departments, such as special superior schools of agriculture, military and naval colleges and academies, and superior schools of antiquities, cartography, oriental languages, art, singing, music, etc.

The students registered in the 21 Italian universities and the 3 university courses numbered 21,813, besides 346 free students. There were included in this total 132 female students.[1]

[1] The young women students were divided among the different faculties as follows:

Jurisprudence	4
Medicine and surgery	18
Mathematics, physics, and natural sciences	30
Philosophy and letters	72
Pharmacy	8
Total	132

The division of students by faculties was as follows:

	1895–96.	1896–97.
Jurisprudence	6,096	6,376
Medicine and surgery	6,516	6,634
Mathematics, physics, and natural sciences	2,155	2,595
Philosophy and letters	1,355	1,357
Solicitors and notaries public	676	656
Political, administrative, and consular courses[1]	8	----------
School of pharmacy for the "laurea"	256	278
School of pharmacy for the diploma of practice	2,352	2,384
School of veterinary medicine	299	598
School of obstetrics	1,580	1,332
School of applied engineering	352	857
School of agricultural sciences	168	----------
Free students	345	----------
Grand total	22,158	[2]23,285

[1] Nineteen students for these subjects, besides following the jurisprudence courses.
[2] Showing an increase in one year alone of 1,127 students in Italian universities, besides an increase of 1,498 in thirteen superior institutes, making a total increase in superior instruction between 1896 and 1898 of 2,625 students—a cause this of the reform in this branch of public education, as will be shown farther on, since, according to the latest statistics quoted by Hon. Senise in the parliamentary debates on the reform referred to, there are turned out 1,200 laureates in excess of the national want every year.

The results of the examination for the "laurea" and the diploma of practice in 1895–96 were as follows:

In the 17 State universities	3,972
In the 4 independent universities	116
In the 3 university courses attached to Licei	54
In the 13 superior institutes	594
Total	4,736

Out of this total 4,557 secured, according to the use, one of the three degrees of doctor's "laurea," diploma, or simple "certificate" of admission to practice.

Eighteen "laurea" have been obtained by female students, and 58 of them secured also the diploma of superior magisterium.

Students and courses in the superior institutes, 1895–96.

	Students.
Bologna	114
3 years' course for civil engineers; 3 years' course for architects.	
Milan	432
2 years' course, preparatory; 3 years' course for civil engineers; 3 years' course for industrial engineers; 3 years' course for architects; 4 years' course in normal natural sciences; 4 years' course in physics; 4 years' course in chemistry.	
Naples	237
3 years' course for civil engineers; 3 years' course for architects.	
Rome	172
3 years' course for civil engineers; 3 years' course for architects; 2 years' course in scientific architecture for students of fine arts schools.	
Turin	381
3 years' course for civil engineers; 3 years' course for industrial engineers; 3 years' course for architects.	
Milan	102
4 years' course in veterinary medicine.	
Naples	177
4 years' course in veterinary medicine.	
Turin	88
4 years' course in veterinary medicine.	
Florence	587
4 years' course in philosophy and letters; 4 years' course in physics and natural sciences; 6 years' course in medicine and surgery; 5 years' course in chemistry and pharmacy; 4 years' course for diploma of pharmacy; 2 years' course for midwives' diplomas.	

Students and courses in the superior institutes, 1895–96—Continued.

	Students.
Milan 4 years' course in philosophy and letters; 4 years' course in modern languages.	114
Pisa 4 years' course in philosophy and philology; 4 years' course in natural and physical sciences.	39
Florence 2 years' course in foreign languages and literature; 2 years' course in history, geography, pedagogy, and sciences.	127
Rome 2 years' course in foreign languages and literature; 2 years' course in history, geography, pedagogy, and sciences.	93
Total for 1895–96	2,668
Total for 1896–97	2,935
Total for 1897–98 [1] Showing an increase in two years of about one-fifth.	3,166

[1] The division by institutes was in 1897–98 as follows:

Students in 11 superior institutes	2,589
Students in 2 female normal institutes	280
Students in 3 university "licei" courses	259
Students in 1 institute for oriental languages	38
Total	3,166

THE UNIVERSITIES.

One of the greatest problems for the next century to solve with regard to superior instruction in every civilized country, although from different points of view, is to reach a conclusion on the much-debated point of the minimum and the maximum of superior education conducive to a nation's usefulness, and that not only with a view to keeping a permanent rational balance of instruction between the classes in which society is divided, but also to avoiding causes of personal distress among the learned classes. A most dangerous element of social disturbance this the more the distressed individual is put, by his superior education, in a position to analyze the right and the wrong of life and of society.

The far-sighted remarks of C. P. Huntington on "Overeducation of the masses," deeply criticised of late because in the United States there seems to be rather a necessity for superior education than otherwise, had a broad counterpart in Europe, at Rome, pending the most important parliamentary debate that has taken place there (in 1883–84 and last year) on university and superior education; there, and as will eventually be the case everywhere else in Europe and in America, I would like to be permitted to say, since the field covered by a score of learned university orators, with a view to comparison, indeed embraced the history of superior instruction the civilized world over.

From the circumstance that in Italy also, the very land of classicism, as in France and Germany, the legislator should have been brought to consider as a necessity "the limiting of the extension of superior and university education," one may find a suitable explanation in the far-sighted purpose of "timely protecting new generations from the mania of graduation for the purpose of office-seeking only;" a destroyer—this tendency—of ambition, and a disorganizer of the energy and spirit of initiative of youth, so precious to nations, in the field of scientific farming, manufacturing, mechanics, commerce, etc. The idea of barring in part the inflow to the university seemed, of course, a sacrilegious attempt to many an Italian sabean of the "alma

mater;" yet, on the one hand, the invasion of science into every realm of life, revolutionizing old truths and methods, thereby rendering new educational conceptions and new boundaries unavoidable, and the fact, on the other hand, that within the last twenty-five years the rate of gain in graduates from the 21 Italian universities has been seven times the corresponding rate of increase of the Italian population, were such a statistical indication as could not pass without attracting the deepest attention and calling for a remedy. Hence the reform, with the final result that the legislators, whether in favor of or opposed to the bill presented by Hon. G. Baccelli in 1898, agree at least on these points as being demanded by the future welfare of their country:

First. That all allowance being made for the national hereditary tendency of the Italians to high and classic education, the modern rush for it is such as to justify the conviction that besides that noble tradition the crowding of universities and superior institutes is rather a run for the "laurea" than anything else, since this parchment and the diplomas open the doors to all public offices.

Second. On the absolute necessity of a "State examination," after the attainment by the student of the "laurea" and "diploma;" and this with the double view of keeping high the standard of superior education and of affording protection to society itself from certain consequences of a wholesale free practice of all professions, as well as preserving unimpared the many and important moral and material rights that such documents secure to their recipients.

Third. On the much debated point of free teaching by professors, "libera docenza" being considered the proper counterpart of the "libertà di studiare"—a free curriculum of studies.

THE BILL FOR THE REFORM OF SUPERIOR EDUCATION IN ITALY.

Presented to the Parliament July 4, 1898, by Hon. G. Baccelli, minister of public instruction (for the third time) of Italy.

In introducing his bill the minister compared "superior instruction to an arm of precision in the struggle of nations." Although Italian science, which has generally originated in the university, he said, has kept on of late in the admirable work of assimilation of the science of other countries, as well as in advancing capitally on its own lines, especially as regards the biological sciences, the scholastic curriculum in existence did by no means favor such a result. It handicapped it rather, owing to the rigidity of its old and new by-laws alike, and to obligatory courses—a real burden to students, sterilizing superior instruction. Hence the necessity of a new law destined to pour, through freedom of teaching and learning, a modern life into the university, as he had already advocated some fourteen years ago, and he presented such a law to-day for adoption.

The first article will give the reader the measure of the reform, viz:

The 17 State universities and 12 superior institutes, as per list annexed, are granted a juridical personality, and didactic, administrative, and disciplinary autonomy under the supervision of the State, through a representative.

The by-laws of each faculty will be obligatory upon both professors and pupils.

Article 2, as modified or completed by the Parliamentary commis-

sion, determines the rule for the direction of the university. The rector, appointed by the Crown on the nomination of the college of professors, is to represent the university, and govern it together with the academic bodies.

The representative of the State to see to it that the administration of the university's own patrimony and the scholastic one be carried on according to the law and the by-laws; and that the discipline be duly maintained.

Article 3 provides that for the nomination of "ordinary" and "extraordinary" professors, and the promotion of the latter to "ordinary," the right of nomination is vested in the faculties, the sections of superior institutes and the schools of superior instruction, the appointment being made by royal decree.

Article 5 establishes the right of the universities and any of the institutes exclusively to confer the title of "doctor" (laurea); and secures to the State the right of granting admission to practice a profession, after a State examination.

Article 8 provides that the students' contributions toward superior instruction are to be for the following: For registration, for admission to the universities, registration for special courses, examination of maturity, of laurea or diploma, and State examination. Also contribution for admission to the position of professor, ordinary or extraordinary, and for "libera docenza" of independent teachers.

This bill, owing to the Parliamentary debate that followed the uprising at Milan and other cities of Italy in May, 1898, failed to pass, but is expected to become a law in the fall session of this year (1899).

By it, according to the explanations of Hon. G. Baccelli, university independence is asserted with regard to determining the limits and the duties of each faculty; and the opportunity is offered of creating eventually new faculties, such as the proposed "superior faculty of philosophy," aiming at a closer union between the exact and the speculative sciences; a "polytechnic faculty," for the positive sciences and their applications; an "agrarian scientific faculty;" and, in a word, all those didactic experiences that the academic body of the university shall deem useful, pursuant to the progress of science, to adopt; all this being based on the principal of freedom of teaching for the professors, and of studying on a personally chosen curriculum for the students. I think it useful to quote here what—in the course of the Parliamentary debate (March 10, 1899) pending the comparison of the methods adopted by each nation regarding the problem of superior education—the Hon. De Marinis, speaking in favor of the reform, had to say of the United States:

> I shall remember the type of university in the United States, where of the 370 universities or colleges, previous to 1885 only 35 had been created by States holding some sort of control on them, without proving, however, better for that. * * * Yet that is the most advanced type of autonomy. * * *
>
> In the United States there is no department of public instruction, the United States Bureau of Education of Washington being mostly a bureau of statistics, very different from, and undoubtedly much more useful than our own scholastic bureaucracy. No department proves more useful to the branch it supervises than this central office at Washington, that does not dare to upset the functions of the university organisms, but on the contrary shows them ways and means to progress and to explicate their own initiative. There, in the United States, the political power is so cognizant of the right of superior schools to independence that in case, according to the aspiration of Washington, his successors should create a national university, this very university would still enhance the importance of the free and autonomous type of the modern atheneums of America.

The "jus erigendi academias," it was stated as a conclusion, claimed three centuries ago on one side by the church and on the other by the state in continental Europe, when the foundations of the modern States were being laid, has foundered in the subsequent transformation of modern social organisms, and has become a tradition of the past.

The school of to-day must be independent, not only and capitally of the church, but even of the State itself, which, however progressive, has no claim on and no right to the control of science.

The learned of the United States will undoubtedly hail with favor the triumph of the reform so energetically prosecuted, although scarcely yet assured for Italy, under the enlightened leadership of Hon. Guido Baccelli and his colaborers.

CHAPTER XVII.

EDUCATIONAL TRAINING FOR RAILWAY SERVICE.

By J. Shirley Eaton,
Statistician Lehigh Valley Railroad.

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GENERAL REMARKS.

Special education for railway service is an innovation both in education and in railway practice. The subject has only recently aroused the interest its importance deserves. The ideas of railway men on the subject may be said to be very diverse. To only a limited extent have they crystallized into actual practice. For this reason a treatment of the subject at this time must be largely confined to description of proposed plans rather than extended systems now in use. The bearing of any education on railway practice is not fully conceded. Experience must always be so large a part of the training of railway men that special education in schools of railway practice can at best be only supplementary to the training received in the service. It must be closely related to the work done on the railroad and the plan of organization there prevailing. The largest side of the subject is the training had in the service. This involves the study of apprenticeships that now exist, and the system of promotion and tenure, because all railway employ is in very large measure apprenticeship. This is true because it is the spirit of railway organization that all positions in the service are open to the aspiration of the humblest. The subordinate positions are in line for the higher positions and furnish the training for them. The recognition of individual merit, the spirit of professionalism that prevails in the service, the methods of coincident instruction, of disciplining and promoting men, are all essential factors in this great apprenticeship.

The special education, as well as the general education, by the railroad, of the great body of men in the service, as contrasted with the special education of individuals, is so important in its economic bearings that its methods can not be overlooked. Such methods are the library, the reading room, the evening class, the traveling library, the instruction car, etc.

Relation of Higher Instruction to Railroad Operations.

In pure instruction every other idea is subordinated to the single purpose of teaching. By outside instruction we mean that which is conducted at a different time or place from the actual experience in railroad service. In this survey we do not include those forms of instruction which are purely educational and disciplinary, but those that are intended to be of definite and direct economic value. They must be judged by how economically they accomplish their particular purpose, and how closely the purpose, which is the finished product, is related to the actual needs which it seeks to meet.

The degree of civil engineer conferred on the class of Rensselaer Polytechnic Institute that graduated in 1835 was the first C. E. degree ever conferred in any English speaking country. The classical course and the humanities were slow in yielding their monopoly of the higher education of the country. The rupture began in the recognition accorded to mathematics. Perhaps the first marked cleavage in college work was at Union College, in the mathematical work which early became a specialty at that institution. But West Point, founded in 1802, was the first institution to lay special stress on mathematics in this country. It

has been called the "nursery of the early engineers." Previous to 1862 there had been established in the United States only four important scientific institutions, namely, the Rensselaer Polytechnic, at Troy, N. Y., the Lawrence Scientific School of Harvard, the Sheffield Scientific School of Yale, and the Chandler Scientific School of Dartmouth. Only one of these was a separate institution. But with the educational land grant of 1862 there was opened a new era for scientific and technical education. Institutions rapidly increased, so that in 1870 there were twenty-one of good standing. The progress was very rapid during the seventies.

In 1867 specialization in engineering began. In that year mining engineering was made a separate department, in 1870 mechanical engineering, and in 1885 electrical engineering. Engineering education, that began with pure mathematics and natural science, developed the theory of applied mathematics and applied science. But for a long time the student learned by instruction, not by experiment and demonstration in the laboratory. When finally the laboratory was set up, his education still was purely theoretical. About 1876 the agitation for a "practical" engineer, who should unite in one person the skill of the artisan with the scientific attainments of the engineer, brought fruit in an effort to supplement the theoretical training with shop practice or technical instruction. The impetus given to the movement was said to be due to the Russian technological exhibit at the Philadelphia Centennial Exposition.

Shopwork in connection with instruction has been developed under two theories. Under one theory, which is very ably demonstrated by Dr. C. M. Woodward in his manual-training school at St. Louis, it is simply one means, with many others, of training the whole man. It is primarily disciplinary. As stated in his own words, "An exercise, whether with tools or with books, is valuable only in proportion to the demand it makes upon the mind for intelligent thoughtful work. In the school shop the stage of mechanical habit is never reached; the only habit is that of thinking." Such a training, in its relation to acquisition, is defined in the further quotation from Dr. Woodward: "We have distinctly stated that our pupils do not become skilled mechanics, nor do we teach the full details of a single trade. The tools whose theory, care, and use we teach are representative, and the processes, employed just far enough to make every step clear and experimentally understood, equally underlie a score of trades."

The other theory is that education in the shop should be for definite acquisition. Where the acquisition requires a specific skill, and the training is more especially in mechanical habit, we have what is generally called industrial education. Where the object is to familiarize the student with how a thing is done rather than specific manual skill in a particular thing, and where the approach is from the scientific side, so that all construction is connected with general principles of design, we have what is generally called technological education. The term technical education is variously used, but if it could be given any exact meaning it would imply a shop education somewhere between the industrial and the technological. There are also theories as to whether the product of the student's work in the course of instruction shall be limited to the strictly commercial article, or whether it shall be simply what is made in experimental work and which is not intended to be sold.

When the necessity of technological instruction in connection with the engineer's education was conceded there arose a tendency toward a training which in some quarters was thought to be too technical, and perhaps it may be said that there has been a reaction.

The first engineers largely worked out their own applications of pure mathematics to railroad work. Except the comparatively few who had enjoyed a higher mathematical education, the great body of the early engineers were self-trained in a sort of apprenticeship. The Franklin Institute, of Philadelphia,

which was founded in 1826, did great service in assisting engineers who had not enjoyed larger opportunities. It especially taught mechanical drawing. But the great demand for field engineers for the location and construction of railroads stimulated the teachers of engineering to offer some special work in railroad surveying and bridge design and construction.

The first great problems were of construction, requiring accurate measurements and mathematical formulæ. The civil engineer was the man of exact measurements, scientific knowledge, and mathematical formulæ. He became a necessity. From his supervision of construction he passed naturally into the positions of administration when the road was completed and came into operation. Railroad operation, at least at the outset, was more especially a problem of dealing with matter and physical things in a limited way than administration involving high order of organization and commercial detail. The engineer handled the traffic, maintained the roadway, and supervised the machinery, with the help of skilled mechanics. He was the only trained man in the service. While the volume of construction continued, as a general thing, he was the principal officer in the service.

The early railroad engineer developed his own railroad science. He brought to bear his mathematical and scientific attainments on every department. He not only built the roadway, but he made his locomotive drawings in some cases, devised the accounting, and dictated the traffic agreements. The mechanical work was largely done by rule of thumb. "The size of any part of a machine was guessed at," says Gen. Herman Haupt, one of the early chief engineers of the Pennsylvania Railroad, "and if it broke a larger part was substituted until the requisite strength had been found." But there was generally only one generation of managing engineers on a railroad. With their passing the young men who had grown up in the service and were without any special education took their places. As the mileage that had been under operation for a long time grew greater, the engineer became less potent a factor in directing railway practice throughout the country. On a few roads there was still maintained the policy of putting the direction of affairs in the hands of educated men. The only educated men for this service were the engineers. Thus on the Pennsylvania Railroad the civil engineer's profession was the avenue to promotion. But this was not so on many roads. The effect of this was to produce the "practical man," who had little use for anything to be learned in a school.

But if the uses for the civil engineer declined the field opened for the mechanical engineer. When the specialization in engineering began and the mechanical engineer was set apart, he did not come at once into railroad work. Perhaps this was due to the fact that the great body of rolling stock was not built by railroads but by private concerns. As explained by Prof. Wade Hibbard, "In the newness and vast expansion of American railroad business the general managers until recently did not feel the need of small economies, large though the aggregate might be, which the educated engineer alone could introduce." But these economies could not be long deferred. The scientifically trained mechanical engineer holds no longer a disputed place in the railroad staff. Very recently the importance and the special nature of railway mechanical work has come to be recognized, so that to-day several of our large technological institutions are offering special courses in railway mechanical engineering. Perhaps the specialization for railroad work in university instruction has been more fully realized to-day in the mechanical department than in the civil-engineering course.

That special railway education so far should be almost entirely confined to the engineering side was most natural. Specialization occurs more naturally in the field of exact science. The advantages to the railroad of higher-trained men are more immediately obvious and definite on this side of operation.

What shall be the character of the specialization in railroad subjects is yet very unsettled. It still is a matter of question in some quarters whether the professional school has taken the place of the college or is to follow the college course. The added specialization of railroad professional training has come in so recently that it has as yet little status. In some courses it begins in the third year; again it is little more than some electives in the fourth year of the course, and again it is a graduate year. The relation of the graduate year to previous work is defined in the catalogue of Sibley College:

The courses in the Graduate School of Railway Mechanical Engineering can be elected separately by seniors in other departments or by juniors who may have the proper preparation and time. It will not be possible to take the railway subjects of the graduate year without first taking the railway subjects of the senior year.

N. B.—It is particularly recommended and desired that at least one entire summer vacation, previous to taking any work in this school, be spent in the shops of a railroad or locomotive builder.

Specialization in the engineering schools is generally into study of the structures peculiar to railroads and their uses. Next it is a development of the inquiry as to the relative cost of materials and as to different types of construction and their efficiency under varying traffic conditions. Supplementing the special economics of the branch of railroad practice specially taught is usually a course in the general economics of railroad operation and railroad organization and management. Prof. W. F. Goss, of Purdue University, describes the method of specialization in technical schools as follows:

It may be noted that the modern view of a technical or professional course is one involving great flexibility. Such courses can no longer be made to embrace all the topics which their title would naturally include. As a result, we find courses arranged in parallel, all those of the same class dealing with the same fundamental subjects, but each differing from the others in the particular subject emphasized. It is noticeable, also, that one of the results of this arrangement is that in many cases the subject emphasized in school does not directly enter into the work of the engineer after graduation. There is no loss in this, for while he may have no use for the specialty, he will need to specialize, and his ability to enter upon new lines of work will have been strengthened by his research as a student. In other words, it appears that within limits the value of a university course, even when designed to serve a specific purpose, does not depend entirely upon the subjects it embraces.

There are sometimes special features added, as the course in railroad block signaling and the interlocking system at Rensselaer. Quoting from their catalogue:

A special lecture course on railroad signals has been added to the curriculum and is now given to the members of Division A. The various systems of interlocking are discussed and illustrated by diagrams and models, and different arrangements of tracks are provided with signals. Visits to and examinations of both electrical and mechanical block signals in the immediate vicinity are also made.

At Sibley College there is, in connection with the railway mechanical engineering course, a chemistry course in railway quantitative analysis, as follows:

Chemistry—Advanced railway quantitative analysis.—Two hundred and seventy hours of actual work in the laboratory, subdivided as follows, will be sufficient: The irons, 50; oils, 30; paints and varnishes for wood and for iron, 30; boiler-feed water, 30; feed-water compounds, 30; alloys of copper, tin, zinc, lead, antimony, phosphorus, 50; steam-pipe coverings, 20; waste, 20; sulphur in coal, 10. Also chemistry, course 10. M. E., 21, 30, 31. X. E., 21, 40 in railway equipment and supplies. E. E., 23, 31. M. D., 20, 21, 22. C. E., 10, 13, 38, roofs, cranes, and turntables, 39, 42. Law: Contracts, specifications, torts, corporations, carriers, patents. Political economy: Elementary 51, transportation 62, wages 55.

Other features of this advanced railway course of graduate work at Sibley are:

20. *Rolling stock.*—The design, construction, operation, and maintenance of locomotives, tenders, and cars. Four lectures.

21. *Locomotive designing.*—Fall and winter terms, elective spring.
22. *Seminary.*—Discussion upon previously assigned railway journals. Special papers and reports. Juniors, seniors, and graduates.
30. *Advanced railway mechanical engineering.*—Lectures and directed reading in amplification of course 20, taking up also shop arrangement, equipment, and methods, government of labor, drafting-room management, railway testing and test department, organization, methods, and records of motive-power department, foreign railway engineering, compound locomotives, freight-car design.
31. *Railway designing.*—Advanced work. Locomotive road testing.

Higher Mechanical Instruction Specialized for Railways.

The general nature of the railway mechanical engineering course is well described by Prof. Wade Hibbard, of the University of Minnesota, in a paper read before the Northwestern Railway Club, from which the following excerpts are taken:

In considering the place of railway mechanical engineering as a technical school study the question of time is at once confronted. The fundamental studies of the four years must not be neglected, which form the foundation necessary for whatever special engineering structure may afterwards be erected. A man who is given sufficient shopwork to make him not an expert mechanic, but familiar with shop processes and what can be accomplished by the molder, at the forge, and in the machine shop, and who has been thoroughly drilled in mathematics as a tool, practical physics, engineering chemistry, modern technical languages, drawing, the principles of the sciences of machine design, and of the action of steam and other motive powers—a man thus thoroughly grounded is more truly upon the road to success than one who lacks in this training and has had extensive instruction in the details of the profession he is going to follow.

It is, however, not necessary to omit these requirements. During the senior year much can be accomplished by using the time alloted to electives, to the Journal Club, to designing and drawing, to work in testing, and to the graduation thesis. This is the plan which, inaugurated by the writer a year ago in the University of Minnesota, has proved entirely satisfactory. To fill out the electives a course of daily lectures is given throughout the year upon the following lines, quoting from the catalogue:

Past and future development of the locomotive.

Materials of construction. Motive-power specifications and standards.

Locomotive and train resistance: The track from motive-power point of view.

The locomotive boiler: Types, proportions, details, accessories and attachments, grates and heating surfaces, lagging, fuels, smoke prevention, water circulation, testing, effect of temperature upon metals, shopwork.

The locomotive engine: Details, piston speed, reciprocating parts, bearing surfaces, link and valve motions, steam distribution, heat insulation.

The locomotive as a carriage: Limitations, frames, spring and equalizing rigging, journals, engine trucks and wheels, drivers and their counterbalancing, brakes, steam heat, cab.

The tender: Tank and attachments, wood and iron frames, built up and solid trucks.

Locomotive management: Engine loads, coal premiums, crew systems, expert instructions, wear limits and repairs, lubrication, performance sheets.

Compound locomotives: System and types, conditions for economy, cost of building and repairs.

European locomotive engineering and conditions of competition with American locomotives.

The domain and outlook for electric traction: The involved problems from electrical, railway, and business standpoints.

Drawing-room practice: Preparation, management, and classification of work, preservation of records, relations with the shops.

The shops: Their arrangement, tools, cost, and subdivision of power, labor paying, apprentices, reduction of costs and wastes.

The railway test room and test department: Inspection and purchase of supplies, service tests of equipment, relations of general storehouse.

The railway mechanical engineer and superintendent of motive power: Their qualifications and duties.

In these lectures the students are constantly being required to read articles in the railroad papers, the proceedings of the Master Mechanics' and Master Car

Builders' associations and of the American Society of Mechanical Engineers, complete files of which are always open to the men for free access. The literature of the railway clubs is, of course, found extremely valuable as recording the results of the most recent practice. The library of railway blue prints is consulted in illustration of both past progress and the present "state of the art." This collection, dating from 1867 and now numbering nearly 1,500, is being frequently enriched by large additions from the leading railroads and locomotive builders of the country, 85 drawings having just come from the Pennsylvania and West Shore roads. Visits to shops and road houses emphasize the facts of the lecture room.

The Journal Club meets weekly for discussion of the technical newspapers. Each member is allotted one weekly and, if possible, also one monthly, which he reads with care and reports to the club whatever of their contents he judges of sufficient value. As an example of the methods, a particular case may be taken. One paper has an article upon the uses and costs of compressed air in a railroad shop. A preliminary discussion by the club makes it evident to the instructor that a more extensive reading up upon the subject is needed by the members before it can be profitably discussed, and it is put over one week to permit this. Each member fills out a blank slip relating to each important item presented to the club, and it is placed in its proper alphabetical order in his private "card index" of technical information and references.

Designing and drawing is of course intended to teach the general principles involved in such work. Some special design, different for each student, so that more may be gained by the class as a whole, is taken up and carried through to its completion—such methods, with proper modifications for purposes of teaching, being followed as have been found successful by the writer in commercial drafting-room management. There are perhaps no problems involving such a variety of outlook and treatment as those relating to railway design, and if a senior develops a taste that way he may choose such a problem. It is the constant endeavor to keep the designer thoroughly in touch with the best railway work, having always in sight the limitations to strictly theoretical design which railway experience has found financially and practically to exist. Among the designs have been a locomotive boiler for lignite, connecting rods, crosshead, steam riveter, boiler suitable for car shop, equalizer and spring rigging, hydraulic shop or yard crane, and engine truck and brakes.

In locomotive testing, valuable experience was gained for the students in locomotive engineering the past year by road tests of five locomotives upon one of the lines leading out from the Twin Cities. These tests included the use of a dynamometer car, following completely the Master Mechanics' Association standard directions. Locomotive road tests are by far more difficult to conduct than stationary engine and boiler tests in the obtaining of trustworthy results. It is therefore not in any sense a loss if those students engage in them who do not eventually follow railway work.

In valve gears the latter part is devoted to the Stephenson shifting link motion as ordinarily found on locomotives, marine engines, and reversing stationary engines. It is first analyzed geometrically by the excellent Bilgram diagram, giving a close approximation to the desired result in steam distribution, and is then designed practically in all its parts by a full-sized model, largely after the Auchincloss method.

There thus has been described what is now being done in the State University without making any radical change in general foundation studies. As the demand increases for technical men in the railway service, the number of men desiring to study railway mechanical engineering will increase, and some modifications in the fourth-year course may be indicated in other ways. For instance, the work in valve gears and valve design might omit many types of high speed stationary design and then treat that most important part of the locomotive exhaustively. Thermodynamics would treat the locomotive much more thoroughly. Windmills and water motors would be omitted, and gas engines be but briefly examined. Problems in design could in lectures be related solely to railway work. The electrical laboratory would give manipulations and tests of electric railway appliances solely. The senior year in locomotive engineering would then be made to take a place similar to the senior year in electrical engineering at Cornell University.

It is, of course, apparent that the preceding scheme for locomotive engineering can not be expected to give the thorough teaching which the addition of a graduate year in railway mechanical engineering would permit. The latter would deal with the subject much more extensively, as well as intensively, and would permit the study of more of the problems that the railway mechanical engineers and superintendents of motive power are called upon to settle. Some of these

may be mentioned in a general way. It may be necessary to change to compound motives, and it must be decided which of the 25 types is best for the road. The department must be familiar with steel manufacture, particularly of boiler, axle, tire, and rod steels, as also the adaptation of steel and malleable iron castings and pressed steel to latest car and locomotive design. Stationary boiler design, chimney work, standardizing of equipment, selection of new equipment, frequent visits of inspection to the shops of the road or of other roads, car shops or locomotive works—these hint at the varied duties and responsibilities. In shop management modern methods of arrangement and equipment must be understood and practiced, electric, pneumatic, and hydraulic appliances used, each as most suitable, and the economics of labor must be studied. Electricity is recognized as a motive power and competition to be absorbed, and on short lines where passenger traffic is fast and frequent, with light trains and the line to itself, it will probably be necessary in the near future to have plans ready for its adoption. The general consensus of expert electrical and railway opinion is that for long distances or infrequent trains its possible adoption is very remote. The present efficient locomotive is capable of greater speed than the public is willing to pay for, than the signal system could safely permit, or more profitable traffic make way for. The cost of installation is a commercial hindrance, and even if installed, the low efficiency of intermittent and long-distance operation, interest on investment in costly power stations and large conductors, would give no saving over the present steam traction.

Turning to the plan for a graduate year, the arrangement of courses is made independent of the senior year, and would be suitable for a college attracting many graduate students from other institutions. The hours are credit hours per week, designing and testing requiring 2 hours' work for each credit hour:

	First term.	Second term.	Third term.
Locomotive lectures	5	5	5
Locomotive designing	5	5	5
Testing	3	1	3
General railway mechanical engineering lectures	2	2	2
Seminar work, railway journals, and thesis	2	2	5
Car lectures and designing	2	4	0
Elective, subject to approval, but preferably electrical engineering	3	3	2
Total	22	22	22

I have thus far referred solely to the technical studies that are apparently the most important. I feel that as an educator in the university of this great State I should be unmindful of my duty if I were to forget our aim to produce a symmetrical character in the young men coming under our influence.

At Purdue is a special railway mechanical engineering laboratory. A locomotive mounted on spools, instead of track, is subjected experimentally to all the running conditions of actual practice. Describing the work there done, in a paper before the New York Railroad Club in 1897, Prof. W. F. M. Goss says:

Purdue University has given careful attention to the matter of preparing men for positions with railway companies. Six years ago a locomotive laboratory was established, and since that time a considerable amount of railway mechanical engineering has been done. The scope has broadened each year, and it is expected that this process of natural growth will continue. It may be that in time we shall reach a four-years' course in railway management; but for reasons which I have already indicated, we do not at this time see our way clear to so comprehensive a scheme. The indications are, however, that if such a course is established at Purdue it will be an outgrowth of present engineering courses; that is, solid engineering subjects will underlie and bind together the other topics, many of which must be treated descriptively or by process of debate.

In further explanation of the work already accomplished, I may add a summary of the railroad topics which will be open to students in mechanical engineering during the next school year, a portion being required, while the remainder will be subject to election. The scheme is as follows:

1. *Railway equipment.*—Recitations and lectures on locomotive construction; principles of locomotive design; a comparative study of locomotive details; car design; train brakes and signals, and car lighting, heating, and ventilating.

2. *Locomotive performance.*—An analytical study of the performance of simple

and compound locomotives, as shown by the results of road and shop tests, and a study of conditions affecting locomotive efficiency.

3. *Laboratory work.*—(*a*) Locomotive testing, involving practice in taking all observations incident to complete efficiency tests of locomotive "Schenectady," and in working up observed data obtained from such tests; also tests of Purdue's Baldwin compound locomotive engine. (*b*) Locomotive tests in series, arranged for the purpose of showing the effect upon the efficiency of the machine, of changes in the proportion of parts, or of changes in adjustment or condition. (*c*) Tests to determine the performance of air pumps, of several elements of the Westinghouse brake system, and of systems of car lighting. (*d*) Tests to determine the strength and other physical properties of various elements common to railway construction, such as links, pins, turn-buckles, axles, channels, rails, and rail joints; also tests of standard specimens of different constructive materials.

4. *Locomotive design.*—Drawing-room practice in the design of locomotive details and in calculating their strength and deflection.

5. *Railway chemistry.*—Lectures and laboratory practice concerning the general application of chemistry to railway interests; the chemistry of iron and steel; the chemistry of fuels, water, lubricants, and paints; and concerning chemical requirements in specifications.

6. *Railway economics.*—Lectures on the industrial importance of the railways, their business management, the railway and the labor question, the interstate-commerce act, and railway rates.

7. *Railway law.*—A series of lectures on the rights and liabilities of the railroad and the rights of the public.

8. Special lectures to be given by men eminent in their profession, representing different departments of railway organization, upon subjects relating to their department.

Civil Engineering Specialized for Railways.

As a general description of the civil engineering course specialized for railways, there is given below a statement by Prof. N. O. Whitney of the work done at the University of Wisconsin:

Our railway course is included in the general civil-engineering course, and was organized by me eight years ago, when the board of regents of this university appointed me to the chair of railway engineering. This is the only such chair, to my knowledge, in a technical institution, except that in the Massachusetts Institute of Technology.

The aim of the course is to prepare our graduates for the engineering, transportation, and operating departments, and not for the motive-power department in particular, although we have an excellent mechanical engineering course. Our railway course begins in the junior year and extends through both junior and senior years. Starting with the actual laying out of a few miles of line in the neighborhood, the students do all the work necessary to locate and build such a line—obtain right of way, let contracts, make monthly and final estimates of various work, detail plans, etc. This is followed by lectures and assigned readings on maintenance of way, standard structures, and safety devices, including signaling. In the senior year the economics of railroad operation, the sources of income, operating expenses, nature and extent of influence of alignment and traffic upon net receipts, train resistances, classification of locomotives and rolling stock are studied. Opportunity is afforded of electing several other courses of advanced railway work along the same lines, both in technical and in historical and economic lines.

The four-years' course in civil engineering requires about 4,200 hours' attendance, nearly 60 per cent of which is required to cover languages, mathematics, physics, chemistry, mechanics, and preliminary studies; the remaining 40 per cent being devoted to specific studies in engineering, subdivided as follows: Fifteen per cent topographical, 7 per cent structural, 7 per cent railway structural, 8 per cent railway, 2 per cent steam, 2 per cent electrical engineering.

In further description of the work done at the University of Wisconsin, Professor Meyer writes:

As to our regular courses, in the engineering departments, besides the fundamental branches usually given in civil engineering courses in our best universities, viz, shop practice in wood and iron, surveying, drafting, mathematics, mechanics, testing of materials, physics, chemistry, geology, astronomy, structural design, short courses in steam, electrical, and hydraulic engineering, sanitary

engineering—all which lead up to specific training in railway construction, operation, and management, we offer and give courses in railway reconnoissance, surveys, location, construction (including tunneling), maintenance of way (including signaling), and operation.

Under "operation," the following are studied: Sources of income; operating expenses; relative values of distance, gradient, and curvature, and their influences upon net receipts; classification of locomotives and their relative power, rolling stock, and train resistances; trunk lines and branch lines; the improvement of old lines; terminals.

But, for the most part, railway specialization in the civil engineer's course is not carried out to the same degree as in the mechanical engineer's course. We quote Prof. J. C. Nagle, of the Agricultural and Mechanical College of Texas:

Our technical schools are prepared to give general training along civil engineering lines, but so far as railway track work is concerned, it has thus far been general only. Of course the underlying principles necessary for the understanding of all engineering operations must be given, together with such laboratory and experimental work as will familiarize the student with the uses and strength of materials of construction. But no institution, as far as I know, has as yet made any very extensive effort to familiarize students with the many details of track work. As regards the details connected with the maintenance of way, it is difficult to secure even descriptive literature, to say nothing of experimental knowledge, of the subjects treated.

Higher Commercial Instruction Specialized for Railways.

Among the later movements in education is that for higher commercial education. It may be said to bear the same relation to those courses of liberal education in history, politics and economics, and sociology that the technical courses do to those in pure science and mathematics, which they follow. Perhaps the transition has not yet been so far accomplished as to warrant the claim that an applied science of these principles has been worked out, but this is the goal toward which it tends. They aim to reduce to effective business usefulness the theories of these sciences, and connect them with the uses of the world. This idea is not a new one in Europe. Commercial education has there come to be a recognized factor in exploiting and holding the trade of a country.

In this country the pioneer in the movement was the Wharton School of Finance and Economy of the University of Pennsylvania, which was established in 1881. In 1898 the Chicago University and the State University of California each inaugurated a "College of commerce," and the authorities of the University of Missouri have such a course under contemplation. Something analogous is the School of Jurisprudence and Diplomacy, established at Columbian University in 1898. These schools bear to the business schools something of the relation of the higher technical schools to the trade schools.

They do not fit for specific occupations immediately, but offer the equipment that with ready adaptation can be turned to practical use. As expressed by Prof. Emory R. Johnson, of the Wharton School of Commerce of the University of Pennsylvania:

The ideal should not be to train pupils in the arts of business; the aim should not be to turn out skilled clerks, but young men with an education that will enable them in due time to take their place in the ranks of educated business men. Before the would-be physician begins those studies which have to do with the art or practice side of his chosen profession he takes a course of study whose core is made up of certain natural sciences. He studies the interaction of forces in that large world of life of which man is a part, that he may understand the relation of man to that larger world and be able to know and deal intelligently with the forces which control man's physical well-being. Similarly, the boy who expects to enter some particular field of business needs to study the laws and forces which obtain in the larger realm of business, and to analyze the political and social forces which dominate the social world in which he is to live and carry on the special business of his choice.

It is possible that in time these schools will offer special courses as do their prototypes in Europe, in connection with commercial museums and commercial laboratories, both physical and chemical, fitting for the grocery trade, wine trade, etc.

In the commercial colleges railroad subjects naturally occupy a larger place than in the ordinary academic courses of the university. The Wharton School of Commerce has a department of transportation under the deanship of Prof. Emory R. Johnson. The University of Chicago also has a course in transportation. The catalogue describes the nature of the work at the Wharton School as follows:

At the University of Pennsylvania the course of finance and economy of the Wharton School extends through four years and leads to the degree of bachelor of science in economics. The studies are grouped under the heads of public law and politics, business law and practice, economics and social science, journalism, history, logic, ethics, English, German, and mathematics.

The practical purpose of the course lies in its outlook toward certain definite careers of public life. The course has been arranged to give the future man of affairs an elementary knowledge, at least, of the complex problems of modern life. It was early perceived that the groundwork of such a course should be training in politics and economics. Around this basis has been grouped work in history, logic, language, and mathematics, as well as special work in transportation, commerce, banking, journalism, and kindred topics.

The courses bearing on railways are:

Commerce.—A study of the political and economic forces that have controlled the world's commerce since the fifteenth century. The last third of the course is devoted to American commerce, lectures, reports, and readings.

Theory and geography of commerce.—A study of the theory of commerce. Commercial products and foreign trade of the United States, and of the principal commercial countries. Chisolm's Commercial Geography.

Physical and Economic Geography.—A study of elementary physical geography and geology, and their relation to the industrial and social life of the people of the United States, Tarr's Elementary Physical Geography, Monographs I to IX of the National Geographic Society. Lectures, essays, and readings.

Transportation.—A study of railway transportation, inland navigation, and ocean shipping, with special reference to the United States. Lectures, essays, and readings.

At the University of Chicago the College of Commerce occupies the second two years of the university course of four years. The strictly transportation work is comprised in three major subjects for one-fourth year each. One-third of the time must be given to these, another third is optional within a certain limited range of coordinate subjects, and the remaining third from anything in the general department.

The general purpose of the work is explained in their catalogue:

The purpose of the new college, like that of those already existing, is twofold: First it aims at the attainment of general culture. In the second place, the weight of work is put in the lines of the courses offered by certain specified departments. In the new college those departments include political economy, political science, history, and sociology—in the other colleges the distinctive work being in the classics, modern languages and literatures, and science, respectively.

The courses of study afford instruction concerning the place of America in the general development of civilization; the origin and characteristics of our national institutions; the physical resources, moral traditions, and intellectual standards of our country; the commercial, domestic, and foreign relations of our industries and our politics; and the principal economic, social, and political problems which confront the leading nations of the world,

It is intended by the College of Commerce and Politics to provide for those whose tastes lie along the particular lines indicated, and at the same time to open a way for special training in the direction of certain forms of business, of politics and journalism, and of diplomacy.

The college is by no means a technical school, but is intended to give a kind of knowledge and training which may enable those who enter commerce, politics,

journalism, or diplomacy to begin their work with a certain degree of special equipment.

Those who develop an especial aptitude for the subjects pursued will in many cases continue their work in the Graduate School.

The courses in railway subjects are described as follows:

Processes of leading industries.—The student who proposes to prepare for a career as a railway manager, a manufacturer, or as a banker should be familiar with the essential parts in the processes of production of the several leading articles of exchange. These processes are interwoven with the imposition of custom duties, and with the changes in price which are constantly taking place. The interdependence of industries is so great that adverse conditions in one will show an influence on many or all; and an understanding of the methods followed in the leading industries will give a larger power and broader judgment to the man of affairs. At the same time it will give a knowledge of the manufacturing resources of our country. Study will be made of the materials used, the machinery employed, the economic ordering of the manufacturing plants, their financial management, and the methods of handling and marketing the products. It is intended to show the operations in such industries as those of iron and steel, copper, petroleum, sugar, cotton, wool, flouring, shipbuilding, boots and shoes, meat products, harvesting machinery, the locomotive, and the like. The course is also recommended to economic students in general having had little previous experience in practical affairs, as providing data for their assimilation of principles. The grouping of so many large industries in Chicago will give to the student unusual facilities for making personal investigations. This course does not require a previous course in economics.

Railway accounts, exchanges, etc., lectures, reading, and reports.—A study is made of the financial methods of leading railways as shown by an analysis and examination of their accounts. In the interests of both investor and manager the training in methods of railway accounts and auditing will be valuable, but this can be done to advantage only after taking the courses treating of the general problems of railway management (railway transportation and comparative railway legislation).

Together with this work, grouping allied topics, the student will be trained in a study of the construction of bond tables, the causes regulating the prices of bonds and railway securities at home and abroad, the calculation of foreign and domestic exchange, and an introduction to annuities.

Comparative railway legislation—Lectures, reading, and reports.—It is the aim of this course to give the student who has already passed satisfactorily course 12 (economic theory) a study of the development and present nature of the railway systems of Great Britain, France, Germany, Austria-Hungary, Russia, Brazil, and Australia. From this comparative examination it will be learned what light the experience of other countries will throw upon our own railway problems.

Railway transportation—History and development of railways—Theories of rates—Combination investments—Speculative managements—State ownership or control—Lectures, reports, discussions, and readings.—The economic, financial, and social influences arising from the growth of modern railway transportation, especially as concerns the United States, will be discussed. An account of the means of transportation developed in Europe and America during the early part of the century, the experiments of the States in constructing and operating canals and railways; national, State, and municipal aid to private companies; the rapid and irregular extension of the United States railway system in recent years, with some attention to railway building in other countries, will form the historical part of the work. A discussion of various theories of rates; competition, combination, discrimination, investments, speculation, abuse of fiduciary powers; State legislation and commissions, and the interstate-commerce act with discussions under it; and the various relations of the State, the public, the investors, the managers, and the employees will form the most important part of the work. A comparison of the United States railway system with those of other countries will be made with special attention to the problems of State ownership.

This course gives a general view of the subject. Students who wish to continue the work by investigating special problems will have an opportunity to do so under the guidance of the instructor.

The graduates from these courses so far have become teachers, publicists, journalists, and business men, but only a very few have gone into railway service. But it is too soon to judge what part they may ultimately have in railroad operation. That the railways are alive to the practical bearing of the courses there taught

is evidenced by the recent selection of one graduate as economist and statistician of a great railway system in the Northwest. Their training would fit for the accounting, the financial, and the traffic departments. It should also furnish experts in special investigations and in the management of any sociological efforts, as relief, superannuation, and insurance funds, and as assistants to executives. While such talent could be of great value on railroads at present, it is not a need that is generally conceded. For some time it is probable that the supply of men will be too far advanced of the general practice in the organization of railway staffs to receive substantial recognition.

University and College Instruction Specialized for Railways.

So far as railroading, specifically as railroading, is taught in the colleges (I mean outside of the technical engineering schools), it is treated in the department of political economy. There it is treated only on the side of the relations of the railroads to each other, to the citizen, and to the State; railroads are considered in the sociological relations, which after all is the most important part of the whole subject.—H. G. Prout, editor Railroad Gazette.

Transportation occupies so large a place in all commerce, economics, and sociology that no course can go far without touching on the subject in some way. Thus, all the universities that offer courses in economics that are in any way thorough devote some of the lectures to railroads. At Yale, Prof. A. T. Hadley, who is so well known as author of the excellent treatise, Railroad Transportation, conducts a course in transportation. At Harvard is Professor Taussig, whose name is specially connected with transportation economics. At Cornell one term is devoted to transportation, with text-book, lectures, and reports. There is also a course in economic and commercial geography, which bears directly on the subject. At Ann Arbor, Prof. Henry C. Adams, the statistician of the Interstate Commerce Commission, conducts a course in the "Railroad Problem." Leland Stanford University offers a special course every second year, and enjoys considerable prestige as having the finest railway library in the country. Even Smith College for women conducts a course in transportation.

As a sample of the character of the work done at some of the universities we give below a topical outline of the lecture course by Professor Meyer at Wisconsin University, in the School of Economics:

RAILWAY TRANSPORTATION.

Preliminary survey and general considerations.

1. The nature of this course.
2. The beginnings of railway building.
3. Internal improvements in the United States.
4. The railways of the world.
5. Examples of notable railway undertakings.
6. What is a "railway"?
7. Classification of railways.
8. Influence of railways:
   (*a*) Economic.
   (*b*) Political and social.
   (*c*) Educational, scientific, and æsthetic.
   (*d*) Military.
9. The relation of railways to the public and to the State.

Railway history and administration.

1. The leading railway systems of the United States.
2. Leading systems of foreign countries.
3. Railway charters.
4. The administration of a typical American railway.
5. Prussian railway administration.
6. Railway administration in England and other countries.
7. Railway clearing houses.

Railway rates, theory and principles.

1. The place of railway rates in economic theory.
2. The various principles on which the administration of railways may be based.
3. An analysis of the services which railways perform.
4. Characteristics of transportation objects in their relations to railway equipment and service.
5. Measurement of the relations between transportation objects and railway service.
6. The formation of railway rates.
7. Different systems of railway rates.
8. History of classification.
9. What is a reasonable rate?
10. The effects of changes in rates on persons and goods.
11. The postal principle in railway transportation.

Railway rates, practice and machinery.

1. The history of railway competition.
2. Railway pools and consolidations.
3. Traffic associations.
4. The classification of freight.
5. Classification in passenger traffic.
6. Passenger tickets.
7. Scalping.
8. Free baggage.

The regulation of railways through State authority.

1. The various methods of railway regulation.
2. Early general railway legislation in the different States.
3. Early general railway legislation in Wisconsin.
4. The Grange movement.
5. The Potter law.
6. Amendment of the Potter law and subsequent legislation.
7. State commissions. The Wisconsin commission.

The regulation of railways through Federal authority.

1. The history of Federal railway legislation.
2. The interpretation of the courts.
3. Reports of the Windom, Reagan, and Cullom committees.
4. Methods of discrimination. Just and unjust discrimination.
5. The Congressional debates on the act to regulate commerce.
6. The interstate-commerce law.
7. The interpretation and enforcement of the interstate-commerce law.
8. Amendments to the act.
9. Important decisions of the Interstate Commerce Commission.

Railway financiering.

1. Railway securities.
2. Railway land grants.
3. Railway crises.
4. Railway receiverships.
5. The Pacific Railway debt.
6. The taxation of railways. History and theory.

The railways and their employees.

1. Railway labor. Legal relations of employers and employees.
2. Injunctions.
3. Railway accidents and safety appliances.
4. Railway relief and insurance.

Special service.

1. The Railway Mail Service.
2. The express business.

Foreign railways.

General description.

Thus the colleges are recognizing the railroads not merely as a factor in the student's general field of economics, but as a profession holding out a life career to the graduate. Mr. Walter G. Berg, principal assistant engineer of the Lehigh Valley Railway, says of these extensions of college work which mark the first stages of the transition to a special course:

Every attempt to extend the scope of our colleges so as to prepare men more specifically for the higher general railway profession should be considered as the second important step to be taken in the solution of the problem before us, thus filling one great void in our present educational system. Our mechanical, civil, electrical, and mining engineers, our architects and lawyers, who enter railroading after graduation will be not only specialists in their particular profession, but will possess a broad knowledge of the general principles underlying the railroad business, while the special graduates in the course devoted to the general railway profession proper will furnish to the executive, financial, traffic, transportation, and general railroad departments much valuable material to be shaped into future managers and leaders in railroad circles.

The number of men who pass from the academic courses of the universities to railway service is most inconsiderable. From a large number of inquiries the only answers received are given below:

Harvard, class of 1896.—Murray Forbes, Pennsylvania Railroad; J. T. Hayes, Boston and Maine Railroad, auditing department; A. S. Ingalls, Cleveland, Cincinnati, Chicago and St. Louis, transportation department; A. Howland, Mexican Central; H. R. Storrs, Seaboard Air Line, general inspector.

Class of 1897.—"To my present knowledge, but few of my classmates are in the railway service."—Class secretary.

Class of 1898.—"I have no definite record of any of my classmates being connected with the railway service. Three or four men signified their intention of taking up railroading, but whether they did so I can not say."

Amherst College, class of 1897.—Two out of a class of 100 have gone into railroad service. One is a large stockholder in the Canadian Pacific Railroad and is in the general offices of that road. The other is in the chemical laboratory of the Philadelphia and Reading Railroad.

Dartmouth College, class of 1897.—One man out of a class of 114 entered railway service. He is in the freight department of the Vermont Central.

Specialization by lectures by practical railway men.—Many institutions are able to intersperse and supplement the theoretical instruction of their regular teaching corps by talks by practical men, each speaker describing his special department. This gives the student insight into practical conditions of administration. The talks bear more especially on the organization and general methods of the work in each department than technical detail. They have been given both in connection with economic studies and with engineering courses. Naturally those in connection with the economic courses bear more on organization and general principles. Those lectures to the engineering students bear on methods and things, if any distinction may be said to exist. At Cornell the past year Mr. W. H. Baldwin, jr., president of the Long Island Railroad, has delivered to the students in economics a series of eight lectures on railway management. At Wisconsin University the lecturers and subjects for the past two years have been:

J. N. Barr, superintendent Chicago, Minneapolis and St. Paul Railway; subject, "A screw loose."

G. H. Noyes, LL. B.; subject, "Law of common carriers."

H. M. Sperry, National Switch and Signal Company; subject, "Railway signaling."

Onward Bates, superintendent bridge and buildings, Chicago, Minneapolis and St. Paul Railway; subject, "The superintendent of bridges and buildings."

W. E. Baker, general manager Metropolitan Elevated Railway; subject, "Electrical equipment for elevated railways."

O. W. Wason, president of Cleveland, Painesville and Eastern Railway; subject, "Interurban electrical railways."

Also several lectures from L. F. Loree, general manager of Pennsylvania lines west of Pittsburg.

Lecturers in the department of mechanical engineering, Purdue University.

For the year 1897–98:

J. T. Brooks, second vice-president Pennsylvania lines west of Pittsburg. "Problems in the management of a railway system."

Frederic A. Delano, superintendent freight terminals, Chicago, Burlington and Quincy Railway Company, Chicago. "Signaling."

Addison C. Harris, attorney at law, Indianapolis. Three lectures. "Relation of railways to the State," "Railroads and the people," "Railroads and their servants."

Melville E. Ingalls, president Big Four System, Cincinnati. "Railways; their past, present, and future."

John W. Noble, ex-Secretary of the Interior, St. Louis, Mo. "The mutual obligations of railroad corporations and the people."

Robert Quayle, superintendent motive power and machinery, Chicago and Northwestern Railway Company, Chicago. "Business problems of the motive-power department."

Godfrey W. Rhodes, superintendent motive power and machinery, Chicago, Burlington and Quincy Railway Company, Aurora, Ill. "Experience in the motive-power departments of railways."

Angus Sinclair, editor Locomotive Engineering, New York City. "Reminiscences of a locomotive engineer."

Arthur W. Waitt, general master car builder, Lake Shore and Michigan Southern Railway Company, Cleveland. "Car designing and construction."

For the year 1898–99:

W. H. Baldwin, president Long Island Railroad Company, New York. "The routine of a railroad president."

Jacob N. Barr, superintendent motive power, Chicago, Minneapolis and St. Paul Railway Company, Milwaukee. (Subject to be announced.)

Charles B. Dudley, chemist, Pennsylvania Railroad Company, Altoona. "The application of chemistry to the railroad."

S. M. Felton, president Cincinnati, New Orleans and Texas Pacific Railway Company, Cincinnati. (Subject to be announced.)

William Forsyth, mechanical engineer, Chicago, Burlington and Quincy Railway, Aurora, Ill. "The part of a mechanical engineer in the organization of a railway."

Addison C. Harris, attorney at law, Indianapolis. "Railway law."

E. M. Herr, superintendent of motive power, Northern Pacific Railway Company, St. Paul. "The construction and maintenance of railway equipment."

J. F. Wallace, assistant second vice-president, Illinois Central Railway, Chicago. (Subject to be announced.)

Special University Railway Course.

With the close of the epoch of railroad construction the civil engineer has been largely crowded out of general administration by men who have not been professionally trained, but who have grown up within the service. The duties of the office have become highly administrative. Commercial talent has come into greater demand. But all of this has been developed within the ranks. There now comes forward a proposition to recognize these changed conditions and train men professionally for this specific service. It involves in this country much of the novelty of higher education in business. But it goes further and proposes to specialize in one particular business.

While the need has not been actually met, it has been much discussed, and a movement is already on foot for establishing such a course at one of our leading universities. The claim of the promoters is that mechanical and civil engineering courses, or even commercial courses, are not to be superseded, but that they are for the education of the railway specialist, not that of the general manager or administrator. They insist that the varieties of talent employed by railways

have become so highly specialized that there has arisen need for the man of a comprehensive general training in the organization and general principles of administration.

Such training involves education in methods, organization, sociological and economic principles, laws, usage, industrial and commercial conditions, etc. They would make general administration a specialty.

At the meeting of the New York Railroad Club in January, 1897, this subject was very ably presented by Mr. George B. Leighton, president of the Los Angeles Terminal Railway. The thoroughness with which it was discussed at that meeting, and the representative character of the railway managers present, give to their expressions especial importance:

Mr. Leighton, in presenting his views, said:

The course as herein planned is under consideration at Harvard. It will be divided under several headings, the whole requiring several years' work, and the graduate will receive some proper degree. The first year would be devoted principally to subjects which belong to any course of liberal education, such as modern languages, history, and political economy. During the second year a beginning will be made of subjects pertaining directly to railways, and the third and fourth years wholly devoted to railway and transportation subjects.

The following titles suggest themselves under which most of the instruction would naturally be grouped:

1. Economics:

(*a*) Historical—Relating to the conditions of commerce prior to the advent of railways. Transportation and distribution in 1800, both by land and water. Limitations of commerce and travel.

(*b*) Traffic—The principles governing traffic, especially in relation to various kinds of commodities. State and other railway commissioners; their history and necessity and duties. American and foreign commissioners; how they may be of great assistance to the corporation and public, or disastrous to the interests of both.

(*c*) Social—The railway as a social factor, showing the conditions of harmonious relations with the people and with the authority of the State; the government control or regulation of railways at home and abroad.

(*d*) Labor—The relation of labor to railways. Labor organizations, beneficial and harmful. Examples of profit sharing. Future relations as reviewed to-day.

(*e*) Geographical—Difference in geographic conditions affecting traffic, such as Eastern system of dense traffic and those built in advance of actual need in the West. The difficulties attending operation of light traffic over long distances.

2. Legal:

(*a*) Position of the railway under the common and statute law—What a railway may and may not do. Leases and ownership of other lines from a legal standpoint. Receivers; their duties and responsibilities. Liabilities to the State and individuals.

3. Business management:

(*a*) The operation of the railway—Duties of various officers, and their relations to each other. Detailed study of organization, with special study of approved examples in America and Europe. Duty of general manager. The economical handling of traffic from an operative standpoint. The telegraph as used on railways.

(*b*) Financial—Railway accounting. Study of some approved examples, with remarks on other methods. Duties of treasurer and auditor. Capital and securities of railways. Bonds, stocks, car trusts, etc. The status of the holders of these to the control of property.

4. Mechanical:

(*a*) Machines—The locomotive, steam engine, dynamo, and motor. Conditions under which the work must be done. Cars and their moving parts.

(*b*) Equipment—The adaptation of it to the work in hand. The varying demands of traffic necessitate material differences, but the elements of efficient equipment now fairly understood.

5. Civil engineering:

(*a*) Historical—Development of the tramway from the cart road, and the further development of the modern railway. The surmounting of early difficulties, public opposition, and the lack of proper track and equipment.

(*b*) Location—Fundamental principles of economical permanent ways. Proper location of line. Grades; their effect on operation.

This was intended as a professional course, which preferably should only be taken after the regular course at college, but that was not essential. The outline was purposely most meager, in order to invite the fullest discussion and suggestion. There was some criticism that it was too broad, and again that it was not broad enough. Some doubted the recognition that men who were trained in this way would get from the managers to whom they would look for employ. But for the most part the comments were in support of the position that there was such a need and that this was very definitely in line of its solution. The day of the uneducated man had passed. This had been proved in the technical department of the service, and it was already assured in the general administration.

A feature incidental to Mr. Leighton's plan, but left to be brought out by others, was the fact that it proposed a fitness which, in the ordinary course of events, came into play only long after the man entered the service, and then rather as an incident than as the direct purpose for which he was employed. But in the interest of the best railroad management the difficulty reduced to a very simple question, as stated by Mr. W. H. Baldwin, president of the Long Island Railroad: "Can not men with broader education be injected into the service, and can not we get those men into particular branches of the railroad to do those particular things that belong to such branches?" This plainly is the problem of the railroad manager, not of the educator.

Touching on this special education of railway men for administration, Mr. H. S. Haines, for many years president of the American Railway Association, writes:

The subject of fitting educated young men for railway service is one in which I have felt a great interest. Here seemed to be a field as yet not sufficiently recognized, either in the interest of young men or in that of the railroad corporations. I do not refer to the positions which call for special technical knowledge, but to those in which mental discipline and some general culture would add to efficiency in an office of administration, of accounts and statistics, of traffic, or of transportation. Such places are generally filled by promotion of youths who have been office boys, etc., and who in those humble positions have acquired a certain facility in the routine in which they have been employed that induces their superiors to promote them as occasion may offer, rather than to be put to the trouble to train better educated men for the same places.

As a fact, a college graduate entering business life fresh from academic groves is not only without a business training, but he is in a measure wrongly trained. He has first to rid himself of the attitude that he has before assumed toward the outside world. He must become painfully conscious of this before the habit of mental discipline and the substance of the culture which he has acquired in college will be available for himself or for his employer.

This is not surprising in the young graduate, since in my limited opportunity for observation I have found his teachers equally unconscious of it. I had occasion some years ago to discuss this matter with a professor in one of our principal universities. In the course of our correspondence I submitted to him a list of subjects on which I thought that a young man should be informed who was about to enter railway service. In return he sent me a list of the subjects which he thought better suited to the purpose. My list referred to matters of everyday routine with which even an office boy would be familiar, yet which are but partially understood outside of the railway service. The professor's list included, as I remember it, an inquiry into the origin and development of traffic by rail, the relation between the railway and the state, the rights of labor unions, and some other politico-economic subjects to which the average railway is entirely indifferent or antagonistic, or on which the college teachings, if upheld in a railway office by a subordinate, would be more likely to preclude him from promotion than to help him along.

The relation of the administrative to the technical course was described by Mr. H. G. Prout, of the Railroad Gazette, at a meeting of the New York Railroad Club:

Granting the value of thorough education in the schools, we are not here to discuss the special education which fits a man to be a railroad civil engineer, a railroad mechanical engineer, a railroad lawyer, or railroad doctor.

But there are other branches of railroading for which almost no provision is made in the colleges. For example, there is a branch of railroading much more difficult than engineering, much more difficult than law, because it includes more variables; much more important, because it involves the very life of the railroads and the life of modern society itself. I mean that branch which is handled within the railroads by the traffic departments; in their relations to each other, by the traffic associations; and which the railroad commissioners of the States and of the nation attempt to handle. The great branch of the art and science of railroading is practically untaught, except by a few fragmentary lectures in a few of the colleges, and a large part of the college teaching is bad, for a reason that I shall mention later.

Many railroad men say that this part of railroading can not be taught except by experience; that the variables are so many that the problems can not be generalized. This is partly true, but it is also true that a great deal of human experience has been gathered and might now be made useful to the men of the traffic departments, to the men in the railroad commissions, and to the teachers in the colleges. Specific questions of rates which arise, and which are fought over in the associations and before the commissioners, have arisen time and again in the last twenty-five or thirty years and been fought over. A few competent college lectures which would group and generalize these questions, which would teach a man where to go to find the records of past fights, would go a great way to prevent waste of time and of human energy, both in the form of actual work and stored in the form of money.

Another special branch of railroad education is that of organization of the working force and the distribution of powers and duties. This is a field in which competent general instruction, given in the years when a man is preparing for his work, might often be of great assistance in his after life. I know that railroad officers will tell you that every organization, to have its highest efficiency, must be largely special; it must be adapted to the specific work which it has to do and to the actual men available. That is true; but the man who is undertaking to evolve the most efficient organization for his own railroad can not neglect, and if he is a man of sense he will not neglect, the organizations of other roads in his own country and of roads in other countries.

Again, there is a whole unwritten and unformulated science of yards and terminals and sidings. The officers of each railroad go on working out their own systems from within their own intelligence, or collecting with a good deal of difficulty a few examples of what other men have done, and so modifying their own schemes. Surely they could start easier and go on with less effort if the work of collecting, comparing, and coordinating and generalizing had been done beforehand by a specialist, and if they had been made somewhat familiar with this work before they got into actual railroad life.

Much the same can be said of signaling. It is only within a very few years that the majority of railroad men have realized that there are certain well-established principles in signaling. Indeed I am not sure that the majority of railroad men to-day recognize that there are any established principles in this art; but every active railroad officer of intelligence has some time or other regretted that he had not been made familiar with the fact that there are principles which govern the application of signals, and been made familiar at least with the sources of information with regard to this art.

The young men who come out of the schools in mechanical engineering have received a very valuable training in machine design and steam engineering, but they, as a rule, know practically nothing of the relations between steam engineering and the work to be done by a locomotive on a railroad track. The loading, the manning, the care of the locomotive, the adaptation of it to the special work to be done in special cases—all this is to them an entirely unexplored field. They have learned their multiplication table, and some of them can use it with considerable facility, but it is still an abstraction.

These examples suggest a few of the directions in which preliminary teaching might be profitably given to the young men who aim to go into railroading as a profession. But now comes still another question. Is it desirable to try to take all these many branches of applied science and of social and business economics, and attempt to coordinate them into one general four years' course which shall fit a man to be a railroad officer? Presumably it is desirable if, first, such a course will better fit him for the vocation of railroading, and, second, if those of whom he may seek employment later recognize that the chances are that he is better fitted than the man who has had no such course. That is, will a university railroad course make a man a better railroader, and will it increase his value in the market?

It seems as if both of these questions answer themselves. Given a young man

whose mind has been cultivated, whose faculties have been developed, whose outlook over human affairs has been broadened by a fairly good college course in the languages, in history, in English literature, in mathematics, and in the physical sciences, and who has added to that a considerable special education in those branches of the railroad art to which I have already alluded, and in a dozen more, and one would say that he has an excellent preparation for taking a position as a clerk in a freight office, or as an assistant in a station, or as a secretary in the office of an operating officer, or as a supervisor in the track department, or in some other very subordinate place. We may take it for granted that, other things being equal, he will go faster and go farther than a young man who has had no college education at all, or than the young man who has gone through his four years' course with the general notion that he was cultivating his mind and strengthening his faculties.

But the contention between the technical school and the school of law and economics as to which form of training better leads up to the highest administrative positions, is an old one. In Germany, where systems of promotion are very rigid, there has been recently waged a war of pamphlets. A candid statement of the case by the technical man is the following by Prof. W. M. F. Goss, of Purdue University:

Economics and law are fundamental subjects and can not be omitted; but I doubt if they have any better claim to emphasis than questions of operation or matters of equipment.

I have already intimated that the process of establishing a course of railway management is less simple than would appear from a published outline. Facts alone will not make a course of instruction, and it requires time to convert facts into principles and to group principles into systems for students' use. Moreover, no single course can successfully stand alone. It must have affiliation with other courses, from which it may draw support, and its own character will depend largely upon the nature of its affiliations. Thus, a course of railway management in a technical school would naturally be affiliated with the technical courses, and in a classical school with more general courses; and in either case the end will be reached with equal directness.

Mr. W. W. Wheatley, superintendent of the Brooklyn City Railroad, says:

In this age of highly specialized departments of the railway service, the average young man, whose time is devoted to routine department work, has no opportunity to lay a broad foundation for his railroad career. He is exceedingly fortunate if his time and opportunities permit him to gain actual experience in more than one department. What he learns by actual experience is undoubtedly better learned than could be done in any college, but he is often deprived of the coveted opportunity to extend his experience or to learn by studying the experience and the achievements of others in the several departments. This is the opportunity which the college course, suggested by Mr. Leighton, proposes to supply. The graduate of such a course may not at first have experience, but he has knowledge. He will get experience later.

Mr. C. W. Bradley, general superintendent of the West Shore Railway, urges the need of the educated administration man:

If any of the railways want men to fill any technical position—either in the engineering or mechanical departments, they can get scores of men, but they can not get a man—the men can not be found, they do not grow in colleges—that can go before the public and sell what we have got to sell and get cost and a fair return on our plant. That is what is the matter with the railroads to-day. We are all selling our goods—"transportation"—too cheaply—in many cases less than cost.

Secondary Education for Railway Service.

This kind of education has so far been almost untouched. There is the instruction of the secondary technical school and the business college, which fit in specific things that are of use in the railway service, as they are of use in other avocations.

The secondary technical school, of which there are very few in this country, so far as inquiries made would show, does not enter largely as a factor in training men for railway service. However, where it is conducted as a night school, as at

Cincinnati, it does have some men who are at the same time in the shop. The manual-training school differs from the trade school in that its object is primarily disciplinary. That it does and can have a bearing on the railroad work in the shop is attested by the testimony of Mr. L. Bartlett, master mechanic of the Missouri Pacific Railroad, who says:

In selecting apprentice boys for our shops I always give the graduates of the manual-training school preference where it is possible to do so, for we consider that any young man who has the capacity to absorb the education which may be acquired in this school is fitted to obtain a trade more rapidly than the average boy with no education. You are well aware that there are sometimes boys who without much education—that is, school education—are very apt and quick to learn. These boys make excellent workmen, but they are exceptions; while it is very rare that a graduate of the manual-training school ever fails to become a valuable employee. I believe that if we could make selections from the ranks of the graduates of the manual-training schools of the country for all of our apprentices, in the course of a few decades we should not only solve the apprentice problems, but also solve many of the labor problems.

Mr. Bartlett's experience was with the school in St. Louis, which has been the pioneer in this country. And referring to the work there he adds: "I am a great admirer of the system established by Prof. C. M. Woodward, of the city of St. Louis, in what is known as the manual-training system. In practice the graduate of the manual-training school, on entering the Missouri Pacific shops, is placed on a par with the apprentice who has been at work three years."

But manual-training schools can hardly be said to be special training schools for anything but the mechanical department. The business colleges offer courses in telegraphy, but these graduates do not go into railroad service generally. There is so much else required of the operator on a railroad that the ranks are generally recruited from the helpers about the country stations, who have learned to handle the key while about the station.

Mr. G. C. Kinsman, superintendent of telegraph of the Wabash Railroad, says:

The question of the advisability of taking students in regular telegraph offices is one that will bear much discussion. It has some advantages, and is surrounded with many elements of danger.

We take a boy into an office to learn telegraphy and invariably forbid his touching the wires or instruments, a command which is necessary if we wish to avoid wire trouble, but which is sooner or later broken. My opinion (and I have for the past twelve years been, until recently, connected with a school for the sole purpose of preparing operators for our service) is that it is far better to give the beginner a technical education in a suitable school before taking him into the office, thus laying the foundation for greater efficiency than can be otherwise acquired.

The Wabash Railroad Company is at present taking a limited number of students into its offices. Applicants are required to furnish evidences of character and their school certificate.

But this practice of the Wabash is not general.

Stenography is another acquisition which has a definite value in railroad service, and this can only be acquired outside. Its use is not so special as that of the telegraph operator, but is general for all departments wherever clerical work is found. With stenography is always included typewriting.

Bookkeeping is taught very elaborately in the business colleges, but on the railroad the system is so highly organized that each man's assignment is very much confined. Except the general bookkeeper, very little knowledge of bookkeeping is required. It is never the practice of railroads to take men direct from the school and place them in charge of the general books. We do not know of any school where the blanks and kinds of books used on a railroad are specially taught.

In absence of any systematic special railroad instruction of the secondary grade which actually exists, we may take the plan outlined by Mr. Walter Berg, principal assistant of the engineer of the Lehigh Valley Railroad.

PROGRAMME FOR A SPECIAL RAILROAD TRADE SCHOOL.

These schoools would be to the subordinate branches of railroad work what commercial schools, or so-called business colleges, are to business. They would, as a rule, be interpolated between the regular public-school course and a boy's entrance into practical railroading.

The institution should be conducted according to the spirit and on the basis of a trade school, not of a college. Its success will lie in doing its work thoroughly within its proper sphere and limits, without making a display of its great learning or advertising its workshop system as a leading feature.

The entrance requirements would be limited to a general common-school education, more or less advanced, according to which department the applicant desired to enter.

The school would consist of a regular course of one year, and of an advanced course of one year; also a general course.

The scholars for the regular course would be young boys direct from public school and young men who, after a few years' work in a shop, office, store, or railroad department, begin to realize that their rapid success in life may depend largely on a better general knowledge of and familiarity with one subject or some specialty.

The advance course would be open to such scholars who had completed the regular course and whose means and abilities enabled them to pursue their special studies to a higher point. Also, men whose former education and subsequent railroad experience would qualify them to omit the regular course.

The general course, consisting of lectures on general railroad subjects, would be open to all comers in order to spread a better knowledge of the general conditions, laws, and public policy governing railroads among the general public.

The studies in the regular course would be so arranged that the course in itself would be complete from a practical view; that is, giving the scholar a general idea of the subjects taken up, the elementary principles governing his selected calling, and acquaintance with the principal details. Practical railroaders could attend this course without fear that the matter presented would be too high or extended for their purposes. The course would be divided into two terms, and the studies of the first term would be common for many scholars, who would then in the second term branch off to their chosen specialties.

In the advanced course the fundamental idea would be to build upon the general basis established by the regular course, to extend the different subjects to a higher grade, treating them in a more thorough and scientific manner, and to afford more time and opportunities for illustrative examples, demonstrations, laboratory, workshop, and drawing-room exercises.

The general course would consist of evening lectures, at stated intervals, on the most general laws and conditions governing the control, operation, and management of carrying companies, their relations to the State authorities and the public at large, their history, and influence in industrial, trade, and labor questions.

All illustrations, examples, demonstrations, laboratory and workshop exercises would be taken from appropriate practical problems and conditions connected with railroad work. The workshop feature should be considered as an important adjunct to the lessons, illustrating in a practical way the principles and methods developed and explained in the schoolroom. Any suggestion that regular skilled workmen could be turned out of school workshops should be promptly discountenanced.

The choice of the teachers and managers would be most important. For many of the branches, theoretically educated men, with a subsequent long practical experience in their particular line, would be most desirable. In other branches, experienced railroaders would be preferable, who, in spite of the neglect of their early education, had, by innate common sense, observation, and study in later life, become masters of all the questions connected with their branch of work. A European element should be strictly avoided, and knowledge of the actual working and status of the conditions existing on American railroads be absolutely requisite. The salaries offered should be such as to induce practical men, whose standing in the railroad service is well known, to relinquish their positions and devote their talent and energy to the furtherance of the school as a life object.

The special departments or groups of railroad callings for which provision should be made are about as follows: Accounting and auditing; general railroad appliances and supply business; traffic; transportation and operating; telegraphy and signals; motive power and mechanical; car building; construction and roadway; buildings; bridges.

The studies for each group would be similar to the programme outlined below, which is not claimed to be final, but simply indicative of the general character,

trend, and scope of the work for each particular department. Many of the studies would be taken up in joint classes by the scholars from several departments; other studies are special for the individual department.

Accounting and auditing department.—Regular course, first term: Elementary bookkeeping; railroad department reports, material accounts, pay rolls, time distributions, recapitulations; general description of railroads, their equipment and management. Second term: Double-entry bookkeeping; supply and shop accounts; balance, performance, and mileage sheets; elementary business law. Advanced course: General railroad accounts for revenue and disbursements; auditing and collection systems: general balance sheets, reports, and statistics; stocks and bonds; mortgages and securities; trust and construction companies; law and general policy of accounting and auditing questions.

General railroad appliances and supply business department.—Regular course, first term: Elementary bookkeeping; department reports and accounts; general description of railroads, their equipment and management; general description of railroad appliances; properties of materials. Second term: Railroad supplies and their properties; quality, elementary, physical, and chemical tests; detail explanation of railroad appliances; special instruction for tie, lumber, rail, iron, and steel inspectors; storehouse systems. Advanced course: Chemistry and physics in connection with examination of materials; chemical and physical examination of railroad supplies, materials, and preservatives; independent laboratory and shop experiments; general industrial technology and metallurgy; description of important industries and trades producing railroad materials.

Traffic department.—Regular course, first term: Elementary bookkeeping; department reports and accounts; general description of railroads, their equipment and management; freight, passenger, baggage, express, and mail service; duties of freight and ticket agents, baggagemen, and expressmen; local terminal, and transfer stations; forwarding offices. Second term: Double-entry bookkeeping; accounting systems in passenger and freight business; freight classifications and rates; clearing houses and car-record systems; elements of law. Advanced course: Preparation for rate sheets and freight classifications in regard to special conditions, special rates and drawbacks; freight lines; pooling systems; foreign freight systems; general principles governing passenger business; the law and general principles governing all traffic questions; history of traffic and transportation lines; the proper relations between legislative bodies, State railroad commissions, and railroads in regard to traffic business.

Transportation and operating department.—Regular course, first term: Elementary bookkeeping: department reports and accounts; general description of railroads, their equipment and management; duties of conductors, brakemen, switchmen, yard masters, inspectors, repairmen, station masters, dispatchers; movement of heavy bodies and hoisting machinery, clearing wrecks; train service; general description of railroad appliances. Second term: Train orders and regulations; dispatcher's duties and authority; preparation of time-tables; detail description and illustration of railroads, their equipment and management; car records, mileage, and performance sheets. Advanced course: General administration of railroads in relation to condition of road, equipment and trade; economy in train service and equipment; influence of grades and curves; quality and capacity of rolling stock and general principles governing its use and construction; examination of advanced methods and improvements; special railroad appliances and inventions; the law governing train service, road, and grade crossings, corporate property, liabilities for damages, etc.; history of transportation and traffic lines.

Telegraphy and signals department.—Regular course, first term: Elementary bookkeeping; department reports and accounts; elements of telegraphy, with practice in use of instruments; duties of operators, linemen, repairmen, etc., with appliances and methods in use; details of signal apparatus and methods in general use; construction and repairs of instruments and signal apparatus; general description of railroads, their equipment and management. Second term: Practice in rapid transmission and use of complicated instruments; train dispatching; elementary science of telegraphy and elements of chemistry; descriptions and applications of electricity to special purposes, as alarms, tickers, telephone, automatic recorders, electric light, etc.; complicated signal systems, their use, construction, and repair. Advanced course: Practice in the use of complicated telegraph methods employed at central stations and on heavy lines; submarine telegraphy; application of electricity to complicated and delicate machines for recording tests, measuring time, etc.; electricity as a scientific subject, with experiments and laboratory exercises; detail history of electrical inventions and methods, with careful examination of instruments and specific features of each

method; electrical engineering and construction of telegraph lines and electrical machines; electrical mechanics; physical and chemical properties of electrical materials; electricity as applied to railroad signals; railroad signals as a general study in connection with history and detail of foreign railroad signal systems; the law governing inventions; mechanical and free-hand drawing.

Motive power and mechanical department.—Regular course, first term: Elementary bookkeeping; department reports and accounts; general description of railroads, their equipment, and management; practical mechanics; movement of heavy bodies and hoisting machinery, clearing wrecks; properties of materials; general description of machinery and locomotives, with distinguishing features and nomenclature of parts; duties of engineers, firemen, engine-house men and foremen, road foremen of locomotives, car inspectors; mechanical and free-hand drawing. Second term: Elements of theoretical mechanics and physics; practical mechanics; details of locomotives, their use, construction, and repair; elementary theory of the steam engine; general shop machinery, its construction and uses; railroad orders and regulations; designing locomotive and machine details; mechanical and free-hand drawing; railroad appliances and supplies used in rolling stock and shops. Advanced course: Theory of machinery; theoretical mechanics and physics; the general principles and rules governing the construction and use of locomotives and rolling stock, machine design, and economy; general machinery; construction and setting of stationary machines; transmission of power; locomotive designs and construction; mechanical and free-hand drawing and coloring.

Car-building department.—Regular course, first term: Elementary bookkeeping; department reports and accounts; general description of railroads, their equipment and management; practical mechanics; movement of heavy bodies and hoisting machinery, clearing wrecks; properties of materials; general description of car-building machinery and rolling stock, with distinguishing features and nomenclature of parts; duties of various car-shop mechanics, foremen, car inspectors; mechanical and free-hand drawing. Second term: Elements of theoretical mechanics and physics; practical mechanics; details of cars, their use, construction, and repair; general shop machinery, its construction and uses; railroad orders and regulations; designing car and machine details; mechanical and free-hand drawing; painting and painters' supplies; railroad appliances and supplies used in rolling stock and shops. Advanced course: Theoretical mechanics and physics; calculation of strength for minor parts; the general principles and rules governing the construction and use of cars and rolling stock; machine design and economy; general machinery; car designs and construction; mechanical and free-hand drawing and coloring; artistic ornamentation and designing.

Department of buildings.—Regular course, first term: Elementary bookkeeping; department reports and accounts; general description of railroads, their equipment and management; practical mechanics; movement of heavy bodies and hoisting machinery, clearing wrecks; properties of materials; building mechanics and building trades; general description of railroad buildings and structures, with illustrations; mechanical and free-hand drawing. Second term: Structural details; bills of material, estimates; designing details; manufacture of building materials; laying off work; erection of buildings and structures; building laws; elements of theoretical mechanics and physics; ornamental work and designs; mechanical and free-hand drawing. Advanced course: General construction and details of railroad buildings and structures; calculation of strength for minor parts; the chemical and physical properties of building materials for strength, durability, inspection, and testing purposes; theory of hoisting machinery; artistic ornamentation; designing; free-hand drawing and coloring.

Department of bridges.—Regular course, first term: Elementary bookkeeping; department reports and accounts; general description of railroads, their equipment and management; practical mechanics; movement of heavy bodies and hoisting machinery, clearing wrecks; properties of materials; general description of bridges and trestles, with illustrations; mechanical and free-hand drawing. Second term: Wooden and iron bridge details; bills of material, estimates of weight; designing details; manufacture of iron and steel; shopwork on bridges; erection of bridges; test of materials; elements of theoretical mechanics and physics; special machinery and appliances of moving heavy bridges; mechanical and free-hand drawing. Advanced course: General construction of bridges and details; theoretical mechanics applied to calculation of minor structures for strength and material distribution; the chemical and physical properties of bridge materials; the duties of bridge foremen and inspectors; maintenance of bridges; complicated bridge erection; theory of hoisting machinery; designing; history of bridge construction.

Construction and roadway department.—Regular course, first term: Elemen-

tary bookkeeping; department reports and accounts; general description of railroads, their equipment and management; practical mechanics; movement of heavy bodies and hoisting machinery, clearing wrecks; properties of materials; duties of section men and supervisors, and means and methods at their command; description of track material and implements, with their use; mechanical and free-hand drawing. Second term: Construction of roadbed; laying track; maintenance of way; grading and masonry, with tools, methods, and designs in use; explosives and their use; staking out work; laying off frogs, switches, yards, and track systems; grades and curves; general regulations and orders; special machinery and appliances for clearing heavy wrecks. Advanced course: Grade lines and curves in reference to rolling stock and operation of the road; details and designs for frogs, switches, yard systems, crossings, signals, and gates; complicated track systems and methods of shortening up leads; designs for culverts and masonry structures: economy in grading and track work; tunnel work, methods and appliances; rock machinery and properties of high explosives.

Instruction Combined with Work.

The desirability of combining theory with practice is obvious. The technical schools endeavor in part to overcome the objections of a purely theoretical training by encouraging their students to seek employment during vacations in railroad shops. The plan has met with the cooperation of the railroads in the Northwest, and they are enabled to testify cordially that the young men earn all that is paid to them. The benefit to the student is unquestioned. Often young men enter the shop after their theoretical work is done, and thus consecutively combine theory and practice. But where the apprenticeship which they enter is inflexible and holds them to the same pace as those whose capacity and training do not enable them to go as fast, the educated man suffers, because his theory and practice are divorced.

The objections to the purely "practical" course of work are quite as patent as those that are urged against a purely theoretical course. The man comes to work automatically and not by intelligent self-direction, and he loses all power of adaptation. In any instruction that has value, theory and practice are combined in some way. The various combinations will be made by the differing proportions in which they enter, and this will be determined by the ultimate use to which the course leads. As stated by Dr. Barnard, late assistant to the president of the Baltimore and Ohio Railroad, in the apprentice course school instruction should be made secondary to the shopwork, while in the higher courses shopwork should be always secondary to the mental training.

In the very thorough canvass of the subject which he made for the board of directors of his own company Dr. Barnard was quick to see the defects of an apprenticeship without instruction. He began by examining the apprentices who were on the road. The questions asked were no more difficult than those required for admission to the ordinary public grammar schools. Out of 147 examined not one passed. He says further:

> When learning their trades railroad apprentices were generally placed under "railroad men" of the "practical" type I have described, who despised, or affected to despise, scientific knowledge and scientific methods of operation, generally not because they understood or were able to weigh their bearings and value upon present pursuits, but because, knowing absolutely nothing about them, they thought thus to disguise their ignorance. Under such circumstances apprentices received little, if any, special instruction, but were mostly left to pick up their trades as best they could. Of course, under such a system, instead of having their special aptitudes developed, they in turn become "practical" men, and of this type is the present rank and file of railroad operatives.

Where the theory and practice are consecutive the question arises, What shall be the order in which they shall come, or shall they be intermingled? In some employments in the railroad service physical strength and a certain maturity of powers are essential. In such cases there could hardly be any question that the

theoretical should come first in order. Referring to the training of roadway engineers, Prof. J. C. Nagel, of the Agricultural College of Texas, writing in the Railway Engineering Review of February 11, 1899, says:

Few students entering college are old enough to have been physically able to do such work. Moreover, since the mind is most receptive at the age usually allotted to college work, it would be wasteful of time and energy to require a young man to postpone the period of mental training until after having attained the physical development necessary to enable him to secure practical training as section hand, track walker, and foreman. Among 80 young men who have graduated from our civil-engineering course during the last eight years, I know of only one who has been through even a part of the course suggested by the Railway and Engineering Review [viz, the theoretical following the practical].

A general auditor counsels a college course before entering the auditing office. The consensus of practical men is for the theoretical first and the practical later, where they are separated. It is noticeable that the courses of sons of railroad managers are directed along this line, as witness the sons of the presidents of the Cleveland, Cincinnati, Chicago and St. Louis, of the Great Northern, and of the Southern railways. The sentiment of the railway clubs, as expressed in their discussions, would seem to point to a general theoretical course first, followed by a year of practice, and then one or more graduate years. Thus the manager of the Railway Gazette, who has rare opportunity for observation, first gives his son a general theoretical education; then he puts him in an auditing office for a year, and after that puts him to his engineering specialty in the engineering school. Prof. Wade Hibbard, of the University of Minnesota, suggests the necessity for a graduate year, but says: "The graduate year is best for a man after he has had a couple of years in railroad practice. Let two years of practical work come between the technical course and the graduate year."

Where the theoretical and practical courses are simultaneous the instruction may be at the pupil's expense, or be supported by the railroad, or it may be partly supported by the railroad and a nominal charge made to the student. The work may be paid for on regular commercial basis, or it may be on the apprenticeship plan, either of no value to the railroad or of value to the railroad at the expense of the student. On the Baltimore and Ohio, under the system proposed by Dr. Barnard some years ago, the larger considerations of loyalty to the company outweighed the small cost of tuition. Concessions were made to the children of employees, half rates to those of less than five years' standing, and tuition was gratis to the children of employees who had been in the company's service more than five years.

The instruction there was a fixed part of the apprentice's training. A minimum of three hours a week was given to such instruction, and in addition if the apprentice was deficient in general qualifications he was required to attend the free night school of the city.

It is sometimes thought best to leave the instruction to the individual enterprise of the apprentice. Trade schools are established in the neighborhood, with evening classes, and the rates are actual or nominal. The work is in line of their daily duties, the instruction being adjusted to the apprenticeship perhaps more often than the apprenticeship to the course of instruction.

Under another plan which has been ably advocated, the railroads at large centers would cooperate in the establishment of a self-supporting trade school, with night classes. The instruction there given would be supervised by the railroads so as to best meet their necessities, and the work done in the evening classes would be given some recognition in the advancement of apprentices in the shop.

The Master Mechanics' Association complains of the instruction generally found that there are "as many different methods as there are schools, and a large amount of waste energy, from the fact that when the course is complete it does

not tie onto any other course for further advancement, and leaves the student's efforts suspended in the air, with little or no probability of getting credit for his labor should he desire to continue his studies in an engineering institute."

To meet the difficulty the committee commended the plan to put this instruction in relation with the institutions of higher education by selecting the instructors from their faculties. By providing several of these schools within easy radius, the instructors could take care of them on a circuit and thus make the expense merely nominal. Such a proposition from the University of Chicago and also from Purdue University has been under advisement of the Master Mechanics' Association.

OUTLINE OF SCHOOL WORK FOR SHOP APPRENTICES.

[Submitted by Prof. W. F. M. Goss, of Purdue University.]

1. *Administration.*

The administration of the school should be in the hands of local talent. It is believed that every shop which gives employment to a sufficient number of apprentices to warrant the organization of a school will have in its drafting room or office force some one or more persons capable of giving the necessary instruction. In order, however, that the instruction may be made as systematic as possible, and that its value may be recognized by institutions of standing, it is proposed that the work of local instructors be subject to the supervision of certain technical schools.

2. *Plan of supervision.*

It is probable that the cooperation of a sufficient number of the larger technical schools can be secured to insure the success of a plan of supervision involving conditions somewhat as follows:

1. A permanent committee of members of the American Railway Master Mechanics' Association on apprentice schools.
2. The selection by the committee of a number of representative schools of high standing in engineering work, each of which shall be requested by the committee to act with other institutions selected, first in organizing and afterwards in supervising the work of apprentice schools.
3. The assignment of a definite territory to each college or university cooperating, said college or university to assume the supervision of all apprentice schools which may be established within its territory.
4. If, after the system as first organized by the committee has become operative, other schools of approved standing shall express a willingness to assume a share in the supervision of the apprentice schools, such institutions may, at the discretion of the committee, be given a territory, said territory to be deducted from that previously assigned to some other institution or institutions, to the end that there may be secured the fullest cooperation of the educational institutions of the country.
5. Each college accepting the responsibilities of supervising a territory would place each apprentice school for which it is responsible in the charge of some member of its faculty, who would become responsible to the college authority for the work of the schools assigned him. For the purpose of this outline persons thus detailed will be hereafter referred to as the "college representative."
6. It would be the duty of the college representative to attend the organization of each apprentice school for the purpose of advising with the school instructor, and to assist in awakening enthusiasm among the pupils.
7. It would be his duty also to make trips of inspection to all apprentice schools under his charge at intervals of not more than three months for the purpose of examining the school as to progress made and to advise with instructors as to future work.
8. To be ready at any time to respond to the call of instructors of apprentice schools under his charge by sending them mailed directions or advice; or, in case of special need, by a special trip of inspection.
9. When any subject or subjects shall have been completed by an apprentice school, the college representative having the school in charge would conduct an examination and report results to the office of his institution. Students who successfully pass such examination shall be entitled to a certificate issued under authority of the college having jurisdiction, which certificate shall be at any

time accepted at the college by which it was issued, or by any of the other cooperating institutions, as a full credit for the line of work which it covers.

10. It would be understood and agreed that the authority of the college representative would be advisory only. He will not seek to deal with details excepting as he may be requested to do so.

11. The cooperating institutions would make no charge for the supervision, except to cover traveling expenses of the college representive.

3. *The course of study and practice.—Time, three years; two evenings a week.*

First year—Subject: Arithmetic and drawing.—Much that is usually taught under the head of arithmetic might be left out altogether or deferred until the corresponding topics are reached in algebra. The topics selected for treatment would preferably be the following: Common and decimal fractions, denominate numbers, percentage, interest, ratio, proportion, square root with applications, similar volumes, convex surface and volume of solids, metric system of weights and measures, greatest common divisor, least common multiple. Examples for practice in these topics should be taken from familiar facts of the shop and clothed in simple, everyday language. Such examples, constructed expressly for the class of men to be reached, should shun, for the most part, the stereotyped forms based upon the store and counting room.

The drawing should consist chiefly in geometrical construction, so that while the use of drafting instruments is being acquired the students may be at the same time making progress in the study of geometry. It would perhaps be well to base the work upon Spenser's Inventional Geometry, a little book well calculated to stimulate the ambitious student to do much valuable work at home.

Second year—Subjects: Algebra and machine drawing.—The mathematics of this year would consist in a thorough mastering of arithmetic and a study of algebra through quadratic equations.

The drawing should develop the principles of simple projection and give practice in machine drawing from copy and from detail of actual machines.

Third year—Subjects: Higher algebra, geometry, and drawing.—The algebra of this year would include binomial theorem, logarithms, infinite series, progressions, solution of higher numerical equations, etc., and in studying some of the elementary properties and applications of continuous numbers. During this year formal geometry should be pursued, and rigorous demonstration of geometrical truth insisted upon. Geometry thus undertaken would clarify the mind for invention, and strengthen it for logical and consecutive thinking.

The time for drawing this year should be divided between machine drawing and the solution of problems of a severe nature in projective drawing.

If the apprentices are bright and unusually quick, it is not necessary that three years be consumed in mastering these subjects. In a majority of cases, however that amount of time would be found necessary. Where either the ability or previous preparation of students will allow, this course can be extended under the direction of the college representative. It is expected only that the students, with whatever preparation they may chance to have, will fall in line as rapidly as convenient, and, having made a start, will advance into the various subjects in the order indicated. A year's work, as here defined, may, in some cases, require two years, or in others may be done in six months.

Prof. I. H. Howerth, on the part of the University of Chicago, submitted the following proposition:

If the Master Mechanics' Association, through responsible parties, will assume the entire responsibility of organizing classes, providing rooms, furnishing free transportation, and the expense of board for the instructor, and will agree to furnish at least three circuits of six centers each, each center to take a course of twelve evening lectures at the price of $50 for each course, the university will provide a competent instructor and direct the work. Assuming that each class is limited to 30 members, and that it would bear the expense of board for the instructor, and estimating that expense at $18, the expense to each member of the class would be $2.26⅔, or a fraction over 18 cents a lesson. This proposition, of course, involves a guarantee on the part of the roads of $900 for the first year's work.

We are anxious, if we undertake the work, that the instructor be a first-class man, and we think that such a man could hardly be secured unless we are able to guarantee a certain salary.

You will understand, of course, that it will be necessary to arrange the centers so that it will be possible for the instructor to go from one to another without spending too much of his time upon the road.

The instruction car offers still a further plan. It contemplates short, definite courses at one place at a time. The instructor is able to carry his laboratory around with him, and can seek his pupils anywhere, instead of the pupils seeking the instructor. The pecuniary value of instruction in air-brake practice has been already conceded. For the purposes of this instruction the instruction car has been found to be the best method. Many railroads have their air-brake instruction car, but perhaps the most complete is that put on the road by the Westinghouse Company. The following from the Railroad Gazette of January, 1899, as a full description of this car and the methods employed, will serve to explain the system:

THE WESTINGHOUSE AIR-BRAKE INSTRUCTION CAR.

A group of remarkably able mechanical engineers were taken into the employ of the company and a number of the most intelligent and enterprising locomotive enginemen in the country have gradually been absorbed into this service. The systematic education of railroad officers and employees has been carried on by these men by various means—by conversations and correspondence, by writing and publication, by discussions in the associations and societies, and by the air-brake instruction car, the work of which is the special topic of this paper. If a railroad accident happens which might have been the result of inefficient braking, a Westinghouse inspector is apt to appear on the ground pretty promptly, and if there was any defect in the maintenance of the brake or brake gear, or in the manipulation of the apparatus, the responsible officers of the railroad concerned will probably know it before the Westinghouse man has done with the case, although the public may never know it.

Probably the Westinghouse Air Brake Company spends $50,000 a year in work which has nothing to do directly with the manufacture and sale of air brakes or with defending its patents. This sum is expended merely to increase the efficiency of the brakes owned by the railroad companies. Naturally, this is not done for philanthropy, but the work carried on with so much ability at such cost, and with results so valuable to the railroads and the public is a fine example of the utility of "enlightened self-interest." It is perfectly safe to say that in the art of train braking we in the United States are years ahead of any other country in the world. While this is true of the apparatus itself in power and quickness, it is perhaps still more true in the widespread and accurate knowledge of the possibilities of the mechanism. Of course, the Westinghouse air brake is used largely in England, on the continent of Europe, and in the British colonies, but among all the Westinghouse equipment used abroad the percentage of the latest quick-action brake is doubtless considerably less than it is in the United States, and we suppose the "high-speed brake" is entirely unknown in foreign practice. Furthermore, there is a large amount of passenger equipment in Great Britain (and, relatively, a smaller amount on the continent) equipped with the automatic vacuum brake, which can not be compared with the Westinghouse for all-around efficiency for fundamental mechanical reasons which we need not to go into here but which the mechanical engineer will appreciate at once.

But, as we said above, it is probable that the difference in the knowledge and skill of officers and men is greater than the difference in apparatus, when comparison is made between the United States and other countries, and this superior skill is due more to the intelligent and systematic efforts of the Westinghouse Company than to all other influences combined, and one of the most important influences in this valuable education is the instruction car, the work and equipment of which we propose to briefly describe.

The Westinghouse air-brake instruction car has been in service now for about ten years, and on November 17 the number of men who had passed through it amounted to 126,850. Mr. Hutchins, who has long been the president and principal lecturer in the faculty of this modern college of applied science, claims that his institution has more alumni than any other college in the world. Furthermore, it is a very agile sort of college, and up to November 17 of this year had traveled 58,856 miles.

The car is moved from one road to another in the order of application for its services, and remains at any one point as long as may be necessary. The course of training is excellently organized. Before the car arrives at some one point for work a list has been prepared of all the men who can be instructed at that point. This includes engine drivers, firemen, conductors, trainmen, and any others whom the officers of the railroad wish to put through the car. In fact officers' classes

are sometimes organized. These lists are written alphabetically, on well-designed blanks, on which the record of each man's attendance and performance at the air-brake college is made. At the end of his course, longer or shorter, he receives, if he is qualified, a certificate, an example of which follows:

FORM 110.

No.—— ——— ——, 189 .

The following-named employee of the ——— ——— Railroad was examined as to his knowledge of the construction and operation of the Westinghouse automatic air brake:

Name, ——— ———.

Occupation, ——— ———.

General average proficiency, ——.

Averages: 10, perfect; 8, excellent; 6, good; 4, fair; 2, poor.

Each man who receives instruction is rated, the highest rating being 10, which, Mr. Hutchins tells us, has never been attained by any man. Every employee is required to get a rating of 7 at least.

Beginning at half past 8 in the morning there is a lecture and demonstration for, let us say, engineers. Men who have been selected to attend this lecture are present in the car, and a lecturer explains all of the mechanism and its operation. This lasts for an hour and a half. This class then moves into a coach, where another man takes it and examines it for two hours. He goes thoroughly over the ground covered by the morning lecture, questioning the men to ascertain how much they have learned and to correct any misapprehensions that they may have carried away. The result of this quiz gives to each man a rating for the time that is entered on the record blank in the office of the instructor. Each of these men at a subsequent lecture and quiz may be raised to a higher rating, and it sometimes happens that a man loses rank at his second lecture. This process of lectures and examinations is continued until the men have reached a satisfactory rating, or until it is no longer practicable for them to attend the lectures.

When the one class leaves the instruction car another class enters and is lectured for an hour and a half, and then passes to another car for examination. In this way three or four lectures and as many examinations are held every day, which keeps the staff of the car pretty busy. Ordinarily there are two employees of the Westinghouse Company with the car, and they are helped in demonstrations and examinations by men detailed from the railroad on which they are at work. In this way 80 or 100 or 125 men are handled in a day. The men detailed from the railroad to help in the car are carefully selected and are assigned to the car during its stay on the road, which may be three months or one year. After this experience these men are, as a rule, used to carry on for the railroad company the work begun on the car.

By the help of sections of apparatus the men are instructed in the details of the mechanism of pumps, the engineer's valve, the triple valve, the brake cylinders, the air signal apparatus, and all the parts of the air equipment. They are taught the use and care of all these; they are taught how to handle the engineer's valve in emergency and in service stops, and why it should be handled as they are taught to handle it. They learn not only how they can make a smooth and accurate station stop, but why by certain manipulation they can do this. They are taught also the art of handling the air whistle signal, which in itself is not so simple a matter as the man who never has tried it may think. They are taught that if the pulls on the whistle cord are not properly spaced the blasts in the cab will run together and the signal will have no meaning or wrong meaning, and the reason why these things happen is made clear. In fact, the most minute details of operation are gone into.

The direct work of this car has been done in the education of the great number of men who have passed through its lecture courses, but beyond that it has done a very important indirect work in that it has been the model for a number of instruction cars built and equipped by individual railroads for the education of their own employees. We would advise any operating railroad officer who has the opportunity to do so to visit this car during the lecture hours and see for himself the admirable and thorough method of training the men for the use of the air brake and the air signal. He will then realize that the business of a great brake company is not confined to the mere manufacture and sale of the apparatus.

This instruction car is very completely equipped. Steam is supplied by a Westinghouse 12-horsepower boiler carrying 130 pounds pressure, which is equipped with a Worthington pump, size 3 by 2 by 3 inches, and a Nathan No. 2 injector. A water tank is provided, with a capacity of 800 gallons, and coal storage for 1½ tons of anthracite. It often happens, however, that steam can be

taken from the plant at the station where the car may be at work. The power consists of a 5-horsepower Westinghouse engine and dynamo, and there is a storage battery of 28 cells, which serves to keep the lights going when the dynamo is not running. The car is lighted with 27 incandescent lamps, 16-candlepower, 50 volts. Air pressure is provided by two Westinghouse pumps, an 8-inch and a 9½-inch, and these pumps are shown in section as well. The main reservoir has a capacity of 30,000 cubic inches. There is a complete brake equipment for a 30-car train. This includes the full number of feet of 1¼-inch pipe, also hose connections, angle cocks and cut-out cocks, triple valves, auxiliary reservoirs, and brake cylinders. Air-pressure gauges are connected to the cylinders and auxiliaries, and convenient means are provided for cutting in any required number of cars. There are also an 8-inch and a 10-inch brake cylinder, with stirrups on the pistons to demonstrate the results of variation in piston travel and for other experiments. Sectional models are provided of brake valves, triple valves, cylinders, and, in fact, of all the equipment which can best be shown in this way. There is also a complete air whistle signal apparatus for a 15-car train, with the full amount of piping and all the connections. It will be seen that the equipment of this car gives a means for very clearly demonstrating the mechanical construction and the working of all the apparatus.

The circuit instructor or the instruction car are simply devices for seeking the students instead of the student seeking the instructor. It must not be overlooked that there is a very definite system of instruction going on all the time on the railroad, which is conducted by the inspectors of different departments. Thus, speaking from the standpoint of the traveling engineer in the report of their committee to the general association in 1898, which describes their duties, they say: "The traveling engineer who has not the essential qualifications to make a teacher will not be successful as a traveling engineer."

A writer in the Station Agent of September, 1898, writes of the traveling auditor:

We here see clearly how largely his function is that of instructor. Beginning with the one definite duty for the auditor, to check the agent, to install or transfer him, to watch him tirelessly, if necessary, to do the most aggressive detective work, to accumulate evidence against him, to initiate criminal proceedings and take every precaution that the guilty man does not escape, he passes over by natural sequence to the office of inspector, instructor, confidant, and helper through the whole cycle of his duties.

Thus by easy stages we pass over to another form of instruction in the notion of discipline as defined by the American Society of Railroad Superintendents in 1897:

Discipline, as applied to railway service, is that method of education, government, instruction, which causes and maintains efficiency and loyalty. On a railway, under a system of discipline administered by the officer, the officer is the teacher and in a sense the leader, and the employees are the disciples under discipline.

Referring to the usual notion of discipline, the report of the committee to the association says:

The word discipline is primarily defined as education, government, instruction. It is not believed to be the generally accepted idea of discipline on railways that it is primarily educational. We believe that the general idea is that it is punitive instead. Is not discipline generally applied more with the idea of punishing the offender than to educate him, the educational feature being lost sight of too frequently by the railway officer who is the teacher?

From the standpoint that discipline and instruction are essentially the same thing, and that therefore the methods and spirit of both are one, the report proceeds:

In American railway practice to-day there are two distinct methods of application of discipline. The one, which educates by laws and regulations issued in the form of books of rules, time-tables, special instructions, and the oral opinions of the officer, and thence by the exercise of authority in the form of reprimand, fines, suspensions, and dismissal, including a record of same. The other, which adds to the educational feature record bulletins of occurrences and decisions

relating thereto, which are posted for the information of all concerned, and eliminating from its feature of government fines and suspensions and substituting therefor a system of record, where the deeds of the employee, whether good or bad, are recorded. The former is the original method, and up to a few years ago generally in use. The latter is known as the Fall Brook method, which has been recently adopted, with varying modifications, by lines aggregating 23 per cent of the 180,000 miles of railway lines in the United States.

The Fall Brook system is related to education because it enforces the principle of selection, dealing directly with the individual. The premium system employs the same principle, but not to the same extent. As stated by a writer in the Railroad Gazette of January, 1898, "The payment of premiums, recognizing the difference between excellent work and that which is only ordinary, is a means of meeting one of the most vicious principles of organization, that would put all men on one level, regardless of ability, pluck, or thrift." But the difference between the different levels is only the amount of the premiums, whereas in the Fall Brook system it may be the whole range of promotion and the certainty of tenure as against gradual expulsion from the service.

The correspondence school supplies the need of instruction where the instructor and the instructed can not come into personal contact. Where wisely conducted, in connection with the duties that are in the line of the studies, it has large possibilities. It is entirely elastic and has many of the advantages of personal instruction. So far as this elasticity adapts it to conditions that can not be changed it is advantageous. It nowhere takes the place of the regular school, but it wonderfully facilitates, directs, and makes effective the efforts of the self-making man. If the methods of education are nothing more than an elaborate system of selective processes, tending to develop each power to its largest growth, and each man to his largest fitness and efficiency, the correspondence school is no insignificant factor. It continues his education after the boy has taken up his work at the bench or in the office.

The effect of any environment or situation, however well chosen, is to direct a man's mental development along one or more lines more or less confined. By the correspondence school he may be enabled to look out broadly upon other lines of effort, and, if his vocation is unfitted to him, to make a change without violence to himself, but especially to fit himself for higher grades of the same kind of work. In testimony to the value of work done in this way we quote Mr. H. F. Ball, general car inspector Lake Shore and Michigan Southern Railroad: "A good theoretical mechanical education can be obtained at little cost by taking a course in one of the correspondence schools if a man has the necessary perseverance to carry him through."

The method of instruction is best given in the words of the school itself. The following is from the circular of the International Correspondence School, at Scranton, Pa.:

The method of instruction in such subjects as can be taught without the use of apparatus or instruments is as follows:

The instruction papers which are the text-books for our students are printed pamphlets or books of 30 to 150 pages, and are accompanied by question papers.

When a student enrolls he receives the first two sets of instruction and question papers. Accompanying these are printed instructions telling him what his class letter and number is, how to proceed with his work, and how to study. After reading these instructions the student studies his first instruction paper. The first subject is either arithmetic or drawing, but whichever it is it is commenced at the very beginning, on the assumption that the student knows nothing of it, and the ground is covered in the clearest and most concise language. Usually the first subject is arithmetic.

After having mastered the first instruction paper, the student lays it aside and takes up his question paper (which contains many practical problems), and answers in turn every question, upon sheets of foolscap, writing on one side of the paper only; he then puts his work in an addressed envelope (which is provided for the purpose) and mails it.

When a set of answers is received by the school it is examined with the utmost care; all errors are corrected in red ink, and the work is returned with such suggestions and criticisms as enable the student to understand the subject. Every mistake is pointed out and everything fully explained.

The instructors take pains to make the student feel that the comments made are for his best interests. Experience has shown that written criticisms make more lasting impressions than verbal ones.

A percentage mark is given according to merit. If the paper does not deserve 90 per cent, the student is required to rewrite the incorrect part until he satisfies the instructor that he understands it. If necessary, additional work is given him. The student is kept at the subject until he has learned it.

When students do not receive 90 per cent, which is not often, the trouble is almost always traceable to their failure to study the instruction papers carefully. The instruction papers are so plain that any who will study them as directed can understand them, and so complete that any who understand them can readily answer all the questions asked.

When the student mails his work on question paper No. 1 he commences the study of instruction paper No. 2, and proceeds with it as with the previous paper.

When he has gained a passing mark in question paper No. 1 his work is returned to him to keep, and at the same time instruction paper No. 3 and question paper No. 3 are sent him.

When he receives No. 3 papers he lays them aside until he has finished No. 2. When he mails his work on No. 2 he takes up No. 3, and when his work on No. 2 is returned to him he is sent No. 4 papers, and so on. By this system he has always a set of papers on hand to study while the work on the other set is going through the mails.

When a student meets with difficulty in understanding anything in the papers the instructors of the school come to his assistance through the mails.

For this purpose each student is furnished by the school, free of charge, with addressed envelopes and information blanks.

When the student has given a subject a thorough trial and can not understand it, all he has to do is to state his difficulty on one of these blanks, and mail it.

When this is received the instructor answers it by return mail. He explains fully, if it requires a dozen sheets of paper to do so.

We would rather have a student write to us for explanations every day than to fail to understand a principle or anything treated of in the instruction paper.

In addition to the instruction and question papers furnished to him to study from, the student receives when he enrolls, and without extra charge (except for expressage or freight), a complete set of bound volumes of all the instruction papers, question papers, keys, etc., used in the said course of instruction, together with the tables belonging thereto and an abstract of all the formulas used in the course—all fully indexed, and bound in half leather.

The instruction and question papers are the only text-books the student requires. They become his property, and are not returned to us.

We pay all postage in sending all other books, papers, or communications to the students. They pay the postage on their mail to us.

When a man has completed a course he must pass a final examination before he is given a diploma or certificate of proficiency.

The records kept are very full. They form a complete school history of the student from his enrollment until he receives his diploma.

They contain not only the percentages given upon each plate and question paper, but such details of his work as to enable us to form an accurate opinion of his ability and status as a student.

As samples of some of the courses offered that bear on railway work, the following are selected from their catalogue:

Locomotive running scholarship.—Subjects taught: Technical division, locomotive boilers, steam, cylinders, and valve gears, management of locomotives, the air brake.

This course is intended for locomotive engineers and firemen only. Our efforts in preparing it have been to present just the knowledge needed. It is not intended for those who wish an elaborate theoretical knowledge of locomotive running, but is intended to be a practical aid to those who sit in the cab.

The subjects are treated fully and clearly throughout. Matters relating to valve motions and gears have been given special care. The construction and operation of compound locomotives is given the same pains in preparation. In the paper on air brakes we think we present the subject better than has heretofore been attempted. New drawings of the parts have been made; we mention the

9½" pump, the engineer's brake valve, and the triple valves as being more clearly described and illustrated than in any other work. The high-speed air brake is given the attention it deserves as one of the most important factors in running at the high speeds maintained on many of the prominent railroads.

Complete locomotive scholarship.—Subjects taught: Preparatory division, arithmetic; intermediate division, formulas, mensuration; advanced division, mechanics; drawing division, geometrical drawing, mechanical drawing (locomotive division); technical division, steam and steam engines, locomotives, dynamos and motors, locomotive boilers, steam, cylinders, and valve gears, management of locomotives, the air brake.

This course is a combination of the locomotive engineers' scholarship and the locomotive running scholarship. The engineer or fireman who wishes to understand the theoretical design and the detailed construction, as well as the manipulation and care of the machine on the road, will find this course well adapted to his needs.

Complete mechanical scholarship.—Subjects taught: Preparatory division, arithmetic; intermediate division, algebra, logarithms, geometry and trigonometry; advanced division, elementary mechanics, hydromechanics, pneumatics, heat; drawing division, geometrical drawing, mechanical drawing (mechanical division); technical division, steam and steam engines, strength of materials, applied mechanics, steam boilers, machine design, dynamos and motors.

Those who will be most likely to be interested in this scholarship are machinists, machine-shop laborers, inventors and designers, tool makers, rolling-mill workers, pattern makers, and draftsmen; shop foremen, superintendents, and master mechanics; manufacturers, salesmen, and inspectors of machinery and boilers; office men in establishments manufacturing machinery; mechanics of all kinds.

Railroad engineering scholarship.—Subjects taught: Preparatory division, arithmetic; intermediate division, algebra, logarithms, geometry and trigonometry; advanced division, elementary mechanics, hydromechanics, pneumatics; drawing division, geometrical drawing, mechanical drawing (bridge division); technical division, strength of materials, surveying, land surveying, mapping, railroad location, railroad construction, track work, railroad structures.

This scholarship constitutes a complete course of instruction in the survey, location, and construction of railroads, and is of great value, not only to those who contemplate becoming railroad engineers, but to those already engaged in the practice of civil engineering.

Telegraphy scholarship.—Subjects taught: Preparatory division, arithmetic; intermediate division, mensuration, elementary algebra and trigonometric functions; advanced division, elementary mechanics; technical division, principles of electricity and magnetism, electrical measurements, batteries, telegraphy.

The object of the above course in technical telegraphy is to make the student thoroughly acquainted with every feature of telegraph and cable work, and to qualify him to fill any position in the profession to which he may aspire. Every telegrapher will find it to his advantage to take this course.

Bridge engineering scholarship.—Subjects taught: Preparatory division, arithmetic; intermediate division, algebra, logarithms, geometry and trigonometry; advanced division, elementary mechanics, hydromechanics, pneumatics; drawing division, geometrical drawing; mechanical drawing (bridge division); technical division, elementary graphical statics, strength of materials, analysis of stresses, proportioning the material, details of construction, details, bills, and estimates.

The bridge engineering scholarship is intended for those who desire to obtain a knowledge of the principles of bridge design and construction. The course covers the general design of bridges, and at the same time enters into a fuller and more complete consideration of the designing of practical shop details than any other literature on the subject.

The scope of this kind of work is further illustrated by the courses offered by the railway correspondence school, whose work is confined to railway men.

CORRESPONDENCE INSTRUCTION FOR LOCOMOTIVE ENGINEERS.

[To fit engineers for promotion to roundhouse foreman, traveling engineer, or assistant master mechanic.]

General course and special lessons completing the first year's instruction (fifty lessons).—The principles of natural philosophy which underlie steam engineering; instruction in the proper management of locomotives to secure their most eco-

nomical and efficient operation; the best methods of boiler feeding, the best methods of using steam, explanation of the action of friction, and the objects and best methods of lubrication; illustrations of the construction and explanation of the uses of all locomotive appliances; instruction in the proper care of locomotives at terminals and on the road; treatment of breakdowns; illustration and explanation of signaling systems; management of men.

Special lessons.—Fifty lessons in air-brake practice; 50 lessons in the science of mechanics; 50 lessons in mechanical drawing; 50 lessons in electricity as a motive power; 50 lessons in arithmetic; 50 lessons in grammar and composition; 50 lessons in writing, spelling, and pronunciation.

CORRESPONDENCE INSTRUCTION FOR LOCOMOTIVE FIREMEN.

[To fit firemen for promotion to the post of engineer.]

General course and special lessons completing the first year's instruction (fifty lessons).—The proper duties of firemen; the composition and combustion of coal; principles of natural philosophy which underlie steam engineering; the best methods of boiler feeding; the best methods of using steam; explanation of the action of friction, and the objects and best methods of lubrication; illustrations of the construction and explanation of the uses and operation of all locomotive appliances; treatment of break downs; illustrations and explanation of signaling systems.

Special lessons.—Fifty lessons in air-brake practice; 50 lessons in the science of mechanics; 50 lessons in mechanical drawing; 50 lessons in electricity as a motive power; 50 lessons in arithmetic; 50 lessons in grammar and composition; 50 lessons in writing, spelling, and pronunciation.

CORRESPONDENCE INSTRUCTION FOR RAILWAY MECHANICS.

General courses and special lessons completing the first year's instruction.

First general course—natural philosophy (fifty lessons).—Heat, the source of power. Steam, its formation and properties. Coal, its formation, composition, and combustion. Steam engines, a résumé of their history. Matter, and its properties. Mechanics, the laws of motion; gravity, its laws and actions. Mechanical powers, the lever and pulley, the wheel and axle, the inclined plane, the wedge, the screw. Hydrostatics, hydraulics, the nature, properties, and effects of water at rest and in motion. Pneumatics, the nature, properties, and effects of air. Friction and lubrication. Friction of fluids.

Second general course—locomotive construction and maintenance (fifty lessons).—Locomotives, types and details of construction. Modern shop tools, their proper care and speeds. Modern shop appliances and practices. All locomotive appliances, their construction, operation, and maintenance. The air brake, its history, construction, diseases, and maintenance.

Third general course—economic locomotive management (fifty lessons).—Firing locomotives; advantages and disadvantages of different methods. Boiler feeding; great importance of correct methods of boiler feeding as affecting fuel consumption and the preservation of boilers. Use of steam; advantages of high pressures and early cut-offs; cylinder condensation; effects of lowering rates of combustion; advantages of close notched reverse-lever quadrants. Duties of enginemen; respective duties of engineers and firemen. Care of locomotives at terminals; proper methods of "firing-up;" importance of having the fire cover the grates; importance and methods of preventing the rapid cooling of boilers; utilization of surplus steam. Those who affect locomotive fuel consumption.

Fourth general course—car and locomotive standards (fifty lessons).—Car equipment standards; résumé of the work on car equipment details by the thirty-three annual conventions of the Master Car Builders' Association; illustrations of car equipment standards. Locomotive equipment standards; résumé of the work on locomotive equipment details by the thirty-two annual conventions of the American Railway Master Mechanics' Association; illustrations of locomotive equipment standards.

Special lessons.—Fifty lessons in mechanical drawing; 50 lessons in electricity, its nature, uses, and effects; 50 lessons in arithmetic; 50 lessons in grammar; 50 lessons in writing, spelling, and pronunciation.

CORRESPONDENCE INSTRUCTION FOR TRAINMEN.

[To instruct trainmen in the proper performance of their duties and the care of equipment and fit them for promotion.]

First general course — train movements (forty lessons).— General duties of trainmen; special duties of yardmen; special duties of freight brakemen; special duties of passenger brakemen; general duties of conductors; special duties of freight conductors; special duties of passenger conductors; special duties of train baggagemen; rules for the movement of trains by time-table; rules for the movement of trains by special orders.

Second general course—care of equipment and appliances.— The air brake: its history, construction, operation, disorders, and proper treatment. Cars and locomotives; describing and illustrating different types and details of construction; names of details; treatment of breakdowns. Courtesy to patrons; the effects of discourtesy. Heating and ventilation of coaches; composition of air; injurious effects of foul air; discomfort of passengers; proper temperature of coaches; heating arrangements (stoves, steam, and electrical apparatus) and their proper use and care; ventilating arrangements and their proper use and care. Illuminating appliances; oil, gas, and electric lamps; their proper care and treatment.

Special lessons.—Forty lessons in electricity, its nature, uses, and effects; 40 lessons in arithmetic; 40 lessons in English grammar; 40 lessons in writing, spelling, and pronunciation.

CORRESPONDENCE INSTRUCTION FOR TRACKMEN.

(In course of immediate preparation.)

The whole question of successful theoretical courses while the student is at regular work largely reduces to a matter of stimulus and careful direction. There must be quick recognition of the individual employee's excellence that shall put a premium on his extraordinary efforts. There must also be some relation established between the foreman of the shop or chief clerk of the office, so that instruction shall become supplementary to the experience of the regular work. The immense educational opportunity of the experience of daily duties, when united with the proper theoretical training, is obvious to anyone. Many young men are seeking to make use of it. Referring to this, Mr. Mackenzie, superintendent of motive power of the New York, Chicago and St. Louis Railroad says: "The tendency to educate boys after they have entered the service by the night schools, drawing rooms, and testing departments opens up the possibility to all who have the liking to make them fitted for any position in the railway service."

APPRENTICESHIP.

Apprenticeship is generally thought of as a method of education, but it is doubtful if the educational feature has at all times been the most prominent one. It has passed through many stages. At the time of the guilds of the Middle Ages it may have been an essential institution in the uncertain conditions of industry in which it originated. But it soon took on a form of monopoly, which in England, confirmed by the statutes of Elizabeth, became most oppressive. Originating under the guise of an educational institution, it came to be principally a bar to restrict entrance upon a trade and preserve the monopoly of that trade intact quite as much as a means of qualifying men for a trade. Although it flourished for so long, it yet never was entirely congenial to the temper of English institutions, as the utterances from the bench bore witness. Adam Smith used some of his most spirited arguments against it to expose its errors. As it then stood, no man could legally prosecute a trade without having previously served his time, which was always out of all proportion to the necessities of mere instruction. Early in the present century the compulsory feature, as a means of preserving a monopoly, was abolished in England. This feature never got a firm hold in this country.

But as a means of qualifying for a trade its advantages could not at once be denied, and it continued as a general practice, but under conditions less severe. However, with the growth of great industrial enterprises revolutionizing the form of industry and abolishing the servant and master, there were evolved new conditions. The rapid progress of division of labor, with the introduction of machinery, broke down the carefully drawn lines between trades and bewildered the old journeyman. The corporation had succeeded to the master. The old legal indenture of apprenticeship in railway work gave way to a loose form of contract that was not designed to have any binding force except in relieving the railroad from embarrassments that might arise in dealing with a minor. In time it fell into little more than a form of registry, and in this form it has almost invariably been confined to its traditional place, which is the mechanical department.

Any apprenticeship contemplates a definite end or goal. In entering upon such a diversified service as that of a railroad, with all grades of skill and ability of every kind, no one man can compass the whole. There will be orders of skill that are entirely useful in their place but that can never be equal to the demands of higher grades of service. In a general way it is said that any order of skill that is fit for a higher position is fitted for all subordinate stages. But in the case of the railroad this can not be so. The different kinds of skill are so many that they do not all advance by progression along one line, nor can they be said to converge on one particular point. The superintendent of tests could as well be in a large manufacturing establishment, the lawyer in other corporation practice.

It is possible there is not as full appreciation of this principle as it deserves. There is a certain theory that an individual can be thrown into the mass and by law of the survival of the fittest, without any facilitation, he will fall into his place.

Whatever is the final goal, although it be wrongly chosen, very often it is better that the course of movement be trained on it than that all be by accident.

Apprenticeship, therefore, as it is understood to-day, would seem to be the selection of men with reference to their capacity for a certain and definite ultimate fitness and the movement of them along lines that bear on the ultimate object to be attained, but at a rate slightly slower than they would go if they did not do work at the same time. The old notion of apprenticeship as a thing of advantage to the master has almost altogether given way. Such value as the master or corporation now gets back is often not equivalent to the money paid. Indeed on larger roads the policy with reference to their apprentices has come to be on larger lines, and is aimed to protect the railroad against a scarcity of the skilled labor for which it has a continual demand. It may further be made serviceable in stimulating the loyalty to the company and perfecting the esprit de corps of the organization.

The pay that the apprentice gets and the considerations that pass are not with reference to one day's work, nor a year's work, or even a full term of apprenticeship possibly, but are with a view to the ultimate need of the railroad for the skilled labor which it is training. While no legal conditions are resorted to for insuring to the railroad return for the advances so far as they may exceed the value of the services received in exchange during apprenticeship, yet the employee is generally bound by so many considerations of loyalty, local and family interests, that he is practically a fixture.

It is very clear that to accomplish any definite point we must bear down steadily upon it by carefully determined stages of successive fitness. But in the lines of any particular work the question arises, Shall we separate the party to be instructed from the body of the men? One practice is to put the man to be taught right in with the men in the ordinary work under the ordinary foremen; the other is perhaps to put him at the ordinary work but under a specially

selected foreman who has certain fitness for instruction, and has a responsibility for turning out a high class of apprentices. In the shop perhaps the latter plan has no chance because there are so many foremen and different kinds of work, but in the roadway department he can be put under a foreman of a floating gang and carried through all parts of the work, earning his pay at the same time. It is largely the question of the "awkward squad" that is turned over to the sergeant of the military company.

Time must always be an essential element in any scheme of apprenticeship. But, perhaps, it is that element which most depends on the personal equation of the individual apprentice, and can least be put down as an unchangeable, rigid quantity. In the older days of apprenticeship, it came to be more useful as a bar to keep down the number of entrants to a trade and to reduce the competition than a means essential in training the crude boy. Says Mr. Quayle, superintendent of motive power of the Chicago and Northwestern:

> I do not believe in holding one boy back because another boy is stupid. If I prescribe a certain length of time that a boy shall stay on a certain tool, and I find that that boy can do just twice as much work and has twice as much intelligence as some other boy, I do not think it is right because I have some fixed rule, that he should remain there. I think the boy ought to be pushed ahead as fast as he is capable of going. I do not believe that you or I would like it in our business. I do not believe you would like to be promoted on that scale because somebody is in the shop who claims seniority over you, that you ought to be held back because he is an older man, or because you have some fixed rule that can not go beyond that point.

Not only do the individuals differ, but the nature of the work and the skill to be acquired may very measurably change and a rigidly prescribed time specified for each detail would be most unfortunate.

Up to a certain point time is an unconsidered element to the interested learner; but if he has held to it after it has ceased to be essential, it then becomes a burden and dulls his faculties. Unfortunately in lack of a better measure throughout all apprenticeship there is the disposition to lay too great stress on time as the measure of acquired ability, when too often it has acted each succeeding year to produce the opposite effect. The whole mental process has settled down to a narrow groove from which with each added year it is more hopelessly unable to get out.

So long as time is the incident and not the object of the instruction, it is within bounds. It may go further and be the object far enough to effect that saturating process of thorough familiarity and unconscious use; but after that, which is necessarily a very indefinite point, its usefulness has ceased.

The great expansion of this country's industries, the consequent lack of settled conditions, and the unrest and change among workmen, has made the rigid apprenticeship an unpopular thing. The legal status of the apprentice has long since practically ceased to exist, and the shops in turn have not often adopted a settled form of handling apprentices. Employers could not hold their apprentices for a definite term, and the grade of skill suffered much. Shops have developed a set of "helpers" who have never had any regular training.

To meet the difficulty there has been adopted a plan among the mechanics of Cincinnati, which has sometimes been called the American system of apprenticeship. It involves the notion of a loose system, of a trade school and shop course combined. The standard is largely maintained by the trade school, and the work is had at different shops. The employee can go as fast as he pleases in the school and also in the shop, but must present credentials and must be examined from time to time. The standard is maintained by the school curriculum and the examination, supplemented by the shop work, which may be under any or several different mechanics

Graded apprenticeship, sometimes called preferred apprenticeship, is found on some roads. The theory of the special or "preferred" apprentice is that he has more ability and is therefore trained for larger responsibilities than the ordinary apprentice. Perhaps he has had a better mental development and perhaps he has had a technological course. He begins at the same work as the ordinary apprentice and does it in the same way, but he is moved on more rapidly. Perhaps he is not required to reach the skill of mechanical habit to such degree in each kind of work done as the ordinary apprentice or the workman.

Railroads do not readily take to the idea of a special apprentice. But the Pennsylvania has long had a system of preferred apprentices at its Altoona shops. With few exceptions all of their present higher officials have had their education there. They are registered at headquarters at the office of the general manager and a special record and report is made of their progress. On entering they must have a diploma from some recognized technological school. There are certain prescribed parts to the course of movement, such as firing the engine for a definite period, but for the most part the course is left to the discretion of the local officer.

In the roadway department a system of preferred apprentices was set up on a division of the Southern Pacific in 1894. The engineer of maintenance thus outlined his plan:

We propose to establish on the line of the Southern Pacific a system of apprenticeship in the track department, the plan being to furnish employment for about a dozen young engineers in the capacity of track walkers. The duties of a track walker are to pass over certain portions of the road (from 3 to 10 miles each day), to keep tight the bolts and to report any defects in the track which he can not repair. He has to lend a hand with tools when necessary and to assist in general section work when not on his daily walk. The track walker is regarded as an assistant foreman, and we propose to pay these young men $1.85 per day. Such as are worthy will be promoted in the proper time to section foremanships and will be given preference for promotion to vacant roadmasterships or assistant engineerships in the track department when qualified for such positions.

Our idea is that in this way we shall not only secure roadmasters (and perhaps superintendents) thoroughly versed in the construction of the road and its maintenance, but will also furnish the engineering department with assistant engineers who know practically, as well as theoretically, all the features of this department. The work will, of course, be hard and we do not hope to have all who undertake it follow the lines laid down, but that out of a dozen we may secure three or four who will remain with us until they can reap the reward of their apprenticeship.

You will see, therefore, that this is no place for society men or young men who expect to be chief engineers within a few months, but that there is an opening for those who really wish for advancement in the railroad service. Our experience has taught us there are very few of the large number of engineers applying for positions who are of any service beyond the mere instrumental service in their professions. I hope that the idea may strike you as a good one and that you will assist us in procuring these young men when needed.

Prof. J. C. Nagle, of the Agricultural and Mechanical College of Texas, referring to this in the Railway and Engineering News of February 11, 1899, says:

My civil-engineering students took kindly to the proposition from the first and there were more applications than openings. Those who were accepted went to work as section hands and were assigned to sections in western Texas, where they worked side by side with Mexican laborers. If I am not mistaken they were paid $1.50 per day at first instead of $1.85, as was originally intended. As opportunity offered they were transferred from one position to another, so that they might become thoroughly conversant with all branches of the work, and, so far as I have heard, they all remained with the road in spite of the hardships encountered.

When Mr. Cushing, the engineer in charge, was called later to another road, evidently for lack of an aggressive support, the system was abandoned. Referring to what was accomplished, he writes:

I obtained permission to inaugurate the system and placed four young engineers on the road as laborers, from which position they, by their own merits, worked out their own promotions, and three of the four became section foremen. One is

the foreman of a large extra gang and is giving the best of satisfaction; two others are still working as foremen and giving satisfaction, while the fourth, by his own merit and attention to business, attracted the attention of a large contractor, who offered him a position far more remunerative than he could hope to have for some time, hence he left the service. Thus you see that as far as the experiment went it was eminently a success, but a move of this kind will always meet with opposition from certain sources, and these young men labored under serious disadvantages, and the extent of the opposition was such that the plan is no longer carried on in the maintenance of the way department. I have never changed my opinion—that such a training as this, based on a thorough technical education, was the best qualification for responsible positions in the railroad service.

I found no trouble in obtaining young men ready and anxious to work in these humble positions when they felt that they had assurance of promotion should their work merit it. Furthermore, I have always found that engineering graduates are anxious and willing to work in subordinate positions in engineering corps and that they give better satisfaction, as a general thing, than the other men employed in this capacity.

If any experiments have been tried elsewhere along this line I should be glad to learn of their results.

In Dr. Barnard's plan on the Baltimore and Ohio, where there was contemplated a course of instruction at the same time, the apprenticeship was still further divided into three grades. They were called, respectively, the ordinary apprentice, the cadet, and the cadet officer. The differences were largely emphasized by the differing amounts of theoretical instruction required in the parallel work in the shop school.

The idea of formal apprenticeship for the most part has been confined to the mechanical department. In some few cases it has extended to the roadway department. On the Pennsylvania there has been set up a standard of entrance qualifications in the accounting department and certain general rules of promotion that approximate an apprentice system. But with these exceptions we do not know of any apprenticeship existing in any other department than the mechanical. On all roads there may be found men who are irregularly given special opportunities to learn, by flexibility in the lines of movement and frequent promotions. But when their preference is a matter of personal favor it can hardly be called part of a regular apprentice system.

Apprenticeship in the roadway department.—The committee of the Roadmasters' Association of America, appointed to report on the best method of instructing section laborers with a view to promotion to foremen, submitted the following (1890):

In view of the extremely low wages paid to track men generally in comparison with that of men in all other departments of railroad service, while the qualifications of a good track man are those of a first-class mechanic, it is desirable to overcome, if possible, this discouraging influence in some manner, so as to secure more proficient foremen.

Apprentice gangs have proved successful on some roads in the Southern States as a means of encouraging a better element of labor to become track men. This want is felt in the railroads in the Northern States, but they require to as great extent some system of encouragement, so that the suitable men will continue in the track service, and thus create more efficient track laborers and foremen. It is self-evident that this encouragement must be bestowed locally, so that its influence may be felt in every gang on the road, whereas it is apparent that an apprentice gang centralizes this encouraging influence and would be detrimental to the majority of railroads.

We believe that, to meet both the cases, the following system will be found quite available:

First. That there shall be an assistant foreman on each section and floating gang, and, if at all possible, selected from men who are laborers on the sections, floating gangs, and repair or construction trains.

Second. That the assistant foreman shall be appointed and discharged by the foreman.

Third. The assistant foreman shall work with the laborers except when the

foreman finds it necessary to leave the gang, then the assistant foreman shall have charge during the absence of the foreman.

Fourth. Should the assistant foreman be found at any time incompetent or unfit he shall be reduced to a laborer or discharged and another assistant foreman appointed in his stead.

Fifth. The assistant foreman shall be paid an increased rate of pay beyond that paid for laborers, according to his qualifications.

Sixth. When a vacancy occurs in the foremanship, from whatever cause, the assistant foreman shall fill the position until a foreman is duly appointed.

The discussion brought out other methods of apprenticeship. One plan, which was in force on one of the roads represented at the convention, was described by its road master as follows:

I have an apprentice-gang foreman. He is a man above the ordinary ability and intelligence. He is thoroughly conversant with all departments of repair work. In his hands and under his control are placed these young men; they are given special instructions in all the various branches of their work. That instruction applies to all as well as to one; it is uniform; it is the same. They go out with the same ideas. They are able to carry out the ideas of the road master and management better than if placed under the charge of a number of irresponsible foremen.

Under the system as reported by the committee on our road we had difficulty in securing good men. We found one cause of that difficulty was jealousy of the foremen. They would not give these young men the opportunity that was necessary to make them thoroughly competent foremen. One of the young men gave me his experience. He said whenever the foreman went to raise the track—and I will state that the foreman in charge of the gang was a man trusted by the management—that foreman would send him off to do some other work and would raise the track himself, and that young man never did learn how to raise track until he took personal charge of a gang and learned it from one of the hands. It is not so under the apprentice-gang system. They are required to learn every branch of the work which they may be expected to superintend afterwards.

Under the old system a foreman is placed, perhaps, on one part of the road where the conditions are entirely different from what they are on another part of the road. If these young men are scattered over different parts of the road some of them will learn one thing, perhaps proficiently, but may never learn other things of equal importance. But if they are placed in one gang and are located at a point where there are the largest number of conditions possible the greater will be the benefit derived. For instance, the gang which I employ for that purpose has charge of a few miles of main-line track. They have charge of a yard where they have to put in and maintain all kinds of frogs and switches—the Wharton switch, the split switch, switch crossings, and various kinds of spring and stiff frogs and crossings. They are required to build new tracks and do a great variety of work. We also use them for going out to wrecks. We divide the gang in two parts, and in case of a wreck, or accident, or washout one part of the gang is sent out and a chance is given them to see how such work is done.

The gang is composed of 30 men. These men are also given instructions in making reports. We all recognize the fact that reports are a very important part of railroad work. Records we must have in order to know how to economize in railroad work. Reports are kept by that gang, and every man who goes out has the necessary experience in keeping records and making reports accurately. We have him under our eye and know exactly his qualifications. I do not have to depend on discharged or disaffected men from other roads for foremen. We could not be with these men if they were scattered all over the road; we could not talk with them and learn their qualifications, and thus we would be unable to discard or avoid getting into our ranks unsuccessful foremen, whose incompetency is not discovered until we have lost money by them. We sift out the chaff and preserve the wheat.

THE MECHANICAL DEPARTMENT APPRENTICE.—REPORT ON THE APPRENTICE BOY.

[American Railway Master Mechanics' Association, June, 1896]

Your committee believe the necessity of the times changes the environment of the apprentice as well as the mechanic. With the passing of the small shop with a few boys, bound under written agreements and bonds signed with legal formality, there must be a new era for the apprentice.

1. Is the ancient and time-honored method of training apprentices falling into disuse by reason of the modern methods of shop organization?

We see with the modern corporations a breaking down of the old method of shop organization, suitable for the fathers and grandfathers, but no longer suitable for progressive organization. While in the past it may have been possible to hold a boy bound under agreements, such methods do not answer with great corporations such as our railroads are fast becoming, extending through several States, with their aggregation of shop employees gathered from the heart of great cities, from the suburban districts, and sometimes from small villages which are almost dependent on the corporation for their existence, the bond gives way to a comity. The boy is taught fidelity, and is given examples in the principles of loyalty, and the time is fast approaching when the young man will feel a loyalty to the corporation second only to the state or church. To bring about this is the duty of men handling large bodies of workmen.

Your committee, with a view of learning what could be done to improve and systematize the technical training of the apprentice, got into communication with several educational institutions and sent out circulars asking a series of questions.

2. Will the shopman of the future be simply an operative? Has evolution evolved a handy man who has come to stay, in the form of a skilled laborer, standing between the mechanic and the laborer?

To the question "Will the shopman of the future be simply an operative, and has evolution evolved a handy man who has come to stay, in the form of a skilled laborer, standing between the mechanic and common laborer?" to the first part of the question there are a large number of replies in the affirmative, yet a majority think there will always be a large field for the skilled mechanic, and belief that the handy man and special tool man has come to stay is very general, and they should be recognized and classed.

3. Do you think these men should be recognized as a class of skilled artisans by themselves?

To question 3 we believe Mr. Sanderson, of the Norfolk and Western, gives the best answer, and would suggest the general adoption of his suggestion, viz, to class mechanics as is the common practice in marine matters; the full-fledged mechanic might be distinguished as an able mechanic, the special tool man or skilled laborer as an ordinary mechanic.

4. Do you have a fixed ratio of apprentices to mechanics? If so, what is it?

To question 4, "Do you have a fixed ratio of apprentices to mechanics?" replies range too widely for classification. Replies indicate some large shops employ as much as 50 per cent apprentice labor, while others indicate as low as 1 per cent, but from a careful study of the replies your committee think that within the ordinary railroad shop the best results are attained with one apprentice to five able mechanics.

5. What is the ratio of skilled laborers receiving less than mechanics' wages to apprentice boys in your shop?

To the question of the ratio of skilled laborers and special tool men to able mechanics the replies indicated that such shops as carry on a large amount of manufacturing employ a larger class of this help, and the shops of the East use a larger per cent of such help than the same in the West.

6. What is your apprentice system?

To the question, "What is your apprentice system?" the replies are such that the committee believes that it would be useless for the association to recommend an apprentice system.

7. Have you a system of technical instruction for apprentices? If so, explain your methods and means of defraying expense.

To question 7, "Have you a system of technical instruction for apprentices? If so, explain your methods and means of defraying the expense of the same," the replies are gratifying in the large number of evening schools in mechanical drawing and mathematics that are conducted at various points.

8. Do you have any general instructions of a general character by lecture or reading of papers among your employees generally?

9. Do you believe your apprentice boys would take an active interest in a night school if one could be provided at a reasonable expense?

In reply to question 9, "Do you believe your apprentice boys would take an active interest in a night school if one could be provided at a reasonable expense?" replies are varied, but your committee believe much interest can be awakened by the heads of the mechanical departments taking a very little interest in the matter.

10. Do you believe an active interest could be secured in your community for a

series of six lectures or more on mechanical subjects, followed by questions and answers and a general discussion, during the winter of 1896, if the association could see its way clear to provide suitable talent on reasonable terms? The number in attendance would not necessarily have to be large, and probably could not be for a technical and scientific lecture and discussion.

In reply to question 10 we find there is quite an awakening in some sections in reference to the benefits to be gained through railroad men's Young Men's Christian Associations, but your committee would also call attention to the courses of instruction offered by the University Extension of Chicago on the lecture study plan, and believe many lecture centers could be established to include large numbers of railroad men on such subjects as general history of philosophy, development theories of rates, combination investments, speculative management, State ownership or control, financial history of the United States, Karl Marx's Political Economy, tariff history of the United States, and such other courses as they may be prepared to offer.

We would also like to call attention to the proposed organization of the Purdue Mechanics' Institute. Many of you have received circulars sent out in this cause, and it is to be hoped this movement will receive such a warm response by members residing in the central Western States as to assure its success. As it is stated in their circular, it is proposed to make the lectures valuable from a purely technical point of view, and at the same time by abundant illustrations to render them sufficiently popular to interest all who may attend.

11. Do you believe members of the American Railway Master Mechanics' Association would respond to a call from neighboring communities of railway mechanical men to read papers on some particular subject that they have given study and attention to?

In reply to question 11—to read these replies fills one with ecstacy. This association is composed of the busy men on the railways to-day, and men who have come to the front by the force of their own character, yet so many stand ready to give a helping hand to those who can be benefited by their assistance.

EXCERPTS FROM REPORT OF THE COMMITTEE ON THE APPRENTICE BOY TO THE AMERICAN ASSOCIATION OF MASTER MECHANICS, 1897.

The first question to be considered is the length of term of service which an apprentice should serve. On this subject there are two diametrically opposed views held, respectively, by those who would insist on a rigid term of service consisting of a certain number of years or months on the one hand, and on the other hand by those who believe that the length of the term should be governed entirely by the merit and ability of the individual apprentice. From reports received from the large majority of the bigger shops of this country it is evident that the more general custom is the prescribing of a definite length of service. On the other hand, what the committee will call the merit system is in force in some shops whose practice it is recognized ought to command our highest respect; also the practice in other countries is in favor of the merit system as opposed to a rigid term of service, and in the discussion in the Western Railway Club, at the May meeting, already referred to, the majority of opinions was distinctly in favor of the merit system. If a rigid term of service is fixed the very great preponderance of practice in this country is in favor of a four-year term. There are one or two cases where a three-year term is considered sufficient. The committee knows of one case where the term is fixed at five years. The four-year term, however, is almost universal. The committee believes that this term has been fixed as the result of long experience and is in accordance with good judgment. In four years a boy ought to be able to acquire a thorough training if he is a boy capable of ever becoming a mechanic. At the same time four years is not too long a time to make the average boy spend on his training.

In drawing up any shop course, therefore, it should be based on the assumption that it is to cover a period of four years. Your committee, however, does not believe that it is fair to make all boys spend precisely the same time on the same work. Any course must be more or less elastic. Boys differ largely in capacity and ambition. Moreover, the same boy will show greater aptitude for one part of his course than he will for another. While, therefore, we believe that four years should be regarded as the proper time of service, and a course should be based on that length of time, there must be left discretion in whoever has charge of the apprentices, either to permit a boy to go forward more quickly or to hold one who is slow longer than the average at a particular class of work. Your committee, however, would not by any means have this to be interpreted as meaning that the discretion of the individual in charge is to be unlimited. With

the brightest and most ambitious boy the committee would under no circumstances recommend the shortening of the term below three years. The committee does not believe that any boy ought to spend more than five years. A boy who requires five years of service to go through his course will certainly at an early age of his training show such assurance of incapacity as to make it evident that he will never make a good mechanic. In such cases the boy should be promptly sent elsewhere. The power to discharge not only in cases of misbehavior, but for the reason stated, namely, of a general incapacity in the boy, must be reserved by the railway company, and ought to be unsparingly and conscientiously used both in the interests of the shop and of the boy himself.

With this understanding the committee submits herewith a schedule of machinist apprentices which is in use on the Norfolk and Western, and which has been found very satisfactory:

Department.	Gang.	Apprenticeship course.	Time (months actually served).
Tool room		General use of tools, names, etc., work on smaller planer, drilling machine, shaper and lathes, provide tools.	6
Erecting shop	No. 1	Helping on general work	1
	No. 2	do	1
	No. 3	do	1
Machine shop		General instructions, milling machine, boring mill, horizontal machine, axle lathe, and helping in general.	3
		Boring, driving, and truck brasses, and quartering machine.	2
		Cylinder boring machine and planer	1
	Rod	Rod gang	3
		Small lathe (alone)	2
		Large slotter	1
		Brass lathe	2
		Small planer	1
		Large and small planers	2
		Driving wheel lathe	1
		Large lathe (alone)	2
		Motion lathe	1
		General vice work	3
		Surface table	3
Erecting shop	No. 1	General work	5
	No. 2	do	3
	No. 3	do	4
		Total	48

Your committee submits that as a basis for an adequate course of training in the machine shop, with the distinct understanding that it is to be qualified as to the term of service to be spent in the different items, and also in the whole course, by the quality and capacity of the individual boys, under the discretion of whoever has them in charge.

The course in the machine shops of most of the railways in the country corresponds very closely to the above schedule. In few of them, however, is the time so closely divided as in the above. The committee is well aware that there must be frequent difficulty, perhaps impossibility, in complying in detail with such a close division of time.

Referring to the suggestion that experience should be given first as boilermaker blacksmith's helper and secondly as boilermaker's helper, the committee was in accord, but would prefer to say that an apprentice should be given every possible opportunity to acquaint himself in a general way with other departments of the service, not only with other shops than his own, but with the drafting room and the storekeeper's office as well as with the transportation and the railway departments. Many apprentices will get little or no benefit from contact with other departments outside of their immediate office work, but among them there will be some who are capable of taking in a wide horizon, and these should be given the opportunity to make railroad men of themselves as well as good machinists.

Very little attention seems to have been given to the outlining of a systematic course in the blacksmith's shop. In a very large number of shops no regular apprentices are taken. If young men go in as helpers, and if they have influential friends among the mechanics, they are pushed forward and ultimately become mechanics in some haphazard way without any regular rule governing their

advance. Your committee believes that the course of training in the blacksmith's shop should be just as carefully supervised and directed as that in any other department. As a basis for a course in this shop, subject to the same modifications as suggested in the course for the machine shop, the committee begs to submit the following.

BLACKSMITH'S COURSE.

1. To start the apprentice on a bolt machine for six months. Here he will learn the rudiments of heating iron; also the setting and adjusting of dies, and at the same time by observation will learn the names of the tools and their use in that portion of the shop.
2. The next six months in operating a steam hammer. In this position he has a good opportunity to note how the blacksmiths handle and form iron; at the same time require him to help at the fires in the immediate vicinity of the hammer.
3. The next six months should be as helper on a small fire, with a man who is quick and handy with light work.
4. The next six months on a light fire, without a helper, here he will learn to handle the hammer.
5. For the next three months give him a light fire with a helper; the fire should be so located that he will be called upon to help assist in taking heats for the larger fires.
6. For the next six months on heavier work that does not require great skill.
7. For the next three months put him helping at the tool-dressing fire, and if the shop has two tool-dressing fires, the next three months on the second tool-dressing fire.
8. The next twelve months put him on a heavy fire with as much of a variety of work as can be arranged.

Much the same comments apply as to the general lack of system in case of the boiler shop. Again the committee believes that the course should be definitely marked out and carefully supervised.

As a basis for such a course, subject to the aforesaid qualifications, your committee submits the following:

BOILER-SHOP COURSE.

1. The first three months heating light rivets.
2. The next three months helping on the heavy sheet-iron work, such as wheel covers, ash pans, etc.
3. Three months holding on rivets for tank work.
4. Three months holding on rivets for boiler work.
5. Six months riveting patches, chipping and calking, and general riveting.
6. Six months setting flues.
7. Six months patching, bracing boilers, chipping and calking, and general riveting.
8. Six months blacksmithing, to learn how to make and to fit braces, to dress necessary tools, and assist in fitting up his work.
9. The fourth year to lay out flange and do general boiler work.

Your committee would also recommend a general code of rules and regulations governing the relation of the company to all apprentices on the following lines:

1. For machinist apprentices, only those who are over 16 years of age or under 20 years of age.
2. For blacksmith apprentices, those who are over 16 years of age and under 24.
3. For boiler-maker apprentices, those who are over 16 years of age and under 24.
4. All applicants for positions as apprentices must pass a creditable examination in all studies taught in the public schools up to and including the eighth, or grammar, grade.
5. Each person so employed, under the age of 21, will be obliged to furnish the company with a minor's release (on form provided for this purpose) properly executed by his parent or guardian.
6. Apprentices are subject to the shop rules and the general rules and regulations of the company, and are liable to discipline or discharge for violation of these rules.
7. Apprentices will be paid for the actual number of hours worked each day, overtime to be paid for in accordance with the rules of the company; each day's work will be regarded as but one day in the apprentice record (apprentices will not be required to work overtime during the first three years of their apprenticeship, except in special emergencies).

8. Apprentices who are working with mechanics on piecework jobs will be paid their regular hourly rates; mechanics thus assisted by apprentices on piecework jobs will be paid only the proper proportion of the piecework rate.

9. Apprentices will be given the best opportunity to learn their trades and to become good mechanics.

10. Apprentices will be expected to comply with such regulations as to attendance on night schools or other classes as the company may see fit to prescribe.

Your committee strongly recommends a careful record being kept of each apprentice by a system of merit and demerit marks, allowing a maximum number of marks for each week or month. The record should be carefully and regularly kept in a book, and while the essential thing to be considered in the marks is the application of the apprentice and the excellence of his work, his general behavior should be considered, and the maximum number of marks should not be attained by an apprentice who in any way is not well behaved, quite apart from his actual work done.

There should be a definite scale of payment per hour for the first year, and that scale should be increased yearly. This scale must perhaps necessarily vary in different parts of the country. Uniformity, however, all over the country is desirable. Your committee would suggest as an equitable scale of pay, 50 cents a day for a ten-hour day; that is, 50 cents a day for the first year and an increase of 25 cents a day for each year thereafter. For an eight-hour day, 40 cents a day at the start and 20 cents increase yearly.

The company should not assume any obligations beyond the term of apprenticeship. When the apprentice has served his course the company must be at liberty either to retain him in service and pay him journeyman's wages, according to his merit, or to let him go and seek work elsewhere.

Your committee not only believes, but insists that the charge of apprentices should be given to one particular and well-qualified person, that person to be known as foreman of apprentices, or by some such title.

In the foregoing your committee has not considered the treatment of what may be called advanced apprentices or special apprentices. Apprentices who have already been through the technical school of course need different treatment from the regular apprentices. They are entitled to a larger rate of pay also. The foreman of apprentices should have charge of both classes alike, and the same foreman should have control of the training and education of the apprentices ouside of the shop.

COURSE OF INSTRUCTION FOR APPRENTICES SUGGESTED BY COMMITTEE OF AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.

First year: Plane geometry; geometrical drawing; elementary algebra.

Second year: Solid geometry, elementary descriptive geometry; algebra continued.

Third year: Plane trigonometry; physics; mechanical drawing.

Fourth year: Heat and electricity, or mechanism of mechanics and kinematics; mechanical and free-hand drawing.

Plane and solid geometry.—A study of the usual geometrical principles as set forth in any standard text-book, as, for example, Chauvenet's; the work to be constantly reenforced by original constructive work, such as may be suggested by the daily experience in the shop, or by Spencer's Inventional Geometry.

Geometrical drawing.—Instrumental work on the drawing board in the development and solution of geometrical problems. This work should keep pace with the study of geometry, which it should supplement in every possible way, and should be made to include a sufficient number of shop problems to disclose the breadth of the subject. Careful attention should be given to the manipulation of the drawing instruments, for this is a preparation for the work of succeeding years.

Algebra.—First year: Such an amount of elementary principles as are absolutely necessary in teaching geometry, including a discussion of the equation and of its meaning, addition, subtraction, multiplication, division, and linear equations. Second year: Involution and evolution; factoring, with application to highest common factor and least common multiple; fractions and their algebraic operations; quadratic equations; systems of linear equations; ratio and proportion; theory of limits; logarithms; all principles to be enforced by practical problems, many of which should arise from conditions in the shop. Any of the many good school algebras may be used in this work.

Elements of descriptive geometry.—To be made up of problems in the development of surfaces and their intersections, the problems to come chiefly, if not

wholly, from drawings of boilers from boiler department. Some practice should also be given to isometric projection.

Plane trigonometry.—Half year. The measurement of angles, trigonometric functions, solution of triangles, trigonometric tables, and derivation of formulæ as found in any elementary text-book, to be enforced by as large a number of problems as practicable.

Elementary physics.—A study of the facts and laws of physics, chief attention being given to elementary mechanical principles, such as those included under the older term "natural philosophy." A suitable text-book would be Avery's School Physics, which contains a very clear, simple, and accurate text, with numerous illustrative experiments to be performed by the student.

Drawing.—Practice with instruments in drawing details of machines from copy and from the machines themselves; practice in lettering; original designs of simple tools or machines, or jigs, to meet certain specified requirements, which should be stated in the form of a problem for solution; during the last year of the course, instruction in free-hand drawing.

For the fourth year it is proposed to allow a choice between advanced physics and kinematics. Though both of these subjects are presented below but one should be taken by any individual student.

ADVANCED PHYSICS.

Heat.—A study of the facts and principles of heat by the use of such a book as Garnett's Heat, a work written chiefly for mechanical engineers.

Electricity and magnetism.—A study of the facts and principles, in which only elementary algebra and trigonometry are used. This course is covered in a clear and compact way by Perkins's Electricity and Magnetism.

PRINCIPLES OF MECHANISM.

Analytical study of the fundamental principles governing the transmission of motion by rolling contact, sliding contact, by belts, link work, and reduplication. Robinson's Principles of Mechanism will be found well adapted to the requirements of this course. Students selecting this subject should give a considerable portion of the time allotted to it in the development of such problems as are involved in the design of gear wheels, cams, and other elements of machine construction, in addition to the regular time allowed for machine drawing.

Every apprentice should be expected to read at least one technical paper.

The car builders' apprentice on railroads is generally given little attention, primarily, perhaps because few railroads build their own cars.

The following is the report of the committee on this subject to the Central Railroad Club:

Roads building new passenger and freight equipment should advance their apprentices about as follows: The first six months, freight-car repairs, to familiarize them with different designs and their weaknesses, the remainder of the year to new freight-car construction. The earlier portion of the second year should be devoted to repairs of passenger cars and the construction of new passenger-equipment cars and repairs to old. The fourth year should be given up to interior finish, first at the bench, getting the material in shape, and later in putting the finished work in place. By bench work I do not mean the dressing up, scraping, and sandpapering of moldings, fascia boards, etc., but the framing of partitions and such work, requiring mechanical skill both in the laying out of the work and putting it together. If the brighter ones were selected at the close of their apprenticeship to fill vacancies in the drafting office, where the work was not limited to two or three men, great benefit would be derived by some railroads where at present all car designing is being done by theoretical locomotive men.

Referring to the quality of labor generally employed by railroads in car repairs, Mr. John Mackenzie, superintendent of motive power of the New York, Chicago and St. Louis Railroad, says:

We get our car builders nowaday, I think, from the car inspector. We have not on our line any car apprentices at all. When we want somebody to do wood butchering, as we call it, we go out and hire a man that we pay $2.50 a day. I do not know of a railroad in this country, where they have a large car shop even, that has very many apprentice boys in the woodworking department.

The telegraph learner is not dignified with the status of an apprentice. For the most part he has "picked up" his art and his information without any direction or supervision. In a paper on the telegraph apprentice system to the National Association of Superintendents of Telegraph, Mr. G. C. Kinsman, of the Wabash Railroad, says:

The selection of employees for minor positions may be regarded as one of the most important questions with which the superintendents have to deal. If, in filling all unimportant places, he secures young persons of character and capacity for increased responsibility, if these employees are then so treated as to induce loyalty and a knowledge of the fact that their interests and the interests of the company are identical, the standard of efficiency will be raised and the conditions for revenue correspondingly improved.

Those who have given this subject serious thought and trial will appreciate that the ideal is not of easy accomplishment. Students in offices, messenger boys, and apprentices must serve for a time for little or no money compensation, for the reason that they can earn for the company no more than it must give in the time of its skilled labor for their proper advancement.

If this instruction is omitted or indifferently given, as will be found true in many cases, the beginners are apt to lose interest in their work and to seek associations more congenial but less honorable, and the railroad company will stand before their parents and before the community as exerting an undesirable influence.

If the selection of students and messengers is left to agents and operators, it will be found impossible to eliminate the influence of relationship, religious and political prejudice, and personal favor. These reasons alone seem to make it most imperative that the selection of employees for minor positions should, so far as possible, be placed in the hands of persons not directly interested.

My idea would be a board of not less than five officials, selected with the greatest care from the different departments, this board to hold stated meetings for the purpose of acting on applications, its secretary making investigations in accordance with its formulated rules, the heads of the departments to refer to the board for investigation and approval the applications of persons thought desirable for future employment, and to have authority to employ such persons in cases of emergency subject to the action of the board.

Gradation in Railway Education.

We can not go far in the discussion of a thorough railway education before we are confronted with the different grades of fitness within the same department to be fitted for. Special education recognizes readily the division between different kinds of work, but it is not so easy to concede the necessity for different kinds of education according to the grade of attainment to be secured.

In Europe, with its well-established castes, there is little difficulty in adjusting education to meet this necessity. They have the common apprentice's course, the foreman's course, and the manager's or engineer's course. This is very clearly defined in Russia, Germany, and, to a degree, in England. Referring to this, Mr. Walter G. Berg, who prepared the data for a consular report on technical education abroad, says: "The European governments long ago recognized the necessity for a strict distinction between professions and trades or callings. They emphasize throughout their national educational schemes the fact that an institution can not accomplish two different objects at the same time." He therefore advocates in education of railway men:

First. A clear division should be maintained between the higher and middle class of railroad men and the preliminary educational systems kept distinct and separated from each other.

Second. The higher class, offering the material from which, as a rule, the future managers, professional men, and heads of departments will be drawn, should be provided for by special railway departments at existing colleges and by adding general railway subjects to the present curriculum of the technical departments of colleges.

Third. The middle class of railroad employees, comprising young men entering the railroad service in subordinate positions of all kinds, many of whom will

some day fill a large number of responsible minor railroad positions of trust, should receive, after leaving the ordinary school course, a special short preliminary schooling adapted to the particular departmental work they expect to take up on entering a railroad shop or office. This special education will be obtained most advantageously in special railroad trade schools, to be established wherever desirable and possible throughout the country. The curriculum to consist of one-year "regular course," divided into suitable departments. Further, an "advanced course," covering a second year, for such scholars who desire and have the means and qualifications necessary to continue their studies to a more advanced point.

It is claimed that the aptitude for different grades of service is different. Fitness for the higher grades may not always include fitness for all the lower. Because men do not often move backward, it is seldom demonstrated how unfit they may be for lower positions, even sometimes when they may have previously passed through these very positions. The failure to recognize in the training of men the different grades of service to which their capacities apply results in a great amount of misdirected effort and energy. On the one hand men struggle for what their capacities unfit them to attain, and get no benefit to themselves or their employers; and on the other hand many men who have a fitness and talent for the higher grades of service are sometimes held back by work for which they have no fitness simply because it lies in line to that for which they have capacity. Efficient organization, no less than education, is essentially a process of selection and adaptation. The standpoint of the one is the work to be done; the standpoint of the other is the man to be trained. So far as organization does not facilitate to the uttermost the principle of selection, it is inefficient.

But while theoretically the European system may be a good thing, it has serious defects which can not be too greatly emphasized. The proposition to do a definite thing and to use each kind of material just in that part of the structure where it best serves is very attractive, but it rests on the assumption that this selection can be made with certainty, and because of this certainty, when once made it is irrevocable. And even granting that this assumption is correct, we have placed our men within well-defined lines which they clearly see they can not pass. We have taken away their native spring to give certainty to the work of each part of the organization. The great strength of an industrial nation is in their ability to devise and originate. It is conspicuous of Americans in manufactures, in commerce, in war, in every department of activity. Any system that imposes a rigid gradation, although set up on an impartial basis, among men of differing fitness, which is a great assumption, is claimed by some to be full of menace.

There would seem to be a median system, and that is suggested by the excellent scheme of instruction outlined by Dr. Barnard on the Baltimore and Ohio Railroad some years ago. In that, provision was made for three grades of fitness, but he did not make the lines between them so rigid that one could not easily cross them.

The importance of flexibility in any scheme either of education or organization can not be too greatly emphasized. The great ideas in any line seldom come from those who are given to thought in that particular line habitually. Inventors and originators are those who get chance views of things.

General Educational Agencies of Railroads.

For general education the railroad has extraordinary opportunities to throw around its employees the environment of, and general stimulus to, thrift, temperance, manliness, culture, and refinement, as few agencies ever had. For thrift one of the means resorted to is the superannuation, death, or disability insurance. Most companies will collect the premiums for this insurance from the pay roll, on request. Some companies bear the expense of managing local insurance funds,

and others contribute regularly to the fund as well as undertake the expense of managing it. One road pays 45 per cent of the premiums on all insurance of conductors, engineers, firemen, brakemen, bridge carpenters, signalmen, yardmen, and foremen in its employ, which are taken out in a designated standard insurance company. Some roads merely offer these as facilities, while others require certain classes of their employees to be insured.

Another form of general educational activity, where the railroad has great facility, is the circulating library. The opportunities of accomplishing much with small outlay was early realized. In 1850 Gen. Herman Haupt, then general superintendent of the Pennsylvania Railroad, when the new shops were opened at Altoona, went among the wealthy men of Philadelphia and got subscriptions for a library for employees at Altoona. In view of the ease and inexpensiveness of this kind of work, it is remarkable that the railway library has not been more fully developed. By use of the baggage car and the highly organized train and station staff, the books can be circulated over a wide territory at no expense. The sketch of the traveling libraries below is by the librarian of the Baltimore and Ohio Railroad:

The earliest railroad traveling library of which I have any knowledge, that of the Boston and Albany Railroad Company, was opened in Boston, free to all the employees of the company, in February, 1869, and was moved to the general office of the company at Springfield, Mass., its present location, about 1881. The library now numbers in the neighborhood of 3,000 volumes, all of which are for circulation (except some 500 reference books). The circulation is about 3,000 per year. It has received numerous donations of money and books, but it is chiefly supported by annual appropriations of the company. Its government is vested in a committee of five—two members of the board of directors, the clerk of the Boston and Albany Railroad Company, the assistant superintendent, and the master mechanic.

The rules state that "books from stations must be in the library Wednesday morning, in order that more may be sent the same week. Any book received after that time will be checked off, but no more sent until the following week." Orders for books are answered every Wednesday, and each borrower may draw two books at a time. Books may be retained two weeks and may be renewed; otherwise they are subject to a fine of 1 cent a day. A revised catalogue was published in 1889, and since then four supplements have been issued; from these the borrowers select their books.

The library of the Railroad Branch of the Young Men's Christian Association of New York City was founded in 1887 by Mr. Cornelius Vanderbilt, who supports it. It contains about 7,500 volumes, 750 of which are classed as railroad books—more or less technical. Mr. Stevens, the librarian, tells us that "during last year 12,337 volumes were drawn by 1,377 readers, 5,713 volumes were delivered by train service to other railroad branches of the association at points along the line of the road, and 1,131 were delivered to members at stations holding special library tickets." The books delivered by train service were sent to 724 readers along the lines of the New York Central.

Almost every town in Massachusetts has its free public library, and the people who live along the lines of the Boston and Albany Railroad have freer and easier access to books and libraries than any other people in the world. During the last half century the State of New York has spent millions of dollars on books for the people. It is therefore not unnatural that there should be a larger use of the traveling library of a railroad in a section where, until within recent years, the free circulating library was almost unknown. Such a library, in some of its features both original and unique, is found in the Baltimore and Ohio Employees' Free Circulating Library. This library, after having been moved several times, is now at home in a large second-story room in the building at the corner of Pratt and Poppleton streets, Baltimore, at the Mount Clare shops.

In 1884 the late Dr. W. T. Barnard was "assistant to president" of the Baltimore and Ohio corporation, and to him the library is largely, if not entirely, due. Dr. Barnard was actively interested in the Baltimore and Ohio Relief Association (now the Relief Department), and thus acquired a knowledge "of the sad lack of educational facilities along the main stem and branches of the Baltimore and Ohio Railroad." He therefore undertook to establish a free circulating library "exclusively for the use of the employees and families of employees of this

service." His plan was outlined in a circular dated December 1, 1884, from which the following is taken:

"The establishment of a free circulating library for the employees of the company is undertaken in the belief that such an institution will be welcomed by all classes as a popular and desirable measure, and that through its agency and development much-needed opportunity will be afforded employees to qualify themselves for promotion and advancement in life, while at the same time their children, wherever located, will have at hand facilities for study and instructive reading matter seldom obtainable outside large cities. This will be done without cost to employees and in such a manner that the books furnished can be utilized not only at reading rooms (not always convenient of access), but also amid the comforts and society of their homes.

"The plan, in brief, is, by means of contributions of money and books, to establish a compact general and technical library, selected with special reference to the wants and tastes of employees and their families; to print inexpensive but carefully prepared catalogues and cards on which to make requisitions for books, and to so distribute them that every member can receive and return literature, without delay, through the company's train service. * * *

"This library is therefore to be exclusively for the use of all employees, their wives, and more particularly their children. Its mission will be to exert an elevating and educating influence on those it reaches. It will supply current periodicals, standard works on the sciences, general literature, poetry, historical, text, and other books of practical utility to engineers, mechanics, firemen, and other railroad employees, and those especially adapted to educating and forming the character of the young. Whatever is immoral in tendency will be rigidly excluded from its shelves, and its management will do all it can to discourage the use of literature from which unhealthy and unreal ideas of life might be drawn.

"It has been created and will be sustained by voluntary contributions of money and literature from the officers and employees of the Baltimore and Ohio Company and outside friends interested in their welfare.

"Its headquarters will be at Baltimore, but it will undertake to distribute books, etc., to any point on the Baltimore and Ohio Railroad lines."

The plan, as outlined by Dr. Barnard, received the official sanction of the company March 2, 1885, through an order of the president, the late Robert Garrett. The order provided for the management of the library by a library committee, said committee to be composed of two directors of the technological school, two members of the committee of management of the relief association, and a representative of the Baltimore and Ohio Company, appointed by the president. The principal instructor of the technological school and the secretary of the relief association were to be members of the library committee ex-officio. The technological school was abandoned some years ago, and since then its representation on the committee has been dropped. When the relief association was changed to the relief department the corresponding officials of the latter became members of the library committee. The library year begins December 1, and the members of the committee are appointed annually. The president of the company appoints the librarian.

The library committee, as provided for in the president's order, organized and began work at once. They appealed for aid to those only who were financially interested in the company. They collected $5,391 and received about 1,500 well-selected books as donations. The nucleus of the collection was a donation of 600 volumes to the employees at Mount Clare by the late John W. Garrett, in September, 1869.

December 3, 1885, the library began its work with 4,500 volumes on its shelves, 3,000 of which had been purchased. The first year 16,120 volumes were circulated, 4,850 at Mount Clare, and the remainder at different stations on the lines of the Baltimore and Ohio. The circulation for the second year was 23,514; for the third year, 23,470, a slight decrease. The fourth year showed an increase of more than 2,000 over the previous year, and since then there has been a steady growth in the circulation. The circulation for 1895 was 37,702, and in 1896, 2,500 borrowers drew 39,505 volumes from the library. Since 1885 more than 300,000 volumes have been drawn.

These books travel as far westward as the Mississippi River, through eight great States, and over a railway system approximating 3,000 miles. They are delivered to borrowers through local agents, and the average time from the placing of an order for a book in the hands of an agent until the book called for is in his hands is now less than 24 hours for the entire system. The library uses 674 agencies, each agency serving as a delivery station for the employees of the community or department.

Along with the increase in the number of books used there has been a decrease in the percentage of fiction. The first year 64 per cent of the circulation was fiction; the percentage of fiction is now less than 53 per cent.

A book may be retained two weeks, and may be once renewed for a like period, or oftener, if no application for it is on file. There is a fine of one cent per day on books kept overtime, but a margin of three days is allowed to cover the time consumed in transit.

On leaving the service of the company all books must be returned before pay-vouchers are cashed; otherwise the value of the book will be deducted from the wages of the employee.

The whole system of sending out and returning a book is similar to that of the registry department of the post-office. Every person who handles a package receipts for it, so that it is possible to trace anything that may be lost. The company is responsible for all books in transit, and it exacts the same care in the handling of library property that is required for all other property.

The system of ordering and charging books for circulation is very simple. The borrower fills out a requisition blank, that is, by writing the name and call numbers of the books he wants, which he selects from printed catalogues, and by signing his name and address and the department in which he is employed. The requisition is then countersigned by the agent through whom he wishes to get the book, and it is sent to the librarian at Mount Clare, Baltimore. The librarian takes the first book on the list (using his discretion, however, in case of fiction, to select for the reader), and then makes out a record card for the transaction. On this card is entered the date, the requisition, book, agency, and package number, and the name of the borrower. The card is filed in the order of the book number. Another entry is made on a card under the agency number. This entry shows how many and what books are at any agency at any time. When a book is returned its number is marked off on the agency card, and the charge on the card filed under the book number is canceled. A new series of requisition numbers begins every year on the 1st of December, and the requisition number is always the total circulation of the fiscal year to date.

After all entries have been duly made and the requisitions have been stamped and dated the books are wrapped in packages. These packages are then stamped and labeled for delivery, through the baggage department, to the agents along the lines. Several agencies take such a number of books that satchels are used in carrying them back and forth.

To prolong the life and usefulness of the books, and at the lowest possible cost, the librarian uses for binding and repair the leather from worn car seats, which he gets from the passenger-car repair shops. The leather is practically useless when it is removed from the seats, but the pieces he is able to get makes a binding that is both neat and durable.

Once a year the librarian goes over the lines, visiting all the agents in the interest of the library. This is done during the summer, when, for about four weeks, the library is closed.

The library now contains about 14,000 volumes. There have been few additions since the Baltimore and Ohio Company has been in financial straits. Gifts of suitable books will be gladly received.

Corporations, like individuals, are recognizing that their duty to those they employ is not complete on the payment of the stipulated wage. Hence it is that relief departments, young men's Christian associations, and other helpful organizations are established or encouraged by so many of our railroads. These organizations raise men to a higher physical, intellectual, and moral plane of life—the very fundamentals of faithful service. In other words, it pays to have some regard for the men outside of working hours.

The force of good books in our daily lives is being felt and recognized more and more every day. To the section hand and his family, living in rock-bound isolation, to the operator in the signal tower waiting for the click of his instrument to call him to duty, to railroad workingmen everywhere along the company's lines, the books from Baltimore are bringing sunshine, and in the economy of the universe I fancy that it is no less important to cause such sunshine than it is to cause two green blades to grow where now there grows but one.

The Wells-Fargo Express Company have for some time had traveling libraries among their employees. Mr. E. A. Stedman, assistant manager of the company, writes describing them:

Mr. John J. Valentine, president of Wells, Fargo & Co., has for years encouraged the organization of library associations by employees of Wells, Fargo & Co. in the different departments of the company's service.

In August, 1890, "The Wells-Fargo Library Association" of San Francisco was organized with 60 members. At first only magazines and other periodicals were purchased and supplied to members. In February, 1892, 400 books were selected and purchased. In 1897, 2,500 books were on their shelves, 72 magazines were on their list of periodicals, and the membership had increased to 400.

On October 14, 1897, at the suggestion of Mr. Valentine, a number of employees at New York organized "The Wells-Fargo Atlantic Library Association," for the benefit of employees in the Atlantic department of the company. We now have 281 members and over 1,600 books, which we believe are well selected for a library of this character.

On June 5, 1898, another association for the benefit of employees in the middle West was organized at Chicago, called "The Wells-Fargo Illinois and Northwestern Library Association." Their 1899 catalogue indicates that they have already acquired about 1,200 books.

A fourth association is, I believe, being organized in Mexico City, as a request was recently received from there for detailed information regarding our organization, forms, etc.

The organization in each association is practically the same as in the others. The employees who become members conduct the affairs of the association through the officers and trustees whom they elect yearly.

The dues, collected monthly, are 25 cents at San Francisco and 15 cents at New York and Chicago. For the first three years Wells, Fargo & Co. contributes to the new association an amount equal to that paid by the members. Suitable rooms in the company's offices are also provided, when possible, and furnished for use as a reading room.

The president of Wells, Fargo & Co. has also donated to the association many of their best works of reference and historical works.

While the reading rooms are used to some extent, my observation leads me to believe that the circulation of books in the homes of employees is the best work done by these associations.

Books are carried free by Wells, Fargo & Co. Express to and from association members, at any point on its lines. Even in the cities where the libraries are located this service is of value to members, books being delivered at the desks of employees, in offices far removed from the library, who have no opportunity to call at any of the city libraries or that of the association.

A new feature is now being tried in the Atlantic Association. A number of train messengers who "lay over" at Salamanca, N. Y., are provided with 50 books for the "messenger room," which the company furnished for their use. Each month the books are exchanged for others. A case is provided for the books while at Salamanca, and also a box suitable for shipping books back and forth.

The reading room has grown out of necessities in much the same way as the railroad hospital on the great Western railroads. Train men at the end of their run must be provided for in some way, and this was found to be most easily done by the reading room.

Lectures and literary entertainments have sometimes been systematically resorted to in small towns and division headquarters where there is principally a railroad population. The transportation and much of the entertainment expense involve no outlay to the railroad, and from its men it is at little risk to guarantee a reasonable attendance.

Another feature of general education that may not be passed over is the placing of a premium on the education, culture, and moral rectitude of individual employees by giving preference, other things being equal, to these qualities. The return to the railroad is perhaps never from the individual, but from the general influence and tendencies thus set up throughout the service, but it must distinctly be with the proviso "other things being equal," otherwise the demoralization too often follows that is incident to paying a man for one thing under pretext of a different thing.

The great agency which railroads have recourse to in their efforts for the improvement of their employees is the Young Men's Christian Association. It has been long in the field and is so thoroughly equipped with men and methods that it generally succeeds better than the railroad directly can. From the educator's standpoint it is distinctly a moral and educational agency. To the railroad

manager it must be viewed from the economic standpoint alone. The late President George B. Roberts, of the Pennsylvania Railroad, in recommending an appropriation by his company, said to the directors: "If you vote this money for this purpose it means more to the Pennsylvania Railroad than the same amount of money would if invested in steel rails." Mr. Chauncey M. Depew, while president of the New York Central Railroad, said: "The association does more in fitting men to fulfill their duties for the safety of the public than all the patent appliances of the age."

Mr. George B. Hodge, secretary of the educational department, gives the following summary of its work for 1898:

The educational facilities of railroad men embrace reading rooms, libraries, literary societies, lectures, practical talks, and evening class work. Throughout North America are 135 railroad Young Men's Christian Associations. There is a total membership of about 32,000 men and a working force on committees of about 4,000. Every day there is an attendance averaging 13,500 railroad men at these association buildings.

There are 115 reading rooms, in each of which there are from 10 to 150 different periodicals on file. A great many of these periodicals, of course, are technical and concerned with railroad work especially.

There are 95 libraries, containing about 70,000 volumes, and the total number of books drawn from these libraries by railroad men the past year is 84,500.

Twenty literary societies are reported, with an average attendance of 650. Sixty-two railroad associations report 287 lectures and practical talks. Thirty-five of these associations report evening classes, in which there are a total of 109 branches taught, and 1,408 different railroad men students. These classes are for the most part in arithmetic, bookkeeping, mechanical drawing, shorthand, and typewriting.

Considerable work is done in what is called first aid or emergency work; also in the study of steam, the steam engine, the air brake, and other similar technical subjects.

The educational work of the Young Men's Christian Association is generally in the charge of an educational director at each place, who has general administrative charge. The work done in the evening classes is given effect by the system of "International examinations," which are conducted at the same date at all the associations, the papers being passed into the general headquarters for marking. The diplomas issued by this committee are recognized by some forty-four colleges and universities and eleven technical schools.

Railway Employees—Their Different Functions and Qualifications.

A railway president asks, "What is a railroad man?" The question brings into view the wide range and variety of attainment in railway employ. With the increasing complexity of railway operations the specialization in certain grades of the service becomes too great to be embraced in a single type of talent. There is little in common except the forms and spirit of a common organization and a common point of convergence in the lines of promotion. It becomes a question if the specialties that have so little in common do not classify more readily with analogous trades or professions than as varieties of a common genus of railway talent. President Perkins, of the Chicago, Burlington and Quincy Railroad, says: "The education of railway men has always seemed to me like talking about the education of dry goods merchants. Railways employ engineers, civil and mechanical, chemists, doctors, lawyers, and various other more or less scientific people; and I suppose the education of a railway lawyer is very similar to the education of any other lawyer; so I do not understand what is meant by the education of railway men."

In case the departments of the service are simply railway specializations of different trades and professions, the education would be first in the trade or profession, and the railway adaptation of it becomes a secondary consideration.

This specialization for railways may be had in actual experience, or in a supplementary course of instruction, or merely in general lectures and a few options in the regular course. The degree of specialization depends on what may be the trade or profession. For the lawyer or doctor it would be very little. For the mechanical engineer it would be very considerable. For the accountant and the traffic man it would be practically all of his profession, and for the transportation man it would be the whole profession. The civil engineer's duties have been split up into that of the bridge engineer, the architect, the roadway maintenance engineer. The architect and the bridge engineer are railway specialists of their respective departments of engineering rather than the converse. For the great body of the medical employees there is very little specialization possible. There is nothing in their service for the railway that differs from the regular professional practice, except that there is a prescribed method of making reports, and the physician is to be on the alert to see the legal bearing of the cases which may involve the company in suits. There is only one man, the chief surgeon, who can be said to have any special administrative duties. His are largely judicial. In his case it is more important that he be a good administrative officer than a good physician. Of the railroad lawyer we quote Mr. Fairfax Harrison, solicitor of the Southern Railway:

The kind of a lawyer that a railroad company usually retains is a man who has established his reputation by a long practice in a locality where he has influence and force with courts and juries. In order to obtain such a position it is necessary for him, of course, to be a good lawyer, and his education should therefore be to that end without regard to the railroad business.

A railroad lawyer is called upon to be a specialist in all branches of the railroad business, and, like the counsel for any other client, his practice usually is to prepare himself for the particular case which he is about to try by a special study, and after the case is tried to forget all that he had learned except the law applicable to the case. If this practice did not obtain a lawyer would soon become a "jack at all trades and master of none."

In the very limited number of lawyers attached to the general offices of railroad companies whose duties are not those of trying causes the function desired is more a judicial one than any other; that is to say, the lawyer should be prepared to pass judicially upon claims, having in mind a decision which is not only fair to his client, but to the public. This is necessary, because when an individual consults counsel he asks for advice, which he may or may not follow, but when a railroad officer consults the counsel of the company he asks for a decision on the question presented, which almost invariably he follows without further inquiry or discussion. If, therefore, the railroad lawyer upon which such duty devolves is honest in his work he can not be merely an advocate. For this reason those who attempt to do this class of work should be qualified by nature and character for judicial work; and it is a matter of general knowledge that judges are selected not by reason of special education, but rather by reason of the peculiar fitness or availability of the man selected.

The departments found in the organization of all American railroads are the transportation, roadway, mechanical, traffic, accounting, and executive. The great department is the transportation. Outside of the clerical labor this department consists of train men, enginemen, operators, station agents, and train dispatchers. The enginemen are technically under the mechanical department, but for the most part their duties are with the transportation. The organization above the rank of train dispatcher generally consists of a train master, division superintendent, general superintendent, and general manager. But it differs according to whether the plan of general organization over the whole road is by territorial units or by departments. Under the former plan the superintendent may be said to be general manager of his division. He has full charge of everything on his division, being guided in general policies by the general officers of each department at headquarters. The division officers of the different departments report to him. The train master then becomes the highest official on the division, whose duties are purely of a transportation nature.

Under the other plan each department has its own separate divisional organization, reporting directly to its general officer at the general office. Since under this plan the lines do not unite until we get to headquarters, the tendency is to produce specialists. Under the former plan the transportation department broadens out earlier into a general administrative office, but generally at the expense of the other kinds of service, which do not lead to the superintendency. On some roads this tendency to consider the superintendency a transportation office by right is distinctly thwarted by holding it open for the civil engineer alone. Sometimes they definitely train their superintendents by a mechanical apprenticeship, but nowhere is it general for the superintendent to be appointed in regular succession from the mechanical department. On one road, which is alone in the practice, the superintendents are taken from the auditor's office.

The train master deals exclusively with the movement of trains and distribution of cars on his division. He deals directly with train men and agents, but their appointment and discipline is generally in the hands of the superintendent. It is essential that he be thoroughly versed in the transportation rules. The experience of an operator and train dispatcher is very helpful, though not essential. Sometimes part of his functions are given to a chief dispatcher, and the rest, with added duties, are united in the functions of the chief clerk to the superintendent.

From Mr. Charles Hine, chief clerk to the division superintendent of the Cleveland, Cincinnati, Chicago and St. Louis, we have the following statement as to the qualifications for that office:

REQUISITES OF A CHIEF CLERK TO A SUPERINTENDENT.

Essential. — Common-school education. Experience as a railroad clerk and stenographer, preferably in the office or on the division where employed. A knowledge of train rules and of the duties required of the various employees on the division.

Desirable. — Higher education. Experience as a telegraph operator and as a train dispatcher. Experience in the train and yard service. Experience as a station agent.

The train dispatcher must first be an operator. Train dispatching is a highly technical work. Only persons that have the faculty of continuous attention and precision well developed should ever be train dispatchers. Most men have had their experience and their testing at some terminal or heavy train-order point. They then come into the office as copiers, whose duties are to copy orders sent by the regular dispatcher. The train dispatcher should be familiar with the grades and physical conditions of the road, the sidings and their capacity, the motive power and the ratings and running conditions of the different classes of locomotives, and the nature and delays of different kinds of breakdowns. Except facility with the key, a knowledge of train rules and train orders, and some general knowledge of the running conditions of rolling stock, there is little that can be acquired outside of the school of experience.

The station agent is one of the very largest classes of railway service. In the earlier days the station agent was, and at the smaller places at the present time is, generally a local man who became agent because, perhaps, he was locally prominent. Again, they are exclusively railroad men, who came into the community as railroad employees, and are liable to transfer elsewhere. But generally if they have been first railroad men, relief operators or relief agents, when they accept an agency they become permanent fixtures with highly developed local relations. This so far tends to take them out of the professionalism of the railroad service. If agents are sometimes thought to be to a degree out of the general movement of railroad succession, the reason may be in their isolation and the fact that movement for promotion means the severance of local relations, whereas in other places it is simply a movement from one desk to another.

The station agent is brought into direct contact with the traffic and auditing departments as well as the transportation department which he serves. His duties at a competitive point are quite as much for the traffic as for the transportation department. At the large terminals the agent becomes an administrative officer, ranking next and sometimes on an equality with the division superintendent.

Station agents come into the service as relief operators and as clerks at large stations. It is not essential that all agents be familiar with the key, but it is highly desirable. As the agency becomes larger the commercial talent becomes more important.

The agent is essentially a vender of transportation. He must understand the commercial conditions of his town and adjacent territory, so that he may advise the traffic department intelligently. He must know the usages of business, the common carriers' liability, the packing, shipping, and warehousing condition of the various kinds of freight handled at his station. By his tact and general ability he must be able to command the confidence of the business community. Few places in the service demand such variety of talent. While the importance of a highly trained staff of station agents is often emphasized, there has been little done for their systematic instruction. But among the efforts in this direction may be mentioned the Station Agents' Association on the Southern Railway, a semiofficial organization of the larger agents meeting quarterly for the interchange of ideas and discussion of methods and general policies.

At the large terminals the transportation and traffic function of the agent are sometimes separated and the transportation part assigned to a superintendent of terminals. Touching his training and qualifications, Dr. William Taussig, president of the St. Louis Terminal and Bridge Company, says: "A superintendent of terminals must have a good knowledge of traffic, of rolling stock, machinery, maintenance of way, and of operating to become efficient, and while a good knowledge of how to operate switching and engine yards is also necessary, still that knowledge may come by observation (without necessary manual practice) while serving as employee in other departments."

The engineman, perhaps, came in as wiper, hostler, fireman, and sometimes had first been machinist. For the most part they were employed after they were full grown, as physical endurance was one of the essentials. The pay and promotion held out have not allured the man of special education into the service at this age. The engineman therefore generally has not had the preparation by education for large administration, and either from this reason or the independence and fascination of his life, he has seldom moved beyond the place of engineer, unless perhaps to become road foreman of engines or roundhouse foreman. The requirements of his service are a well-balanced mental organization, steady nerve, alert faculties operating with decision, certainty, and dispatch within a limited number of choices. While on duty he can not allow his mind to wander out to generalizations, but must confine himself with the closest attention. The tendencies of such service are to produce some of the most heroic qualities. The education for such duty must be had in the discipline of actual experience. Railroads are beginning to require a high standard of knowledge on train rules, breakdowns, air-brake practice, firing, and economical running, but in some quarters is the feeling that too much theory rather confuses than facilitates the runner.

Trainmen, like enginemen, generally come into the service after they are grown, as physical strength is one of their requirements. Generally speaking, those who have had any special education are not attracted to this service, because with the larger operations of railroads has grown up a staff service which is the more common avenue of promotion. The better positions of pas-

senger conductor on choice runs pay well and offer a certain independence that is attractive. The educational requirements for entering the train service are very simple, and on some roads are neglected altogether. The employee gets his training in experience. As he advances he is given examinations—generally oral—in train rules and certain rules of thumb to guide him in case of breakdowns. When he becomes passenger conductor, he learns by correspondence chiefly, from the passenger department, the special requirements of his new position. Some roads undertake a little technical instruction in the use of the air brake. On the New York, New Haven and Hartford Railroad only have we been able to find any regular instruction given to trainmen systematically. But the beginning there made is not sufficiently advanced to report what has already been accomplished.

The Cincinnati, New Orleans and Texas Pacific Railway has undertaken in a modest way the instruction of trainmen in signal practice by the use of a stereopticon.

The roadway department consists of the section men, section foremen, supervisors, and roadmasters, and also bridge carpenters, bridge foremen, and superintendents of bridges and buildings. At this point there is sometimes a more or less definite line drawn, the next officer, the engineer, being a man of higher education, whereas this has not been the requirement for all those below him. Sometimes the road master is the engineer and sometimes they are separated.

The section laborer is generally the common laborer of the community where the road runs. The section foreman has been boss on general construction, or, if the road has been in operation a long time, was picked out of the gang which he bosses. He generally has had no education except such as he got in his apprenticeship, which was itself more or less indefinite. The supervisor is generally selected from the section foremen for superior knowledge of good track. The road master comes to be an administrative man. Whether he should be an engineer or whether he should report to an engineer is still a much-contested question.

The importance of the track department in the latter-day necessity for cheap transportation, and what has been demonstrated on the Lake Shore and Michgan Southern Railway by the use of division engineers, has tended to restore the engineer's place on the railroad. In its highest development there are two engineers. The distinction made by Mr. Willard Beahan, of the Lehigh Valley Railroad, is: "The bridge engineer becomes responsible for the safety of truss bridges, while the division engineer always does the policing of the division in all things." This division engineer has charge of the maintenance of track, bridges, buildings, and water service on the operating divisions, with his office at the same point as the superintendent, who is his immediate superior. Reporting to the division engineer are the road masters, who have the section foremen reporting directly to them. Under this division engineer is the general foreman of bridges and buildings, to whom all bridge foremen report directly.

Referring to the qualification of the division engineer, we quote Mr. Willard Beahan, of the Lehigh Valley Railroad:

> The division engineers must be men who have served an apprenticeship as instrument men on maintenance-of-way work. They can not fill their positions with less than three years' experience in responsible work on maintenance of way. They must also have experience in railroad construction and in the handling of men. They must understand every engineering principle they need to use, and not be men who are copying what they have seen others do. They must be men who have been taught the necessity in railroading of obeying orders. The qualities and discipline an engineer on railroads needs are those an army officer must have. Finally, and we can not emphasize this too much, these men must have studied under road masters and learned much from them.

The superintendent of bridges and buildings bears the same relation to bridges and buildings as the roadmaster to track. Mr. Onward Bates, engineer and

superintendent of bridges and buildings of the Chicago, Minneapolis and St. Paul Railroad, describes him as follows:

He is oftener a mechanic than a so-called professional man, and he has generally risen from the rank of carpenter, through that of foreman of carpenters. The position is one that may properly be held by an engineer, and it is fast becoming such that its holder must be an engineer to be capable of performing the duties pertaining to it. The practical man who fills such a position is something more than a mechanic, and that he is qualified to hold it is evidence that he has added to his mechanical knowledge a considerable amount of that knowledge which engineers sometimes assume to belong strictly to their own profession. On the other hand, an engineer in charge of structural work should be familiar with mechanical construction and capable of executing the work in its details. The engineer who can not make plans and specifications and who is unable to lay out the work and control all the details of its execution and manage the men employed upon it is himself only a workman to be employed under the instruction of others. As our railways become more able to replace structures of a temporary character with permanent ones, there will be a greater demand for the possession of theoretical knowledge by the superintendent of bridges and buildings. There are already a good many engineers so employed, and it has become the policy of some of the large railway corporations to appoint engineers to these positions.

If by superintendent of bridges and buildings we mean a man who can himself design and compute, as well as erect and maintain structures, then the office is justified; this man is really, then, superintendent and engineer of bridges. But if by superintendent of bridges we mean simply foreman of bridges with large mileage, a man who can erect and repair, but can not himself design or compute, then we have a position analogous to general roadmaster, and a bad office established. Giving a foreman of bridges more mileage does not make a general officer of him. The bridges will then be taken care of by the foreman of the different districts, and the so-called superintendent has been placed where his knowledge of bridge building and repairing lies dormant, while he does poor clerical work and gives abortive advice to the manager or vice-president. He can not design a bridge or say whether weight meets strain face to face; he knows nothing of shopwork or tests; he is a tax on railroad capital, and he always was and always will be; he is a carpenter trying to help a superintendent who was never a carpenter.

The education and duties of the bridge engineer are described as follows:

This bridge engineer must be one experienced in foundations below as well as above the water. Pneumatic caissons and dredging cylinders need so much plant and demand a kind of labor such that the work had better never have been attempted save by contractors who make such work a specialty. But coffer dam work has often to be done and requires only such plant as any railroad company owns. It is unpleasant for contractors to do pneumatic work for a railroad which has no bridge engineer familiar with that work, and it is uneconomical for the company not to have a man to attend to it intelligently. When a span bridge becomes too old or too light according to the bridge engineer, and the chief engineer, with the approval of the general manager, decides to buy a new span, it is the duty of the bridge engineer to make the plans, advertise for bids, award the contracts (subject to the approval of the chief engineer), check the strain sheets, attend to shop inspection, receive the bridge f. o. b. cars on the company's tracks, put in the foundations, erect the span, test it, and turn it over to the transportation department.

The mechanical department is a highly technical service. For that reason it is generally widely separated in the lines of movement from the other departments. After the mechanics, there is a variety of organization. There are the road foremen of engines, the roundhouse foremen, the foremen of engine repairs, and of car repairs, car inspector, sometimes engine inspector, draftsmen, chemists, mechanical engineers, master car builder, master mechanic, and superintendent of motive power.

The duties of these officers have been largely administrative within the limits of their department. There was a certain standard to be maintained, after established types and methods.

In general it may be said that railroads do not do much designing, because their work is more especially repairing than constructing. For this reason the tech-

nically educated man has not come at once into request. Railroads are coming to recognize technical training by taking men into the service as special or preferred apprentices when they hold the diploma of some recognized technological institution.

The railway mechanic does not differ essentially from any other mechanic. The inspectors must have knowledge of running conditions. Of the road foreman of engines Mr. Quayle, superintendent of motive power of the Chicago and Northwestern Railroad, says:

He should be competent to conduct such road tests as may be required from time to time for the purpose of determining the haulage capacity of locomotives over certain parts of the road, and make comparative tests of different kinds of fuel or appliances to locomotives. He must be thoroughly conversant with all parts of the locomotive, and an experienced and expert runner. His salary must be such that he will not wish to return to his engine in order to obtain better wages.

The master mechanic is coming to be a technical man who has also served a special apprenticeship.

The auditing department has not until lately been conceded the importance and recognition it deserves. Because anybody can do clerical work in some fashion it was assumed that anybody could be a clerk in the auditor's office. It was used as the comfortable repository for old timber that had survived its usefulness, and was filled up with boys who did the work. It was not considered an apprenticeship to anything better, and hence the incentive to the best talent was lacking. The tendency of the work is to cramp and narrow the mental vision unless the worker relates the great detail to the principles on which it all rests. It is often quite removed from the stir and excitement of the railroad life. The organization of the Railroad Accounting Association has given a very great impetus to this department. The auditor is auditor, accountant, and statistician in one. As accountant there are definite limits to the possibilities, but as auditor and statistician the very highest talent is in request.

The general auditor of one of the great Western railways writes:

A knowledge of the detail of audit work can properly be acquired only in an audit office, and it would be a waste of energy and valuable opportunity to attempt to study this detail before entering such an office. It therefore seems to me that the best preparation for the auditing department is a college course on broad lines, with considerable mathematics for mental training. Such a course tends to breadth of view, which is very important as a foundation to enable a man to resist the narrowing influence which years of drudgery on details is bound to exert. A course in any of our larger colleges tends to broaden a man, and the hard knocks he gets in college are pretty sure to put into him some of that common horse sense which is so necessary in all branches of railroading.

The traffic department represents the commercial side of railroad operation. It deals with markets, prices, and general commercial and industrial conditions. It may be said to be the field of applied economics on the railroad. A knowledge of commercial geography, industrial processes, the nature and kinds of competition, usages of the shipping public, the packing and shipping conditions of various products, their weights and measures, etc., is exceedingly useful in this department.

The traffic department is divided into passenger and freight. The freight business is based more on economic principles, while the passenger deals more with the individual, his personality, humors, convenience, tastes. The passenger department comes naturally to do the advertising and to blaze the way for the pleasant relation of the freight department with its patrons. This cleavage is followed up in the freight department by the distinction between the soliciting and the staff or rate department. Thus the railroad sometimes without much demoralization directly employs advertising talent for this department as advertising agents, press agents, etc. A great deal of the soliciting is done by men

who do not have a technical knowledge of the freight business of the railroad, but have the skill of pleasing address and diplomacy in dealing with shippers. They cultivate acquaintance with a wide clientage of shippers whose shipments they are able to control.

Throughout all the departments is a large force of clerks. From the Railway Clerk of May, 1894, we quote:

The railroad clerk is found to-day in the general office, the large terminal stations, the division headquarters of the mechanical, roadway, and transportation departments, and the general outside agencies. In the United States there are nearly 30,000 in the general offices alone. He has generally had a common-school education with one or more years in the high school. Very few indeed have had a university education except some of those employed as experts in the engineer, machinery, or signal departments, and then their training has been highly special and technical. They may be roughly divided into two classes—one, the clerk who entered the service on leaving school; the other, the man who by force of circumstances has drifted into the service after the prime of life.

In the lower grades of clerical work the nature of the skill required does not differ very greatly among different departments. The two great desiderata are accuracy and rapidity, with a habit of close attention. No mathematics beyond simple arithmetic is ever used outside of the engineer's office. The introduction of typewriters has made less demand for penmen, and instead clerks generally have some facility with the typewriter. But they must be able to make legible, neat figures. Beyond these simple requirements, almost the entire knowledge necessary is acquired in the office. In the mechanical department the clerk must acquire mechanical terms, and some knowledge of the use and relation of different kinds of machinery and supplies used there, and the organization of the force, M. C. B. rules, etc.

In the traffic department, if in the correspondence division he must be able to write a good business letter, must be familiar with traffic rules and usages, and have the power to analyze and sum up evidence in the claim division. The rate clerk is a special man. He must acquire facility in posting himself as to rates in the territory assigned to him, and be able to understand the relation of different markets and producing and distributing centers, and watch carefully the tariffs of other roads that may have an effect on his business.

In the accounting department the clerical force is mostly engaged in handling figures. Bookkeeping is there so highly specialized and subdivided that there are really very few bookkeepers in an accounting office.

Railroading a Profession.

No small consideration in connection with the education of a railway man is how far the railroad life has the dignity, the spirit, and the methods of a profession.

Dr. Chauncey M. Depew, who was for so long president of the New York Central and Hudson River Railroad, writes: "In the early days of railroading it was a vocation, now it is a profession."

Mr. H. G. Prout, editor of the Railway Gazette, in remarks before the Western Railroad Club, said: "Whether or not railroading is a profession, whether or not it can ever be a profession, is a small matter; the vital thing is that railroad officers should have the professional spirit."

The growth of this professional spirit has been very great within the last two decades. It has been greatly enhanced by the railway clubs. Said Mr. Towne before the Northwestern Railway Club: "I was one of the first members of the American Railway Master Mechanics' Association, and I remember very distinctly how difficult it was to get the master mechanics to express themselves in the conventions. Those who were considered the leading men in their profes-

sion refused to attend the association meetings or have anything to do with them, claiming that the information which they might impart to the younger members would be such as to interfere with their own prospects."

Such a spirit could not foster education. It too often affected to despise education. The late assistant to the president of the Baltimore and Ohio Railroad describing it, said: "Entering upon a new field of operations, wholly unrelated to their previous experience, without preparation or instruction, save what they absorbed in the performance of exacting duties on the railway, in the workshop, and in the engine and boiler rooms, men who had been picked up from many walks of life and who altogether lacked scientific training, would naturally be guided solely by 'rule of thumb' practice, and their lives were sure to be narrowed until they acquired pride of being known as 'practical' men. The railroad workman of to-day is largely the outgrowth of this condition of affairs, and yet is not wholly responsible for educational deficiencies."

Referring to the same thing, Mr. Charles Francis Adams, formerly President of the Union Pacific, out of his own experience there, writes: "Every profession, no matter what, goes through a stage where it is zealously maintained that education is an injury. Speaking after the manner of men, this is 'all rubbish.'"

Referring to the process of change from unwritten to defined principles of practice, Gen. James Harrison Wilson writes to the Railroad Gazette in December, 1887: "It is within the last twenty years that the first book of regulations was compiled, and it is probable that not one in twenty roads to-day has at present any regulations except such as are carried in the heads of their officers or are printed on the backs of their time cards for the government of trainmen." Since the date of his writing the change has gone on very rapidly. The standard code of train signals, of train rules, principles of roadway and rolling stock maintenance, of accounting, of settling claims, of dealing with employees on the sociological side, have been evolved and largely enunciated. A literature has been steadily accumulating in our railway journals and proceedings of our railway associations and monthly clubs, which is of great value.

In the mechanical department a great change has come already. Mr. Sinclair, editor of Locomotive Engineering, says, "Fifteen years ago or more, I became a member of the American Master Mechanics' Association. At that time there was not a single technically educated man in that association." Referring to the present time he adds, "At the last meeting of that association a college graduate was elected president, and college graduates ruled the association."

Touching on that other unprofessional element that so largely dominated early railroad affairs and demoralized the service, Mr. G. B. Leighton, president of the Los Angeles Terminal Railroad, says: "The man who acquires and owns a railway as a speculation is fast disappearing. Where he has confined himself to this alone, his success has never been of long duration. Where the speculator has desired to retain the property, and believes in its ultimate value as an investment, we find that he has endeavored to change his spots as much as possible, and become, as every railroad officer should become, a student of the economic operation of his line."

There is rapidly emerging what may be considered a system of railway institutes. Here ideas are freely exchanged, details of operation and railway polity discussed, and expression given that has an informal and semiofficial authority. The railway journals extend the educational effect of these bodies, and are the medium for yet further expression. In this intercourse the individual railroad man gets recognition of his ideas. He comes to enjoy a standing that is wider than the particular railroad with which he is connected. Thus is set up the basis of a profession.

The railway clubs as a factor in the education of railway men can not be too

greatly emphasized. They are all comparatively of recent date. They have so far been more especially developed on the mechanical side of operation. The Master Mechanics' Association was organized in 1867, the Master Car Builders' Association in 1866, the American Roadmasters' Association in 1883; the Car Accountants' Association in 1875, and finally the great American Railway Association in 1887. One of the later and most thoughtful bodies is the American Association of Railway Accountants, organized in 1888. The superintendents, the freight claim agents, the traveling engineers, the telegraph superintendents, the superintendents of bridges and buildings, all have their annual meetings. On the commercial side there has grown up the annual meetings of the baggage-masters, the ticket agents, the general passenger agents, the station agents, and the general freight agents. But their meetings are largely social in character.

These several bodies are most potent agencies in determining types and methods. They have come to have a quasi-official force in their several departments of work, legislating, as it were, on the problems of their respective provinces, and shaping a body of opinion and standard practice that is passed up informally for more authoritative action by the American Railway Association. They have been formed in most cases as the outgrowth of some trivial circumstance or as the incident to some immediate necessity, and their growth has been as natural. Thus the Master Car Builders were much concerned at first in those questions of standards that were necessary for the interchange of cars. The American Railway Association was the outgrowth of the time convention.

In addition there are local associations or clubs having monthly, bimonthly, or semimonthly meetings for discussion and interchange of ideas. Here ideas first have expression that pass on to the larger bodies. Of these local clubs the best known are the New York Railroad Club, formed in 1871, the Central Railway Club, The New England Railway Club, the St. Louis Railway Club, and the Northwestern Railway Club. They all print their proceedings and discussions, and these are circulated widely by exchange.

Compensation Related to Ability.

In any discussion of education of railway men we can not avoid reference to the system of employment, gradation, tenure, and promotion that exists in the service where this education is designed to avail. This is a great practical desideratum. All plans for education, however great may be the theoretical benefits, must come to naught unless the system of organization recognizes individual ability.

I do not suppose that out of the thousands of young men who came out of college the last year 20 went into the railroad business. Some do not know how to get in; or, if they do get in, they drop out because they do not see any future.—Mr. W. H. Baldwin, president Long Island Railroad, at the New York Railroad Club, January, 1897.

To induce any man to enter the service with the intention of making it his business during life, something beyond the mere fact that he will have permanent employment is needed. He must not only feel assured of permanent employment, but he must also be satisfied that he will be likely to better his condition as he becomes more familiar with the business, and when as a natural consequence his services are more valuable. Any bright and intelligent young man, full of energy and sanguine to the highest degree, is very likely to think that if he stands but a slight chance of advancement, whatever his merits may be, he had better start in some other business which presents better promise of future personal advantage.—Writer in the Railway and Engineering Review, October, 1884.

A successful general manager writes: "I would warn every young man not to enter railroad service." A bank president advises: "If your boy has any ability, do not let him cross the threshold of a railroad office." An auditor confesses: "When a young man comes to enter my employ I do my best to dissuade him,"

A highly successful purchasing agent, of wide contact with railroad men and affairs, urges a subordinate of ability to leave him "at the earliest opportunity and go into private business."—The Railway Clerk, May, 1894.

Another reason why civil engineering graduates do not accept low positions in the track department on railroads is that as our railroads are now conducted there is no hope held out to them that they will eventually be advanced above the grade of common laborer should they prove deserving; at least they would be given no preference over the uneducated trackman with whom they associated.—Prof. J. C. Nagle, Railroad Gazette, March 18, 1898.

The whole matter is so closely related to the general subject of education, and practice is so various on different roads and in different parts of the service on the same road, that we must inquire closely into all kinds of employment to see how far personal ability is the determining factor in securing to the individual his pay and other considerations.

The simplest first notion of exchange of labor for money differs from no other single transaction in the general market. The commodity bought is the greatest that can be had for the price given, and the price given is the greatest that can be successfully demanded. It is a single transaction in a free market having no relation to any other transaction or any other time except so far as it may affect supply and demand. There is carried with it no implied contract, no payment of past obligations nor discounting of future considerations. The laborer who bids the lowest for the day's wage and the employer who bids the highest make the exchange.

But F. J. Stimson, in "Labor in its relation to law," insists that such view of labor does not take cognizance of the peculiar nature of labor: "The theory that the laborer is like anybody else having property to sell is misleading unless at the same time we recognize, that while he has goods to sell they are goods of a peculiar nature, being, to wit, himself, his time, and his energies."

The next stage is where the employee and the employer still make their exchange in a free market, yet each gives to the other, as it were, a chance for a second bid, and they conform in this way to a ruling market rating. The employee works for just as little as any other man will work for, but every man that underbids him is exposed to the certainty of his meeting the bid. This steadies the market against excessive fluctuations, keeps the same laborer in continuous employ of the same employer, and tends to greater certainty on both sides. To-day's service has no reference to to-morrow's service, except in this respect, that the employee may meet all competition and, other things being equal, has the preference and is therefore not required to underbid the lowest man. This is the condition of the freight handlers, train crews, etc. But after a while the man who has certain known qualities is preferred to the man whose ability may be just as good, but which is an unknown quantity. The incumbent so far enjoys a monopoly value.

The regular employees are always exposed to the competition of outside men, but in usage there comes to be a certain agreement as to the rate of pay per unit of work, which shall be at about some average of the possible daily fluctuations. The market is in this way still further steadied. The compensation now directly depends on the volume of work. By coming to some understanding with the management as to the number of extra, or what the conductors call "platform men," they have interposed a further buffer between themselves and outside competition. They have a fairly fixed volume of work at an agreed rate, and the transition to the next stage, by estimating this volume at some fixed average quantity, brings us to the salaried position.

At this point the original notion of exchange of definite labor for money has been lost sight of. The opportunity to compete in the labor market has, by subtle transactions, come to be a "position" carrying a fixed salary and the com-

petitive notion has been dropped. The labor is parceled out to a lot of "positions," and the pay is divided up among a lot of annuities.

By taking the notion of "position" and "salary" as the starting point many of the misconceptions arise. Mr. John Converse, president of the Baldwin Locomotive Works, in his Founders' Day address at Lehigh University, says: "There is one term too commonly used which is mischievous in its influence. We hear of a young man seeking a position in a business. It is not 'position,' but opportunity of usefulness that should be sought."

An analogous expression often heard in railway service is, "Take care of him." On some roads the rule prevails to make all appointments by promotion from below. Such roads offer no market for any attainment or ability, whatever it be, unless it is already in their service. The policy can never in practice be followed out undeviatingly, but so far as it operates it rests a man's employment and reward upon the accident of his succession in a particular service. It tends to build up an industrial feudalism. It is directly opposed to professionalism in railroading, and puts no premium on education or extraordinary efforts of the individual. If the rule prevailed universally there could be no use for education of railway men. It is not essentially different from the guild monopolies of the Middle Ages.

Work is of different kinds, requiring different grades of ability. One grade differs from another ultimately in the amount of ability relative to the demand. At the outset the rating of each grade will be in this exact proportion. As we pass on into the higher grades of work the range of ability necessary becomes greater and less possible to measure by rigid standards. It is less technical and depends more on the mental and personal qualities of the man. The highest efficiency may not be often called for or only in the supreme moment, but it must exist as a potential quantity. It still is an actual and real thing. Next after direct skill comes that indefinite service of "responsibility," which is an unmeasured thing and may be made to stand for almost any quantity.

The nicety of administration is in assigning men to the kind and grade of work for which they are fitted. But fitness is a very changing thing. It generally is, and ought to be, a progressive thing with experience, which is one of the forms of education. It is the spirit of railway organization that all grades are open to the aspirant, however lowly his starting point.

After this comes in the notion of organization. We have seen how the individual was first paid for direct work and then his services reduced to an average quantity at an average rate, resulting in a salary. Now the whole body of men of different grades and kinds of work is reduced to an average quantity. Upon a certain customary succession of different grades of work for one man and a certain average period required for the movement, the pay to each man is based. He perhaps works in this grade to-day at less than he is worth and later works for more than he is worth. This is the essential nature of "service." For any instant of time it eliminates the individual and compacts him with the mass, but over the entire period of an average service the theory is that he receives his just due.

For the further perfection of the organization the differences between the different grades are often artificial. For instance, one man is selected out of a gang as the assistant foreman, although he has not better ability than the others and is worth no more, but he is paid slightly more and in the emergency of succession to the foreman's place, he supplies the place and has certain perquisites and considerations of dignity, ease, comfort, etc. He is not individually worth what he is paid, for any one of half dozen men would supply the place as well, but the money paid him and the privileges of his position constitute a stimulus to the

entire organization, which holds it more steadily together and even makes possible a less average rate for each man.

Referring to this notion of gradation when related to educational opportunities we quote from the Railway Clerk of May, 1894:

Railway employ is often described as taking service with a railroad. This implies that it is not exactly a free exchange of labor for hire in an open market to the highest bidder, but to a certain degree the relation between the company and the employee is permanent and not to be jeopardized every time the general labor market advances or declines a point. Any elements of permanence justify reciprocal concessions which are never equated in dollars or market value. Where perfect equity and certainty exist the employee can forego his full earning capacity in his preparation stages and the railroad can safely adjust its lines of promotion with a view to fitting the young man for greater usefulness. Many of the earlier stages by a little intelligent thought can be placed in an order that serves all the purposes of a training school.

The notion of service carries with it the notion of cumulative credit. In the language of Mr. Willard in the Northwestern Railroad Club meeting of January, 1897, "Employees should be made to feel that each year of faithful service and clean record adds to their reserve fund from which they can draw in time of misfortune or hard luck." From this we pass over by easy stages to the idea expressed by Mr. L. J. Seargeant, at the time general manager of the Grand Trunk Railway, which further amplifies the notion of service:

The argument may be used that railway service is, like others, voluntary and transferable; that in payment of salary or wage the company does all that it engaged to do, that no contract existed to provide for such contingencies. On the other hand, when the employee becomes as it were part of the service, when the performance of duty results in habit which leads him to neglect opportunities, when his sympathies create an esprit de corps, and when the whole of those cooperating causes lead to lifelong work in the interest of one company, there seems to be a moral claim upon the benevolence of employers who have been benefited by faithful, if not brilliant, services, to provide some scheme of retiring allowance which will protect the individual in those dark days against penury and want.

Without disparaging the benevolence it becomes a nice question of equity how far a railroad may be benevolent without being unjust. If the benevolence feature is carried too far the motive for education among railroad men will be destroyed.

Since we are dealing with ability, which is always a potential and not a real thing at time of engagement, and can not be weighed out and delivered like a pound of bacon, we must have some way of measuring it, as it is to be assigned to various grades of service with their varying amounts of reward. These various ways of measuring in different services here and abroad are, for example, by previous general record, by previous record in work leading up to this, or by previous record in a probationary period in this very work. Such record may be a single-entry system as it were, or merely a record of demerits, or it may be a record of both demerits and credits.

"But especially and primarily there should be a system of individual measure, so that each employee should feel that he, through the records, is directly under the eye of the manager, and is not averaged in a general mass."—Railway Clerk, May 9.

Perhaps there is no more powerful stimulus to the individual in the organization than the individual record, but it can not be too much emphasized that it has its limitations. It is at best only the record of part of what the man has done. It is that part to be sure which, according to the generally accepted standards of excellence in the work done, are necessary to good work. But these may after all be merely an a priori set of conditions, like the civil-service examinations in China, which perhaps never had any relation to the work to be done.

The measurements may be by examinations, either oral or written, or they may be by special test in the work done.

The Fall Brook system is merely a form of demerits and credits. Next in importance to the principles of measurement is the method of administration, that it shall be exact and impartial.

There is a definite tendency to place examination and record having any official effect under careful official supervision, and make it a record of the company as much as its balance sheet.

The relation of such measurements to the actual selection of men is a matter of great delicacy. The unforeseen conditions or circumstances that can not be contemplated in a record are so great that to rely implicitly and rigidly on the record is most unsafe. If we hamper our road master with too rigid specifications, and take away his discretion, he ceases to be a road master. It is quite the same with the employment of men as in the specification for material. Though we may not hamper our man, we yet can measure and record what goes into his structure. If he fails he is condemned by his violation of what we recognize to be safe principles, and so far our standards are confirmed as far as he is condemned.

Because we are dealing with an organization, and each part has reference to some other part, together with the special examination for a specific thing should be an examination with reference to some ultimate thing, which is the general examination.

In most organizations the work in each department when once laid out is supposed to have a certain fixed character and quantity. It is dealt with by a fixed standard of ability. When once a man is assigned to a particular responsibility, except for age or special disability, the burden of proof rests with any change on the ground of unfitness. It is, in fact, life tenure of that particular assignment. It often happens that the fluctuations of business wipe out specific assignments and then the tenure of the man is not something general for the road, but specific for that particular assignment. Assuming that at the time of assignment he was the most efficient man for the place, he may have altered much since then, but until he has failed grossly he continues to hold his place regardless of how many other men may be better able to hold it. Sometimes the tenure is not for life, but rests on contingencies that have a certain periodicity of occurrence. Then it is only better in this respect, that the term is not so long, but the determination of the term has no reference to the efficiency of the incumbent. Finally, it may be for a term, and at such a time measurements are applied anew and the best man gets the place. To secure the stability of an organization, the incumbent is generally given a definite advantage in the competition. It would be most demoralizing to any organization to periodically uproot every man for reassignment.

In measuring a man the dimensions taken are first naturally those that apply directly to the work in hand; next they are those that apply to future work; and finally they may be considerations entirely outside of the work itself, as personal influence with the management or the big shipper, or they may be past service of a special nature, or they may be long fidelity or seniority. Or as in Germany they may be military service, or as in this country political influence in a particular community.

According as a manager tones up his service all extraneous considerations will be eliminated and immediate fitness for the work in hand will be the governing principle, modified by considerations of past and prospective service that shall make the idea of a service prevail.

"Seniority as the basis of promotion is the most pernicious pretext of justice ever devised. No purchasing agent parcels out his orders to supply men according to their age."—Railroad Clerk, May, 1894.

Fines and premiums are the same thing, only one is expressed in the negative and the other in the positive quality. They are direct penalties for bad, or premiums for good work, and therefore are directly related to personal ability. Pensions or superannuation funds have no relation to education of the individual since they are incurred by contingencies, or the course of nature with which the education of the particular individual pensioned has nothing to do.

Railroads Justified in Providing Means of Education.

The great potency of the railroad as an educational agency for its employees may be obvious, but the railroad being a commercial venture, it is not so clear on what ground the money may be spent for this purpose. There may yet be those who recognize the power of the railroad as an educator and also are able to justify its activity in this direction, but it becomes a question of degree how far as a commercial undertaking the railroad may spend money for this purpose.

The justification must first be purely financial. That it may also rest on moral grounds is due to the close interdependence of economic and moral principles when large groups of men are involved.

There are two kinds of education from the standpoint of the railroad—that of individuals and that of the general body or large classes of employees. Education of the general body or classes of men is like the betterment of fixed property. The great body of men do not move from road to road, nor does their education directly affect their wage scale, while it may vastly alter their efficiency, and so their earning power to the railroad. There can be no question of the value of the training of firemen in firing, train men in air-brake practice, car oilers in car lubrication. It is only necessary that the value of the betterment exceed the expense. Such education can easily be seen to be merely an extension of the ordinary superintendence. It suggests the nature of the transition from discipline to education, which by the American Association of Railway Superintendents has been defined as two terms for one and the same thing.

The advantages of the special education of classes of men can not be doubted, but the good effects of general education are not so easily demonstrated because not so immediate. Practical men know best the value of a general tone and high order of morale and efficiency throughout the service. With the moral qualities, the power of adaptability, of independent thought, of initiative, and of judgment makes the industrial prestige of a country. General education tends to produce this.

After the mere immediate value of the work performed there is a vast personal element in labor, which must always distinguish it from material. It is not a machine, but is exposed to violent changes, which are a tremendous economic element, such as strikes.

The more intelligent the men composing the labor element the better will be the relations between the so-called capitalists and their employees. Ignorance can not deal with questions of philosophy or political economy; men who have ideas and are able to discuss these questions can meet capitalists on better terms and be more just to each other than ignorant men, for intelligence will be respected.—L. Bartlett, master mechanic Missouri Pacific Railroad.

Whenever large bodies of men are dealt with on an economic basis, conditions affecting their entire welfare are involved, and the moral element can not be eliminated. It comes to be a definite economic quantity.

Moral responsibility exists only so far as the railroad has become the trustee of individual rights, which by the higher organization of society have become involved in the general property. This principle is recognized in the necessity for justice and impartial dealing between an officer and his employees for honesty and reliability in all things official, and it operates none the less forcibly

when carried over to the field of education of the employee. The railroad is largely controlling the destinies of its employees by the opportunities for learning and perfecting themselves for higher grades of service which it controls. Education of some sort is being constantly dispensed. That it shall be dispensed equitably to each according to his capacity and assiduity and that the environment thrown around the employee shall be as favorable as is consistent with the good business management of the property is not an unreasonable proposition.

The extent and kind of moral responsibility is a nicer question, in that it depends so largely on local conditions. In some places the conditions of the service are such that the employee has no other resource than the railroad for which he works. Then, too, how far the moral idea enters any relations of the railroads to its employees depends on the general standard that may prevail in the community. The moral element has its value in promoting the healthy loyal sentiment and largest efficiency among the men. So much of railroad economy is based on the efficiency and highest development of the individual that any element in this efficiency can not be ignored.

The railroad already has in a very large degree the plant for education. It has the scholars assembled and can command their attention in a way that no other agency can. It has its scholars classified and ready for efficient educational work. Aside from the great outlay in mere material, plant of shop, office, and track, where things may be learned, it has the actual practical working spirit to instill into the learner the notion of discipline, promptitude, accuracy, and practical use. Therefore for all these reasons it can educate men at the least added cost.

As explained by Mr. George R. Parker at the Northwestern Railway Club in January, 1897, "Railroad officials can do a great deal to assist the educator, because all fields of operation are under their control."

Who shall bear the expense of education is still a question that is settled in all manner of ways. After the common-school system there is little that is generally accepted as the basis of educational support. The higher education was first a matter of private beneficence, and then it became little by little absorbed by the State. Where the education has gone farther, on the one hand has been the claim that it should be merely the training of the man for general responsibilities of citizenship and on the other hand that it should be the specific training of the man to earn his living, and so should teach trades, etc. Again, this responsibility for special education is held to be a function of the State, but the support is levied on that particular trade which it is designed to supply.

Regarding the method to be followed by a railroad in special education, the first and simplest plan is merely to register and classify entrants upon the service and in a rude way lay out their courses of advancement. The next stage is to put each man on individual record, then to appoint some one to have general oversight of the learners, to watch their record, and to have power to change a first general plan of movement according to the special fitness of the individual. Such a man is the "foreman of apprentices" recommended by the Master Mechanics' Association. He would be the man whom the employee would consult in any outside instruction he might undertake. Next would come the progressive examination, and then the examination for full promotion, which would sift and rearrange the men, tending further to facilitate the selective process of education. Then follow libraries, clubs, lecture courses, and finally evening instruction, leading up to the development of the full technological institution.

But the conversion of a railroad into a technological institution, while it might offer a rich field for the enthusiastic educator, would hardly serve the purposes of practical railroad operation, except so far as it distinctly did not interfere with regular work.

Public Aspects of Education of Railway Men.

It is well known that there is no single organized industry that compares for a moment with the railroads for the number of men employed, the amount of wealth involved, the conditions of life and general prosperity affected. Into the great body of nearly 1,000,000 employees are absorbed every year not less than 75,000 young men. Some drift into it, some enter it under spell of the romance, some few enter it definitely as a life career to which their fitness and their inclinations point.

The potency of intelligence and trained efficiency throughout so compact a body, to affect national life and prosperity, can not well be overestimated. It is at least a matter of remark that the qualifications for this service have until very recent years been nowhere specifically recognized in education.

Mr. Charles Francis Adams, ex-president of the Union Pacific, says: "I am as little able to see why education and the higher standards which it introduces should not be as useful in the railroad profession as it is in law or medicine."

In an industry whose effects ramify to every part of our commercial and industrial prosperity, the highest talent and most intelligent administration should be engaged as in our national finances. Intelligent, broad principles are necessary to enable the management to deal with the highly complex problems presented. Producing centers must be protected in their markets. There must not be too little transportation nor must there be too much for the healthy employment of national energy and resources.

The railroad is peculiarly situated in its relation to social questions, beginning with its own employees and extending indirectly to a wide range. It can not be doubted that it is within the resources of intelligence to create conditions that would have made impossible the great Chicago strike. That the higher principles of sociology are coming to the fore in railway management as mere business expediency is attested by the increased attention to employees' relief associations, insurance, superannuation, and disability funds, and the disposition to canvass carefully and in the light of the best principles the whole question of associations among employees.

The influence of railroad men for general intelligence in a community is very great. In the larger cities they are absorbed into the great body of the population, but along the line of road the employee wields a very great influence. At every small town the station agent, with the editor, the doctor, the minister, the lawyer, is the respected influential man of the place. In business he stands for the promptitude, precision, and infallibility of the great corporation which he represents. Even the section hand in the remoter communities becomes a channel through which the ideas of the larger world percolate. The passenger-train service on side lines and in local service has an influence unknown to those who have always traveled by trunk lines. Not a little of the ideas of cleanliness, neatness, and public health in some communities may be traced to the conditions of the coaches that run in that territory. Referring to what existed in his day and is still common in the more sparsely settled communities, President Depew said: "The passenger conductor was the great man in the village where he lived; he was the great man at the terminal where his train went out every morning and came back every night. He could do things that nobody else could do."

All the considerations adduced to show the influence and possibilities of so large a body of men take on new emphasis in light of the fact that they are so highly organized a body, responding so completely to single causes. From the educator's standpoint they are very much of a unit. Their conditions of service, their qualifications of skill and intelligence are practically the same all over the country.

The influence of corporate employ on this great body of men held together in a close, semimilitary organization plays no inconsiderable part in the formation of the national character. Mr. Depew, of the New York Central Railroad, says that railway organization is essentially military. And further, in referring to the effect on the individual: "In the service everyone's eye is on everyone else. There is a generous appreciation of comradeship, at the same time there is a severe criticism of conduct and character of fellow-employees and officers." A writer has said that the tendency of such employ is to produce an abstract sense of duty which no civil avocation has before afforded to such an extent. It trains to habits of promptitude, precision, and responsibility. A considerable part of the service has semipublic functions, which are exercised without any force of civil authority.

In the training and management of this large body of men the State has not interfered to any extent. It has been chary of setting a fixed legal standard for the fitness for different grades of service, even though the safety of the public is vitally concerned. In several States laws have been in force prescribing certain physical qualifications of employees in train service, and again as to hours of labor and the standard complement of men, so far as these conditions affect the safety of the service. But for the most part the railroads have been left to themselves in prescribing the qualifications of their employees and the conditions of safe operation. When accidents occur, the courts determine the negligence from the standard of general railway practice which the railroads themselves have set up. The stationary engineer must have a license from the State to run his little engine; but the locomotive engineer who carries the lives and property of 200 passengers in his hand, the dispatcher who fixes the meeting point, the operator who receives the train order, the signalman who gives the right of track, and the inspector who is responsible for the safe condition of the bridge, have never had their qualifications passed upon by the State.

The principle of State regulation of the qualification of employees is not congenial to the spirit of railway men. The employees look with distrust on such regulations. A proposition made to the grand chief of the Locomotive Brotherhood in October, 1898, fixing a standard of fitness that required one year's experience as fireman, examination in practical mechanics, knowledge of and competency to run a locomotive, and leaving to the discretion of the examining board what is a skilled mechanic, and what shall be "reckless and intemperate habits" to disqualify an applicant, was unfavorably received. The Locomotive Engineer's Monthly, commenting on it said, "We do not believe any license law of any kind can be passed which entirely excludes political factors from the board of examiners."

From the public standpoint there is possible an enormous economic waste in the misdirection of energy and intelligence during their best years of so many young men as every year enter the ranks of the railway service. It is of the highest importance that they be carefully selected and trained with reference to an ultimate fitness, so that there may unfold to each a useful and happy career. It is also of public importance that the general influence of so many in so compact a service be for intelligence, law, and order.

The training of railway men up to a high standard of efficiency has another public significance. Not only does the economical transportation of a country cheapen the cost of production of its exports, and so far give it advantage in the world's markets, but itself constitutes an industry which may look for return in a foreign market. A high type of railway service becomes the pattern for railroads in new countries. Wherever the standards of American railway practice prevail, they carry with them a demand for men trained in American methods, but more especially for the rolling stock, material, and supplies that, together with the service, make that practice distinctive. The standards and practice of

Great Britian are one thing, and of Germany another. According as each prevails the railway manufactures of that country find a market. Mr. H. S. Haines former president of the American Railway Association, has specially emphasized this in several addresses: "If we wait until 50 miles are built from one African seaport and 20 from another into the heart of that continent, all under the British system, we may say farewell for employment thereafter for any American men in those regions, or for the sale of railway appliances of American make."

The place of education in practical railroading is coming to be very fully realized in the last few years. It marks a great transition. Writing in the Railroad Gazette of December, 1887, Gen. James Harrison Wilson says: "After an experience of nearly twenty years in building and managing railroads and studying the economic questions connected therewith, my deliberate conclusion is that the greatest need of the American railroad system at present is technical education for officers and employees of every grade, especially for presidents, managers, traffic managers, and superintendents."

Dr. Chauncey M. Depew, formerly president of the New York Central and Hudson River Railroad, writes: "In these days of thorough training it is almost impossible for a young man of ordinary education to get on in competition with the graduates of Sheffield Scientific School at Yale, the scientific schools of Columbia, the special education of Cornell, the big advantages of the Troy Polytechnic and the Stevens Institute, and the instruction given in many other of the schools and colleges of the United States."

Says a former master mechanic, emphasizing the necessity of education in place of the former indifferent apprenticeship in the shop: "How many shopmen are competent to give accurate reasons for the doing of things; or if competent, care to take the trouble? How many regard their information as their own stock in trade? Some men are too narrow because they have always worked in one shop. Perhaps they are narrow because they have stayed on one road or in one section, or in one country."

The former unreasoning prejudice toward the educated man is rapidly disappearing. Says Mr. H. G. Prout, editor of the Railroad Gazette: "Probably all of us realize that in railroading the day of the educated man has come; the day of the uneducated man is passing."

Mr. L. Bartlett, master mechanic of the Missouri Pacific, writes: "The railroad business of the United States has become a science, and the better educated employees become the more successful in the work performed on our railroads. Of course we must have our 'hewers of wood and drawers of water.' The ranks of this corps can be easily filled, but the workmen in the machinery department, the men in charge of trains, should be men of education and judgment."

The idea has taken most firm hold of the practical men. In an index of the proceedings of the Master Mechanics' Association that comes to the year 1890 the word "apprentice" does not once appear. In the last three annual meetings the education of the apprentice has been made the subject of one of the most important reports of that body. So important has the matter been considered that the committee on apprentices has been made a standing committee to report from year to year. In their report for 1897 they say: "Your committee wishes to say that it considers this general subject as important as any which the Master Mechanics' Association can discuss and in which there is a work to be done ready to hand which is worthy of the greatest pains and best thought of the association."

The Roadmasters' Association of America took up the same subject in 1890.

The relation between the institution of higher education and practical life is more intimate and mutually helpful than ever before. Several of the men who are teachers in our special engineering schools have come out of practical railroad life to accept the chair of the college. There is more conference between

the university and the shop. The mechanical tests made at the shop are the basis of lively discussion at the railway club. The testing plants of the Master Car Builders' Association have just been permanently installed in the laboratories of Purdue University.

Most of the educational activity affecting railway practice has so far been on the technical side, which has evolved a set of distinctively American standards, fitted to the conditions of American operation. There is a feeling, on the other hand, that the economic and sociological sides of railway education have been neglected, to the disadvantage of the railroads and the public, resulting in the growth of theories that are held to be uncongenial to American conditions. Mr. H. G. Prout, editor of the Railway Gazette, voices this sentiment in his remarks at the New York Railway Club in January, 1897:

But the teaching of railroad sociology in the colleges to-day is as often bad as good; perhaps oftener. The young men who lecture on this topic are ordinarily men who have taken a post-graduate course in the German universities or who have been deeply affected by the writings of the German sociologists. They come to their work in American colleges strongly affected by State socialism. They come with an exaggerated notion of what can be accomplished by State control of railroads. They come to work with almost no actual knowledge of American railroads and American railroad men. They proceed, therefore, to project from within themselves a set of railroad officers and a set of railroad conditions as they conceive these officers and conditions to exist, and then undertake to improve them on German principles. The result is a rapid growth in our country of the pernicious notion of extending the powers and duties of Government into industrial enterprises; the rapid growth of the theory that railroad officers are all corrupt and self-seeking and are public enemies just as far as they dare to be.

Mr. Walter G. Berg, principal assistant engineer of the Lehigh Valley Railway, advocating a professional railway course of instruction, says: "A European element should be strictly avoided, and knowledge of the actual working and status of the conditions existing on American railroads should be absolutely requisite."

Answers by a Number of Railroads to Inquiries Regarding the Means of Education of their Employees.

The following questions were addressed to some of the representative roads. Below are given the answers received.

MECHANICAL DEPARTMENT.

1. Is it the policy of the road to educate its own men or to depend on outside supply?

2. If the apprenticeship is contemplated as a general policy of the road, does the road bear any part of the expense of coincident instruction by night classes, etc.?

3. Is there one general supervision of apprentices or is their selection, their instruction, and their distribution among the regular employees left to the discretion and individual convenience of the division officer and not made to accord to any general plan?

4. Is the "time" basis rigidly enforced in your apprenticeship or does the "merit" basis prevail? (By the latter is meant a system that allows credit for special work, outside study, or unusual aptitude, and so far shortens the course to the apprentices.)

5. Is there any implied contract or employment at the expiration of the apprenticeship?

6. Upon the completion of an apprenticeship does the road give certificates or does it recognize similar credentials from other roads?

7. Do you have more than one grade of apprenticeship, beginning with different

stages of fitness and looking to different grades of employment? And if more than one, how many?

8. If it is your policy to incorporate outside instruction with the regular shop-work in your system of apprenticeship, is the work done in the instruction named below found to be of any practical value, so that it can be given recognition; and what are the credits allowed for each?

Degree of M. E.

Certificate from a trade school.

Certificate of technical course in a high school.

Some recognized measure of work done in correspondence schools.

In evening classes.

9. Do your helpers and handy men come from boys in the shop or from those who enter irregularly and after they are grown?

APPRENTICE SYSTEM (GENERAL).

1. Do you have any system approximating a formal apprenticeship in other departments than the mechanical? What departments?

2. In absence of formal apprenticeship do you have in other departments any of its elements, as:

(*a*) Prescribed qualifications for those entering the service?

(*b*) Definite arrangement of the work and stages of promotion with view to an ultimate fitness?

(*c*) Registry and individual record of each individual employee?

(*d*) Is this progression by stages of promotion competitive or mere seniority basis?

(*e*) If competitive, do you employ the best man for the place, whether within or without the service, or do you limit your appointments to promotion only from within the lines of the service or with further restriction only within the lines of a department, or even yet the smaller unit of an operating division of a department?

GENERAL EDUCATION.

1. Do you employ a merit system of discipline?

2. Does the road give a current effect to a merit and demerit system by an award of premiums and of penalties or fines, or is the effect only had in altering the recorded status of the employee and thus entering to determine his promotion or tenure?

3. Does the road sustain reading rooms, or libraries, or a circulating library, as on the Baltimore and Ohio, by baggage car?

4. Does the road systematically stimulate habits of thrift and providence by contribution toward, management of, or offer of general facilities for or penalties for the neglect of insurance against death, disability, or superannuation?

5. In matter of reading rooms, libraries, literary clubs, and general evening classes and lectures in which the road may undertake any responsibilities, does it act direct or through the agency of the Young Men's Christian Association?

T. A. McKinnon, first vice-president Boston and Maine Railroad.

In our machine shops we take a few apprentices and after three years they are given the regular machinists' wages, but as our men remain steadily in the service, as a rule, the number of apprentices is limited.

In all departments of the railroad vacancies are filled by promoting the next in rank, qualification being the first consideration; consequently new men are engaged only for minor positions—as, for instance, in the train service we never go outside the ranks for enginemen or conductors. In engaging men for the position of fireman or brakeman applicants have to undergo an examination, and only men who are fitted for promotion to the position of engineman or conductor are engaged.

I inclose copy of General Order No. 22, which is in effect the Brown system of discipline. We have found this practice to be very beneficial in dealing with our men. There has been a great saving to the men from the discontinuance of suspension, and it enables us to give good men who may have committed a minor offense the benefit of previous good record, etc.

I also desire to state that in connection with the Young Men's Christian Association rooms, which have been established at various points on the road, we encourage a system of evening lectures on various subjects connected with the operation of the railroad, and we have found material benefits from the same. At Concord, N. H., where we have very large shops, the men have evening classes in mechanical drawing, etc.

We also each year take into our engineering department a number of young men, graduates from the Massachusetts Institute of Technology, and after a short term in the office the young men are placed in practical service on the different divisions as assistants to the roadmasters, and we are thus building up a class of men for positions of importance in the roadway department having the technical as well as the practical knowledge of the work to be performed.

General Order No. 22.]

BOSTON AND MAINE RAILROAD,
FIRST VICE-PRESIDENT'S OFFICE, OPERATING DEPARTMENT,
Boston, February 15, 1896.

Commencing March 1 the enforcement of discipline by suspension will be discontinued.

1. Heads of departments will keep a record of the services rendered by each person in their respective departments, and whenever the record of any is so generally unsatisfactory as to unfit him for further service, dismissal will follow.

2. Each person employed will be notified promptly of unfavorable entries made in the record book opposite his name. He will, upon request, be shown his record at any time, but will not be permitted to see the record of another person.

3. Bulletins showing each case of discipline, omitting name, date, train, and location, but containing facts and conclusions and such comment as is applicable, will be issued from time to time, if considered necessary.

4. Dishonesty, intemperance, disloyalty, insubordination, incivility, willful negligence, incompetency, or other disobedience of the company's rules will be considered sufficient cause for dismissal.

5. In the promotion of employees their previous records will be carefully considered.

6. Subordinate officers will see that information necessary to the proper keeping of the record of each individual is promptly forwarded to the head of his department.

The objects to be attained under the new system are:

First, to avoid loss of wages by persons employed, and consequent suffering to those who are dependent upon their earnings.

Second, to stimulate and encourage all persons engaged in company's service in the faithful and intelligent performance of their respective duties.

This system is introduced with the belief that it will be directly beneficial and that it will meet with the approval and cordial cooperation of all concerned.

T. A. MACKINNON,
First Vice-President.

GENERAL EDUCATION.

1. Do you employ a merit system of discipline?—A. Yes.

2. Does the road give a current effect to a merit and demerit system by an award of premiums and of penalties or fines, or is the effect only had in altering the recorded status of the employee, and thus entering to determine his promotion or tenure?—A. Record only.

3. Does the road sustain reading rooms, or libraries, or a circulating library, as on the Baltimore and Ohio, by baggage car?—A. No.

4. Does the road systematically stimulate habits of thrift and providence by contribution toward, management of, or offer of general facilities for, or penalties for the neglect of, insurance against death, disability, or superannuation?—A. No.

5. In matter of reading rooms, libraries, literary clubs, and general evening classes and lectures, in which the road may undertake any responsibilities, does it act direct, or through the agency of the Young Men's Christian Association?—A. Through Young Men's Christian Association.

MECHANICAL DEPARTMENT.

1. Is it the policy of the road to educate its own men or to depend on outside supply?—A. Promotion generally from the ranks.
2. If the apprenticeship is contemplated as a general policy of the road, does the road bear any part of the expense of coincident instruction by night classes, etc.?—A. Apprenticeship only incidental.
3. Is there one general supervision of apprentices or is their selection, their instruction, and their distribution among the regular employees left to the discretion and individual convenience of the division officer, and not made to accord to any general plan?
4. Is the "time" basis rigidly enforced in your apprenticeship or does the "merit" basis prevail? (By the latter is meant a system that allows credits for special work, outside study, or unusual aptitude, and so far shortens the course to the apprentices.)—A. Time basis enforced.
5. Is there any implied contract or employment at the expiration of the apprenticeship?—A. Employment implied. No contract.
6. Upon the completion of an apprenticeship, does the road give certificates or does it recognize similar credentials from other roads?—A. Not generally.

A road in the Northwest of over 5,000 miles.

MECHANICAL DEPARTMENT.

1. It is the policy of the road to educate its own men.
2. The company does not bear any part of the expense of coincident instruction by night classes.
3. In the operating department apprentices, after having taken the necessary course in the accounting department, are assigned to duty with division superintendents, and their progress watched by the general superintendent, who determines their fitness for further promotion.
4. The "merit" basis prevails in promotion.
5. There is no implied contract of employment at the expiration of apprenticeship. Apprenticeship is not for any specified term.
6. The road does not give certificates of apprenticeship, and does not recognize similar credentials from other roads.
7. Apprenticeships are not graded. Apprentices are selected from young men of good family and education, where practicable, and are also selected from the ranks of the employees on account of proved fitness for promotion.
8. We have not systematized apprenticeships in the mechanical department sufficiently to answer the points raised under this question. Apprentices in the mechanical department have, as a rule, only common school education, and do not rise beyond journeymen.
9. Our helpers and handy-men come as a rule from those who enter the service irregularly and after they are grown.

APPRENTICE SYSTEM (GENERAL).

1. We have no system approximating a formal apprenticeship in any department.
2. (*a*) We have no prescribed qualifications for those entering the service. General fitness governs.
(*b*) We have no definite arrangement of the work and stages of promotion. Each individual is advanced as his ability justifies.
(*c*) We keep close record of all employees, except common laborers, and all are considered in the line of promotion.
(*d*) Promotion is competitive, the best man securing promotion.
(*e*) We employ the best men for the place within and without the service, but endeavor always to find them within the service.

GENERAL EDUCATION.

1. We employ a merit system of discipline.
2. We award no premiums and inflict no fines and no penalties other than suspensions.
3. We do not sustain reading rooms or libraries.
4. We make no contribution toward insurance fund.

5. We have no reading rooms for employees.

As in answer to question No. 3 reference is made to operating department apprentices taking a course in the accounting department, I assume that you will desire to know something about such a course.

For the past two or three years we have been taking young men of good education, preferably college men, into the office with the idea of educating them for the position of division superintendent. On this road the superintendents try to find out what the work they are doing costs, and how every little expense they incur or every little saving that they may make will affect the cost of transportation. To that end candidates for these positions are given a preliminary training in the accounting department, so that they may understand how the different items of expense reported by storekeepers, superintendents, and others come into the office, and how they are compiled, to make the total operating expenses of the road. Our course takes about two years. Of course the men have absolutely no knowledge of railroad work and it is necessary during the time to have them spend more or less time at the shops, store houses, and on the road, so that they may become familiar with the sources from which charges are made. After they have had this course they thoroughly understand what we call our "operating sheet," and can realize how any saving that they may make will affect that sheet, and consequently the cost of transportation.

When they have gained this knowledge they are turned over to the operating department, which assigns them to duty with a division superintendent in order that they may gain the practical knowledge necessary to be successful operating men.

Yours, truly, R. I. FARRINGTON, *Comptroller.*

The Boston and Albany Railroad, W. H. Barnes, general manager.

THE BOSTON AND ALBANY RAILROAD COMPANY,
GENERAL MANAGER'S OFFICE,
Boston, Mass., February 6, 1899.

The operation of railroads in this section has not yet arrived at a point where the education of persons is carried on according to methods indicated by your questions, and I am able to answer only a very few of them.

GENERAL EDUCATION.

We have a circulating library at Springfield, which is about the center of the line, from which books are distributed weekly to employees on their request. We have no merit system of discipline.

MECHANICAL DEPARTMENT.

We have three or four apprentices at a time; our shops are not extensive enough for more. We pay them nominal wages at the start and increase the amount each year until the end of the third year, when they are paid wages according to their merit.

Our helpers come from persons entering our employ irregularly.

APPRENTICE SYSTEM.

No formal apprenticeship other than in the mechanical department.

Yours, truly,

W. H. BARNES, *General Manager.*

The Atchison, Topeka and Santa Fe Railway System, C. M. Higginson, assistant to the president.

The Atchison system extends over a very wide extent of country and the needs of the road and also the labor conditions vary widely. This necessitates variety in our dealings with labor matters, and the methods of furnishing our supply of employees differ accordingly.

To start with, the future value of a young man in any branch of the railway service depends largely upon himself, and any young man who is willing to learn and work and who is adaptable will get along and be useful, while one who sees only his day's work and whose object is to get it over will never rise materially or be a person we can depend on. I am glad to say that the average tone of railway

employees is improving, and we are getting more intelligent work done than formerly. In some lines, where rates of pay seem high, we are demanding better service and getting better results accordingly.

To proceed with your several inquiries.

GENERAL EDUCATION.

1. We employ on all lines a merit system of discipline.

2. No fines, but a change in status by merits or demerits. A sufficiently bad record generally can lead to a discharge.

3. We have either reading rooms or Young Men's Christian Association rooms at all important points. We have a superintendent of reading rooms to look after the manner in which they are kept, the character and supply of books and literature, and who, as far as possible, guides the men he meets toward useful reading.

4. The only thing is by making collections for accident insurance companies which have policies upon the men. A benefit association like that on the Pennsylvania, Baltimore and Ohio, and Burlington is a good thing for both the company and the men, but is a point of development which most roads and their employees are not advanced enough for.

5. We act directly in reading rooms, as stated above, and at some points by aiding Young Men's Christian Association work.

MECHANICAL DEPARTMENT.

1. Our policy is to bring up our own men as far as possible, but in the fluctuations of business we often have to get men faster than we can educate them.

2. Our practice varies locally, due to differing conditions. We do not, as a rule, have any classes directly run by the road, but through the Young Men's Christian Association classes and the correspondence schools, to whom we give facilities for reaching the men, we do have regular instruction for men on such matters as air-brake working and have rooms for this purpose at all large shops. As Western roads grow older and the labor supply more stable there will be more done in this direction.

3. No general supervision of apprentices, the matter being under the local officers for reasons mentioned before, except that we give general instructions as to character of young men we wish to enter the service in all departments.

4. As a rule the "time" basis governs, as we wish to have the apprentice have that amount of manual drill. In some cases we make graduates of technical schools "special" apprentices when there is no regular time limit.

5. We agree to give work at a certain rate at end of apprenticeship, but no guaranty of length of such employment.

6. Will give certificates if desired, and to a certain extent will recognize such, but the individual's work governs when he comes on the road and not the certificate.

7. Only one grade at each shop.

8. If by outside instruction of any nature the boy or man does his work better he gets on faster. No credits for items mentioned.

9. As far as possible helpers and handy men are taken from boys in shop, but we have to hire many after they are grown.

APPRENTICE SYSTEM.

1. No regular system, except that in all departments men have to go through a routine of work and experience before being promoted.

2. (*a*) There are prescribed qualifications for entering any branch of the service.

(*b*) The stages of the work and promotion depend mainly on the work done by the individual.

(*c*) A record is kept of all employees in the operating departments.

(*d*) Both features are considered; neither is sufficient alone for the best service.

(*e*) All promotions made from our own service if there is a man we can find anywhere on the system fitted for the work. Sometimes we have to go outside.

One great trouble we have with young men is that those who have the education we would like them to have are not willing to do the amount of ordinary manual work (it may be more or less hard or dirty) which is really needed to insure fitness in a number of departments. After a young man has had a good English,

or better, a high-school education, he can do better work in any department, but as a rule higher than this the average young man will do better at work than at study. The years from 18 to 22 spent at actual work are generally more useful for railway work than the same time at a technical school. Even in departments where technical knowledge is necessary, the facilities for acquiring knowledge are so general that a young man can post up as he goes along on anything he feels deficient in.

New York Central and Hudson River Railroad Company, E. Van Etten, general superintendent.

MECHANICAL DEPARTMENT.

1. If a general education is referred to, the employees are expected to acquire it outside. If a knowledge of railroad methods is meant, there is no special provision for education made by the company, but the foremen in the shops and roundhouses are expected to explain, to a certain extent, the company's methods to those wishing the information.
2. No night classes are maintained. An air-brake instruction car, with an instructor, is maintained by the company, and applicants for position of engineman or fireman are obliged to pass an examination.
3. The instruction of apprentices is looked after by the foremen; there is no general supervisor.
4. The standing of an apprentice is based upon his ability to comprehend orders and to do his work accurately and quickly, which standing is determined by the foremen.
5. No.
6. No; but a letter of recommendation as to merit can be obtained upon application.
7. No.
8. Degrees and certificates do not entitle their holders to any special consideration. If a graduate of a trade school or a technical school enters the mechanical department, the manner in which he performs his work and the ability he exhibits for greater responsibility are the chief factors in determining his advancement when there is an opportunity.
9. Both boys and men are employed as helpers.

The railroad branch of the Young Men's Christian Association, with its headquarters at 361 Madison avenue, New York, exerts considerable influence toward improving the mental condition of the men in the mechanical department. A library well supplied with books on general and engineering subjects is open to all members; annual dues, $3. This association has branches at most of the important railroad stations on the line, and through these members may draw books from the main library, and the use of said library is encouraged as much as possible.

Unless a new employee has given special attention to railroad subjects and consequently can apply his knowledge directly, the benefit he derives from his education is of an indirect character, but works, of course, to his advantage by rendering him capable of comprehending his work more fully, performing it more quickly and accurately than he could otherwise.

APPRENTICE SYSTEM.

1. We have no formal apprenticeship in any other department than the mechanical.
2. Take, for instance, our train service. Persons entering the employ as a brakeman are required to be intelligent, and before they are put to work are required to pass a certain examination on our rules. Brakemen are promoted to firemen and freight conductors, and from freight conductors to passenger conductors, etc., all of which depend upon their faithful discharge of duty and capacity for increased responsibility. Passenger trainmen are also promoted to baggagemen and sometimes to conductors.

GENERAL EDUCATION.

1. We do not employ a merit system of discipline.
2. We award no premiums and have no penalties or fines.
3. See remarks under mechanical department.

4. We have a building and loan association which is conducted under the auspices of the Young Men's Christian Association; a very large number of our employees are insured against accident, which action is encouraged.

5. In the matter of reading rooms, etc. All such arrangements, such as reading rooms, libraries, clubs, evening classes, and lectures are arranged under the auspices of the Young Men's Christian Association, railroad branch.

Pennsylvania Railroad Company, M. Riebenack, Assistant Comptroller.

In regard to the employment and promotion of clerks in the accounting department, applications for positions, to receive consideration, must be made upon a formal blank. Sample is herewith inclosed, being the one upon which a junior clerk makes application; those for senior clerks varying but very little in the arrangement of the text. Upon the receipt of this formal application, if the same is satisfactory, an examination in simple mathematics[1] is granted, and if passed successfully according to our standard, which admits of so much time being occupied and a maximum number of errors, the name of the applicant is placed upon our satisfactory list in the order of correctness of examination and time occupied in performing the same. As vacancies occur in our force, selections are made from this list accordingly.

It is our custom to engage in the service young men about the age of seventeen, educate them in the business, and when they attain their majority and are fully qualified for advancement, promote them to fill the vacancies as they occur in our regular force.

At the time of examination, the conditions under which clerks are employed are specially set forth in printed form, so that the applicant may know, if employment is granted him, just what he may expect in the way of advancement and promotion (sample of this form for juniors inclosed). When employment is offered anyone a letter is written to them, practically reiterating the facts as contained in this blank, which the applicant retains in his possession as his part of the agreement, the printed blank filled out by the applicant being the company's portion.

You will note that we require all junior clerks to take up the study of shorthand and typewriting and attain a certain degree of proficiency therein before they are advanced at certain stages.

We have a regular system for increasing salaries, according to length of service and merit. When the time expires for a clerk to be considered for promotion, report is made upon him by the superior officer, and if his services have been satisfactory and recommendation made that his salary be advanced as provided under the classification, the same is approved; otherwise it would not be made.

While our promotions can not be said to be strictly competitive, basis of seniority alone is not a factor, as outside of the regular stipulated term of service necessary for advancement to a higher rate of pay it is also a rule that if a vacancy occurs in a class, the next meritorious clerk in the classes below is advanced one higher. To a great extent promotions in positions are dependent upon the result of efficiency in previous lines of work and demonstrated ability to fill higher positions. The work done in business colleges, etc., while tending to give the applicants increased knowledge as to accounting methods, is of no material advantage in connection with their employment by us, as we require all applicants to begin on the same grade of work, study the geography of our road, names of its stations and locations thereof, become thoroughly familiar with the titles and names of officers, grades of work on which engaged. They are gradually advanced from one class to another, and transferred from office to office, an effort being made to have them familiarize themselves with the various branches of accounting from an auditing standpoint.

We occasionally employ senior clerks for the purpose of training them in the duties required of clerks in ticket receivers' offices and various other outside positions coming under the jurisdiction of the accounting department. For this class we engage young men who must be single and agree to accept these outside positions, either temporarily or permanently.

In no instance do we employ experienced clerks to fill vacancies in our general office force, except when we have no junior clerks who have been in the service long enough to graduate from the minor classes of work and fill the positions in our regular force, which seldom occurs.

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[1] Include proportion and percentage.

APPLICATION TO THE COMPTROLLER OF THE PENNSYLVANIA RAILROAD COMPANY FOR A SITUATION IN THE ACCOUNTING DEPARTMENT AS CLERK IN THE JUNIOR CLASS.

[NOTE.—The information required below is to determine the eligibility of the applicant, and whether an arithmetical examination will be accorded. The name of applicant will not be placed on the list for consideration, if replies to the questions are not satisfactory, nor if the result of the examination is below the established standard. This application must be made in the handwriting of the applicant.]

1. Name in full.
2. Address.
3. Birthplace.
4. Date of birth and present age.
5. Persons dependent for support.
6. Extent of education.
7. Experience at shorthand and typewriting.
8. If ever employed by this company, in what capacity.
9. Previous employment, length of same, and with whom.
10. Present employment, if any, and with whom.
11. If ever suspended or discharged from any position, by whom and for what cause.
12. Extent of defect, if any, in sight or hearing.
13. If crippled or deformed, in what manner.
14. Nature of any chronic illness.
15. Names and addresses of not less than three responsible persons as reference.
16. Application made at suggestion of ——— ———.

Dated, ——— ——— 18 .

CONDITIONS OF EMPLOYMENT IN THE ACCOUNTING DEPARTMENT AS CLERK IN THE JUNIOR CLASS.

Upon entering the service of the Pennsylvania Railroad Company in the accounting department, as clerk in the junior class, employment is on probation for a period not exceeding six months, at a salary of $20 per month.

At the end of the probationary period, if rendering has been satisfactory, employment will be continued and salary increased to $25 per month, with the understanding, however, that further retention and advancement in the service will depend upon competency and a strict observance of the rules for the government of clerks in the accounting department.

When salary is increased to $30 per month, clerks must at once commence the study of shorthand writing. At the expiration of one year from that time and before their salary will be further advanced, they will be required to pass a preliminary examination to demonstrate the progress made, and at the end of the following year's service, before being again promoted, will be expected to show such proficiency as will enable them to write verbatim, from dictation at moderate speed, and transcribe same correctly.

From the junior class selections are made to fill vacancies in the regular clerkships, preference being given to those most worthy of promotion.

The applicant will signify below, in letter form, whether or not he is willing to accept the above conditions.

PHILADELPHIA, PA., ——— ———, *18* .

Mr. ——— ———.

DEAR SIR: ——— ——— ———.

Respectfully, ——— ———.

Norfolk and Western Railway Company, J. M. Barr, vice-president and general manager.

MECHANICAL DEPARTMENT.

1. It is the policy of this railroad to educate its own men and from them draw our supply of mechanics and officers.

2. The railroad company does not bear any part of the expense of the apprenticeship of its employees coincident to instruction by night classes, etc.

3. There is a general supervision of apprentices, and their selection and placement in the different shops is handled by a superintendent motive power and his general foremen. The steps taken by apprentices in entering our service are

about as follows: Applicants must be not less than 17 years old, of good parentage, good health, and a fair book education. The first step they take is an application in writing, stating age and other facts common to all applications, and what branch of the service they desire to educate themselves for. This application is passed upon by the superintendent motive power, who in turn forwards it to either of the general foremen under whose charge the departments are in which the applicant desires to engage employment. If there is a vacancy into which the applicant can be placed, he is called for and questioned closely by the general foreman, who assigns him to a place as messenger and helper in the tool room, in which room he is required to stay for one year, becoming thoroughly familiar with all of the tools and their respective usages. As soon as he is known to be familiar with all tools and their usages, he is passed into the erecting shop, where our machinery is erected and torn to pieces. He is kept in this shop from one to two years, until he becomes thoroughly familiar with all of the tools and machines in this shop, and when it is known, by questioning from the foreman of this shop, that he has become entirely familiar with the details of this shop, he is passed to the machine shop, wherein are all of the tools and machinery with which all of our mechanical department work is done. He is taken in charge by the foreman of this shop, and after close questioning, worked from one lathe, planing mill, or other machine to another of the same or different class, until he has passed the rounds of all of the machines and has become thoroughly familiar and perfectly efficient in working each and all of them. If then, after close questioning by the foreman, he is found to be fit to be placed in independent charge of work, he is assigned as a regular machinist; this, however, providing that he has served his full four years' course as an apprentice. The four-years' apprenticeship is insisted upon, regardless of merit or conditions. The compensation for this work is 7 cents per hour for the first year, 9 cents per hour for the second year, 12 cents per hour for the third year, and 15 cents per hour for the fourth year, and when he is pronounced an efficient machinist he is paid according to his ability to perform work promptly and satisfactorily. It is after his full apprenticeship has been served that his merit is decided upon as to ability. We have machinists who are paid 18, 20, 22, and 24 cents per hour, and the determining factor in the payment of these salaries is their ability to do work assigned to them.

You will note that the above paragraph answers the questions asked in your question No. 4.

5. There is no implied contract at the end of the apprenticeship; but we draw from the apprentices for so large a percentage of our skilled labor that I believe it is considered among the men equivalent to a guaranteed position when the apprenticeship has been finished.

6. Upon the completion of apprenticeship we give certificates specifying the number of years served as an apprentice and the ability of the graduate classed as "fair," "good," "very good," and "excellent." These certificates, I believe, are issued in nearly all well regulated railroad machine shops of magnitude in the country, and are recognized in the mechanical department of the several railroads as evidence of their ability in the placing of these men in situations. I understand that small railroads, which necessarily do not require any large amount of shop work done, do not, as a rule, furnish such certificates to their apprentices. If, however, we were in need of machinists, or skilled laborers of any kind, and they could not be drawn from our apprentices—that is, if we did not have these apprentices who had completed their full four-years' course—we might employ such skilled labor from the outside, and accept the credentials of outside parties as to the ability of the applicant. This is a matter decided upon wholly by the superintendent of motive power.

7. We do not have different grades of apprenticeship. All apprentices must serve their full four-years' course.

8. We do not issue degrees of M. E.; we do not accept certificates from a trade school; we do not accept certificates of technical courses in a high school; neither do we recognize measure of work done in correspondence schools, nor in evening classes.

9. For our helpers and handy men we require men of considerable physical strength, and therefore they are drawn from outside sources, unless men in other departments can be promoted and better wages paid them.

APPRENTICE SYSTEM (GENERAL).

1. The general organization of railway employees requires that all departments must have apprenticeships. For example: men in charge of engines, as enginemen, are promoted from firemen; firemen, as a rule, are promoted from brakemen

on the head end of the train; conductors are promoted from flagmen; men whose duty it is to assist the conductor in his reports and protect his train by proper flagging and other attention, are stationed on the rear of each train, and are known as "flagmen"—separate and distinct from "brakemen"—and are promoted from brakemen. The brakemen on the head end of the train and in the center of the train are the only men upon each train who can properly be called "brakemen." Our agents, train dispatchers, chief train dispatchers, trainmasters, and superintendents are, as a rule, made from our operators, their fitness for an agency or position as train dispatcher, and promotion from an operator to that situation, being in the hands of the superintendents; their fitness for a position as chief train dispatcher or trainmaster from that of train dispatcher or conductor being in the hands of the superintendents and approved by the higher officers. The line of promotion in the road department necessarily calls for apprenticeship; that is, from a common section laborer to the foreman of a section; then the foremen of extra gangs of men in charge of special work, and going from that position to that of roadmaster; and from that position ordinarily to that of general roadmaster, fitness and experience being the entire factor in such promotion.

2. (*a*) The rules of all well-regulated railroads require that employees be able to read and write, have a common-school education, and such other merits as would fit them for the class of work which they expect to perform. Operators are usually made from messenger boys, who pick up the art of telegraphing while engaged in messenger service about the telegraph offices.

(*b*) Already answered.

(*c*) A registry and individual record is kept of each and every employee, and either an actual or record suspension is recorded against all employees. If deeds of merit are performed and are brought to the attention of the officers, credits are given these employees on these records. The Brown system of discipline is practically in force on this line.

(*d*) In the road, train, engine, and station service the promotions are made from employees most competent to fill the positions, regardless of seniority.

(*e*) We aim to make promotions from ordinary positions to those of higher position from employees of each and all departments, without drawing from other departments or men outside of the service. If it is decided that there is not competent material in these departments from which to make these selections, outside sources are drawn from; but this is not done until it is absolutely known that there are not men in the several departments already employed by us who can fill these more important positions.

GENERAL EDUCATION.

1. We do employ a merit system of discipline, which has been explained in a previous paragraph.

2. No rewards or premiums are paid for efficiency of service, and no direct money penalties are imposed upon the employees, their entire fitness for the services of the company being determined by the merit and demerit system of accounts, such as is explained by Brown's system.

3. This railroad does not sustain circulating libraries or reading rooms; that is, wholly sustained by support of this company, but does contribute largely to the support of such libraries and reading rooms under the direction of the Young Men's Christian Association.

4. We do not operate an insurance feature in connection with this railroad, but have given the exclusive privilege of issuing insurance to our employees to one company, because of a material reduction in the rate given to the employees by this company on account of this privilege. No employee is, however, restricted from insuring in any other company which he may see fit by these instructions.

For your information I beg to advise that the Great Northern Railway line had some years ago a system of reading rooms and circulating libraries, maintained wholly by the employees, with some aid from the railway company; that is, some money contributions and rooms provided in buildings of the company. These reading rooms were conducted somewhat after the style of the Young Men's Christian Association reading rooms, and always contained the leading daily papers and periodicals, and it was aimed to give entertainments in these rooms occasionally. Several very enjoyable entertainments have been given in St. Paul, Minneapolis, and other terminals of that line. This is the only railroad that I know of that has such an arrangement as this.

Railway School at Breslau.

By Dr. Hilscher.

[From the Oesterreichische Eisenbahn Zeitung, No. 9, 1898.]

On October 4, 1897, under the control of the royal railway directorate, a railway school was opened at Breslau, which is intended to provide candidates seeking appointments as secretaries and superintendents in the traffic and goods departments with a practical education, and to teach them also as much theoretical railway science as possible. Civil supernumeraries and candidates for posts in the railway offices are obliged to attend the courses, while this is optional for men residing in Breslau who have recently been appointed and wish to prepare for the examinations for the posts of secretary, traffic or goods superintendents, or for those who desire to attend some or all the courses of lectures.

Disregard of instructions given by the teachers will be considered as equivalent to disobedience to a superior officer.

Officials selected by the railway directorate deliver the lectures, and one of them has been specially chosen to manage the school. The teachers meet together to discuss the interests of the school and to suggest what improvements are advisable. At the end of a school year a report is sent to the royal railway directorate, in which the teachers express their opinion as to the result of the teaching, the discipline, attendance at the courses, the use made of the library, and as to any alterations they deem advisable in the organization of the school.

The lectures take place between 8 and 11 a.m. on three days in the week, two classes being held, if necessary, from the beginning of October to the end of March. The pupils are not made to write papers, but now and again oral examinations are held to find out whether the courses are being properly followed and understood.

The courses are as follows:

1. Constitutional law of the state and the empire, organization of the departments of the state and the empire, executive government of the Prussian state railways, internal regulation of the offices: Thirty lectures.
2. Principal provisions of the law of procedure, of the law as to the tutorial functions and jurisdiction of the administration, discipline, law, and the regulations applying to officers and employees: Fifteen lectures.
3. Geography: Ten lectures.
4. Officers' benevolent institutions: Ten lectures.
5. Workingmen's benevolent institutions: Twelve lectures.
6. Political economy: Ten lectures.
7. Cashier's department: Twenty lectures.
8. Account keeping: Twenty lectures.
9. Arrangements as to fares and freight rates for and additional pay to the train staff: Six lectures.
10. New lines (laws dealing with railway undertakings, preliminary works, compulsory purchase, survey, regulations as to construction): Seventeen lectures.
11. Stores department: Eight lectures.
12. Workshops department: Six lectures.
13. Audit department: Nineteen lectures.
14. Rates department: Fifteen lectures.
15. Customs and taxes: Fifteen lectures.
16. Utilization of rolling stock: Eight lectures.

Obviously it is not yet possible to predict how far this school, which has been organized on novel lines, will come up to what is expected of it. Its special object is to prepare candidates for examination, and there is little doubt that this end will be attained when we consider that attendance at the school will be obligatory and that in Germany departmental regulations must be obeyed.

As for its producing traffic engineers "by teaching as much theoretical science as possible," this can hardly be expected, for nobody becomes an engineer by virtue of simply knowing the laws and regulations as to construction.

Nevertheless, it is a matter for congratulation that Germany, too, has realized the necessity of special teaching for railway men, and that the initiative in this matter has been taken by the only properly authorized body, namely, the State.

CHAPTER XVIII.

UNIVERSITY EXTENSION IN GREAT BRITAIN.

By HERBERT B. ADAMS,
Professor in Johns Hopkins University.

"Promote as an object of primary importance institutions for the increase and diffusion of knowledge."—George Washington.

"Universities are, in their first function, places and centers of research. They are designed to add to and augment the fund of knowledge. They have also the other functions of diffusing and distributing knowledge."—John Morley, at Newcastle, September 22, 1887.

"The higher education of citizens has become an urgent need of the modern democratic state."—M. E. Sadler.

"A man needs education not only as a means of livelihood, but as a means of life."—G. J. Goschen, D. C. L., M. P.

"We advocate education not merely to make the man the better workman, but the workman the better man."—Sir John Lubbock.

"A mere system of popular lectures has no right to the name of University Extension. The business of a university is to promote sound and thorough study and to make thinking men of its alumni. The business of University Extension is the same, the difference is only in the field of operation. * * * I am persuaded that if the University Extension movement loses its character as a student-creating movement and comes to be regarded as a scheme for popular lecturing it is doomed as University Extension; it will fritter itself away without leaving any deep or permanent mark upon the higher educational system of the country."—R. D. Roberts, at World's Congress on University Extension, Chicago, 1893.

"If the Extension lectures had effected nothing more than what is universally admitted they have effected—raised the standard of popular lectures throughout England—they would have justified their institution."—J. Churton Collins, 1899.

"Education of the People is the first duty of Democracy."—Jules Siegfried, President of French Committee, social economy group, Paris Exposition, 1900.

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UNIVERSITY EXTENSION IN GREAT BRITAIN.

PREFACE.

The first American account of University Extension in England appeared in the Report of the Commissioner of Education for 1885–86, pp. 748–749, in the Johns Hopkins University Studies in November, 1887, and in the Amherst Literary Monthly, December, 1887. About that time the writer began to collect materials for this present report. In the American Review of Reviews for July, 1891, he published some preliminary account of "University Extension and its leaders." In The Forum for July, 1891, he described "University Extension in America." This more elaborate report is published as an American contribution to English educational history and withal as an introduction to "Educational Extension in America" or to the more significant popular educational movements now in progress in America.

While the present report is more strictly historical, relating to the origin and development of the English University Extension movement, the writer, in the summer of 1896, personally attended summer meetings of University Extension students at Cambridge and Edinburgh and contributed to the Education Report for 1897–98 an account of "Summer schools in England, Scotland, France, and Switzerland." In that supplementary account attention was devoted to the following special subjects: (1) The National Home Reading Union and its summer meeting at Chester; (2) A summer meeting in Cambridge; (3) The Edinburgh summer school; (4) An Oxford summer meeting; (5) Vacation courses in Paris; (6) Summer schools in Switzerland.

I. HISTORICAL INTRODUCTION.

University Extension is undoubtedly a part of a larger democratic movement which in England has gradually advanced during the nineteenth century. It is remarkable that so many great landmarks of popular progress in our mother country have been established within the memory of living men. The widening of the suffrage by successive reform bills, the emancipation of Catholics, Jews, and women, the institution of compulsory education for children, the establishment of local examinations, local lectures, local colleges, and colleges for women, these are all very recent events and indicate the popular direction in which England has been moving. The extension of political privileges to the English people only foreshadowed the extension of the universities and of higher adult education. The democratization of learning, religion, government, and society is the essence of modern history.

Popular education, like popular government, reformed religion, and classical revivals, is not absolutely new in principle or practice. There is nothing new under the sun, not even electricity, or the gold of Klondike. Men simply find things; they rediscover old facts, ancient principles, the primordial laws and forces of Nature; they make fresh applications of eternal truth to wider human needs. Education, like all science, comes as fast as the growing wants of society and the developed capabilities of man. In a certain sense, as Lessing and Herder showed, true educa-

tion and revelation are identical. New inspirations continually break forth from sacred scriptures and from the infinite books of Nature and human experience which men call history.

> Out from the heart of Nature rolled
> The burdens of the Bible old.

Popular education is as old as the recorded experience of the chosen people, who were, in a religious sense, the educators of Europe, the heralds of the essential truths of Christianity. The Priests and Levites "went about throughout all the cities of Judah and taught the people" (II Chronicles, xvii, 9). Itinerant teachers and preachers were thus foreordained. In the year 64 A. D. the high priest Joshua Ben Gamala imposed upon every Jewish town and village the obligation to sustain a common school. Thus, by nearly sixteen centuries, was anticipated the Massachusetts' idea of compulsory education. Rabbinical schools, with popular teaching in synagogues, flourished throughout the Middle Ages, as did the catechetical, monkish, and cathedral schools of the Christian Church. The educational essays of Brother Azarias, that faithful Catholic scholar and true poet, the lamented head of Rock Hill College, Ellicott City, Md., proved conclusively to American readers that the mediæval church did not neglect either primary or popular education. All was given that the times really needed or demanded.

The rise of colleges and universities can not be explained without reference to the cathedral and cloister schools of the Middle Ages. Even the education of women, which some modern universities still obstruct, was provided for in mediæval nunneries, the historic forerunners of all modern seminaries and colleges for women. Witness that cloistered school at Gandersheim in north Germany, where, in the tenth century, a clever nun Roswitha[1] wrote Latin plays in imitation of Terence, for her companions to act. Verily there is nothing new in education. The miracle plays of the Middle Ages were popular dramas. Monks and nuns, priests and friars, Christian poets, and wandering minstrels were teachers of the common people. Folk-lore, folk-songs, popular lives of the saints, Christian art and architecture, frescoes or wall paintings, cathedral portals, and parish churches were veritably open books, known and read of all men and women in the "Dark Ages" (falsely so called) before printing was invented and learning made easy.

The gymnasia of modern Germany were based upon mediæval and monkish foundations, upon confiscations of ancient religious endowments. In reading an autobiographical account of the German school training of the late Dr. Frederic Henry Hedge, of Harvard University, one is impressed with a graphic account of the first gymnasium which he attended. It was situated in a romantic valley on the southern side of the Harz Mountains:

> The school buildings, a congeries of quadrangles with other structures, including a church, had once been a monastery; the boys' rooms, stretching along two or three corridors, were the identical cells formerly occupied by the monks, rooms about 10 feet square, with little bedrooms (*Kammern*) attached. * * * Underneath the portion of the building inhabited by the officers and scholars was the crypt, lined with perpendicular tombstones, each faced with an effigy in relief of the sainted brother who slumbered beneath.

Is not this a striking picture of the historic relation of modern schools and schoolmasters to their mediæval forerunners? Frederic Henry Hedge, taken when a little boy to Germany by George Bancroft to be educated, was probably one of the first native Americans to discover with his own eyes the monkish foundations of European culture. He spent two years in that German gymnasium in the Harz Moun-

[1] Pertz, Monumenta Germaniæ, iv. 306-335; Giesebrecht, Deutsche Kaiserzeit, i. 780. On the subject of "Nuns" in mediæval times, see Montalembert, Monks of the West, v. 213-361; Lingard, Anglo-Saxon Church, i. chap. v; ii, 263-266; Alice C. Osborne, Roswitha, the Nun of Gandersheim, New Englander, Nov. 1881; On the learned women of Bologna, see Madame Villari in Popular Science Monthly, 1878, p. 185, or the International Review, March and May, 1878.

tains and there learned to talk with his masters and fellow-students the scholastic language inherited from old Rome and semi-popularized for all the churches, schools, and colleges of Christendom by pious monks and friars, the so-called "schoolmen" of the Middle Ages. The American schoolboy Hedge went from the Harz monastic school to Schulpforte, then the pet institution of the Prussian Government. This model modern German gymnasium lies on the river Saale, about 16 miles from Weimar, in Goethe's time the Athens of German culture. Dr. Hedge, in his autobiography, said Schulpforte was "a community of itself, independent of any municipal control. The main building, or collection of attached buildings, including a church, like the other school had once been a monastery. * * * The whole was inclosed with a wall of a mile or more in circumference. * * * For Prussian citizens, Schulpforte was a free school." The educational history of Germany can doubtless show many similar examples of the historic transition from the old order to the new, from the cloistered school of the monk to the free schools of modern Prussia, the pedagogue of nations.

Turning from Germany to England we find that from monkish beginnings, mediæval church foundations and modern confiscations of religious endowments proceeded the older endowed public schools, those famous Latin or classical grammar schools, from which historic types the Boston Latin School[1] and all the earlier academies and preparatory schools in America were derived. England was never destitute of educational provision for the sons of the people. We have only to study English local history to discover what generous endowments were made for public schools like Rugby, founded in the days of Shakespeare. And yet these educational institutions were usually for the benefit of boys. The education of girls was not publicly provided for in Old England or New England. Although the Puritan Fathers of Massachusetts established compulsory education in 1647, girls were not admitted to the public schools of Boston until 1802. English or American colleges for women were unheard of before the present century. Indeed, by formal academic vote, as late as May, 1897, women were denied degrees at Cambridge, England. While many popular features of school, college, and university education have come down to us from the Middle Ages, there was, after the Reformation, a manifest narrowing[2] of educational privileges, even for young men, under the English ecclesiastical establishment, in favor of the sons of the rich and prosperous. Until the second half of the nineteenth century there was no legal right to university education for nonconformists, for women, or adult citizens.

Europe has witnessed a succession of great popular extension movements in the broad fields of education, religion, and politics: 1. The revival of learning, which extended the influence of classical culture, at least for the educated classes, the humanists, down to our own day. Education, like society, has its seasons of wintry decay and of springtime revival. The fresh enthusiasm of the early schools of Ireland, England, and the Frankish Empire of Charles the Great was succeeded by Scholasticism, which, in its turn, was followed by the Italian Renaissance or the Revival of Learning, which brought new life and energy to Europe. From impulses then received, from the popular extension of this revival of learning a new world sprang into being. On this revival the colleges and universities of Europe have been living now for more than four hundred years. While humanism will doubtless long remain as vital in the process of education as are the forces of nature in the renewal of life, nevertheless it can well be understood how inherited methods of classical and

[1] See "Boston's First School," in Evening Transcript, April 15, 1899.

[2] Lord Salisbury once said: "It is the inevitable law of affairs that whenever you establish educational facilities for the poorest classes, gradually higher classes take possession of them. This is not the first time in our history that efforts have been made to educate the people; efforts were made centuries ago to do this by means of endowments. We have had public schools, universities, and grammar schools, all of them representing the efforts of benevolent persons to educate the poorer classes; but in each case the richer classes stepped in and appropriated what was meant for the poor."

the earlier philosophical training should have become somewhat antiquated and insufficient for the needs of the nineteenth century. New interests have dawned upon society. The lessons of antiquity and the finespun systems of mediæval and modern theology can no longer monopolize the attention of youth who are eager to become active citizens of a modern republic. Society itself is now an object of scientific study. The languages and literatures of the modern world have awakened attention. Politics and economics, laws and institutions, the modern state in which we live and move and have our civic being have become more interesting to many university men than were once antique forms of thought and speech. The great world of external nature, too, has begun to attract the minds of teachers and students. New methods of university education, new ways and means of bringing it into harmony with the needs of a democratic age, have been gradually developed.

Among these new methods is University Extension, which is a movement toward educational democracy. College men have come out from the cloisters and quadrangles of those conservative old universities of Oxford and Cambridge and have brought to the English people, in their towns and rural districts, some of the best fruits of sound learning in the form of local lectures, given in systematic and instructive courses. University Extension is an organized effort "to bring the university to the people when the people can not come to the university." University Extension is "advanced systematic teaching for the people, without distinction of rank, sex, or age, given by means of lectures, classes, and written papers during a connected course, conducted by men 'who believe in their work, and intend to do it'—teachers who connect the country with the university by manner, method, and information."

2. A second wave of popular extension which has swept over Europe is called religious reformation, Catholic and Protestant, which originated far back in the Middle Ages in the teaching and popular preaching of pious monks and friars, and gradually introduced a more individual as well as a more democratic spirit into the church and all its branches. The translation and printing of the Bible into English, German, French, and all the modern languages; the conversion of many old forms of religious service into the vernacular, or familiar speech of everyday life, aided the democratization of religion. The common people heard the gospel gladly in Palestine, Old Rome, and throughout the Middle Ages, when it was interpreted to them; but there were no mediæval preachers or teachers so powerful as the humanists, who printed Bibles and other good books, which awakened the intelligence of common readers. The spirit of religious liberty, like the revival of learning, was not absolutely new. Modern history, largely viewed, is simply the extension or popularization of ancient freedom and knowledge, both divine gifts to men. What once belonged to the privileged classes now belongs to all.

3. A third great wave, or a succession of waves, still mounting higher, may be seen in the political revolutions of England, America, France, Germany, Italy, Portugal, Spain, Cuba, and South America; in fact, throughout the world. These movements extend everywhere the spirit of Germanic self-government and of ancient civic freedom. The extension of culture and the growth of the spirit of liberty in church and state prepared the way for popular government upon a large scale. It is the expansion and popular character of modern republics and federations; it is the extension of suffrage and representation with other political privileges; it is the democratization and gradual Christian socialization of united states and federal empires that distinguishes the modern from the ancient world. Popular education is inseparable from modern democracy. This vast and growing educational movement is the ground swell of the nations, lifting them to greater moral power and to more efficient combination—

> When the common sense of most shall hold the fretful realm in awe
> And the peaceful earth shall slumber lapt in universal law.

The civic education, not merely of youth, but of men and women, education continued for life, as are religion and morals, will be a powerful means for the salvation of modern society. Christian education is a larger catholicism which will yet redeem the world. In the higher education of the people, human culture, religious reformation, and political progress may perhaps find at last their synthesis. In fact, they seem to be doing so already in America, where schools, universities, churches, and states, although apparently distinct, are, after all, united in spirit and represent a common people.

II. HISTORIC DEFECTS OF ENGLISH UNIVERSITIES.

In the eye of the law all English colleges and universities were originally charities and still are charitable institutions. Vernon Lee, in an article on "Democracy and our old universities," published in the Contemporary Review November 18, 1892, said:

> The colleges were originally, like the old hospitals, eleemosynary establishments, and like the monasteries, under a common rule of life, and intended primarily for religious purposes. From the original statutes of the colleges, moreover, it is abundantly clear that they were, in many cases, founded "ad studendum," i. e., with the idea that the inmates should devote themselves to study, not to teaching. Their founders desired their inmates to acquire more learning themselves, but did not require them to impart more learning to others.

This was an educational ideal not unlike that of many monkish or religious establishments, where the various acts of worship were primarily for the love of God and the brethren, and not for the multitude at large. This religious ideal was the historic and natural forerunner of the modern ideal of science as fostered for its own sake rather than for the benefit of the people. Both ideals have their historic rights, but there are no rights without social duties.

The Protestant Reformation had, on the whole, a bad effect upon English university education. In the first place, the intolerance of church parties forced many Catholic scholars to withdraw from the country and seek refuge in the new Catholic seminary founded at Douay in 1568, as Greek philosophers found shelter in New Persia from the intolerance of that orthodox emperor, Justinian. In the second place, the yoke of the established church was laid heavily upon Oxford by Robert Dudley, Earl of Leicester, who became chancellor of that institution in 1564 and who, in 1581, introduced the religious test. Every student above the age of 16 years was required at matriculation to subscribe to the Thirty-nine Articles.

"Thenceforth," says the Hon. G. C. Brodrick, in his History of Oxford, p. 92, "the University of Oxford, once opened to all Christendom, was narrowed into an exclusively Church of England institution, and became the favorite arena of Anglican controversy, developing more and more that special character, at once worldly and clerical, which it shares with Cambridge alone among the universities of Europe."

Critics of modern English university education have not been lacking since the days of John Milton, the Puritan publicist, who, in his Reason of Church Government, thus spoke of Cambridge, his alma mater: "As in the time of her better health, and mine own younger judgment, I never greatly admired her, so now much less." Edward Gibbon, in his autobiography, said: "To the University of Oxford I acknowledge no obligation; and she will as cheerfully renounce me for a son as I am willing to disclaim her for a mother." Gibbon regarded the time he spent at college as the most unprofitable in his life; but Huxley says, "If Gibbon could revisit the ancient seat of learning of which he has written so cavalierly, assuredly he would no longer speak of the 'monks of Oxford sunk in prejudice and port.' There, as elsewhere, port has gone out of fashion, and so has prejudice—at least that particularly fine old crusted sort of prejudice to which the great historian alludes."

Adam Smith, in his Wealth of Nations, declares that "The discipline of colleges and universities is, in general, contrived, not for the benefit of students, but for the

interest, or more properly speaking, for the ease of the masters." He said also that in the University of Oxford the professors had given up even the pretense of teaching. It is a well-known fact that, throughout the eighteenth century, English universities were not largely productive of good results either in science or education. The best scientific and literary work was done outside academic walls. Professors regarded their chairs as founded for comfortable professorial support and took little pains to lecture or to instruct. It is said that one nonresident professor felt himself seriously aggrieved because he was compelled to make a journey to the university four times a year for the purpose of drawing his salary. After many fruitless efforts to persuade the authorities to send him his hard-earned money in quarterly installments, he began to devote himself to original research sufficiently to discover an ancient statute which required the university to forward his stipend without delay or inconvenience to himself. Such was the self-sacrificing spirit of at least one English professor in the eighteenth century.

Mr. Gladstone, in his address to Oxford students upon the subject of "Universities,"[1] speaking of this period of decadence after the Reformation, said:

To her manifest and, indeed, hardly measurable superiority in the earlier centuries Oxford had now bid a long farewell. It was, indeed, a century too polemical to be favorable to the development of a vigorous academic life. It seems, however, that other and not unimportant influences helped to lower the academic pulse. Ascham says that among the prevailing evils there was none more grave than the large admission of the sons of rich men indifferent to solid and far-reaching study, while Bucer recorded his opinion that the indolent fellows who were growing old on the different college foundations were an incubus to the university.

Huber, writing of English universities in 1839, said:

At the present day there prevails, without any doubt, in public opinion a more or less unfavorable judgment, and in its extremes an implacably hostile feeling against Oxford and Cambridge, which is proclaimed in every variety of tone and manner from the most different quarters.

Cardinal Newman, in his discourse in 1852 on the Idea of a University, said of Oxford that it was "about fifty years since that university, after a century of inactivity, at length was roused, at a time when it was giving no education at all to the youth committed to its keeping, to a sense of the responsibilities which its profession and its station involved."

As regards college students, note this satirical account of a Scotch university given by Thomas Carlyle in his Sartor Resartus:

Had you, anywhere in Crim Tartary, walled in a small inclosure; furnished it with a small, ill-chosen library; and then turned loose into it eleven hundred Christian striplings, to tumble about as they listed, from three to seven years; certain persons, under the title of professors, being stationed at the gates, to declare aloud that it was a university, and exact considerable admission fees—you had, not indeed in mechanical structure, yet in spirit and result, some imperfect resemblance of our high seminary.

These criticisms are doubtless somewhat exaggerated and probably present one-sided pictures of English university education, but there is often a certain historic truth even in caricatures. In any case they serve to illustrate, in a striking manner, the weakness of the old order which was destined to yield to the strength of the new.

III. ACADEMIC PIONEERS.

DR. GEORGE BIRKBECK (1776–1841).

This man deserves a foremost place among the historic leaders of the nineteenth century movement toward the higher education of the people. He early received a medical education in Leeds, London, and Edinburgh, where he took his degree of

[1] London Times, weekly edition, October 28, 1892. See also The Guardian, October 26, 1892.

M. D. Afterwards elected to a professorship in the Andersonian Institution at Glasgow, he began in 1799 to lecture upon natural philosophy or physics. Having no good apparatus, he was obliged to construct certain instruments for the conduct of his experiments. He had to employ unskilled workmen and was so impressed with their lack of training that he proposed to give them a course of instructive scientific lectures. The trustees of the Andersonian Institution, to whom he communicated his project in March, 1800, did not encourage the idea. They looked upon Dr. Birkbeck as a dreamer, but he actually realized his dream. His lectures to over 500 mechanics in Glasgow, at the beginning of the present century, were the practical beginnings of Glasgow Mechanics' Institute, the first of its kind in the world.

Dr. Birkbeck removed to London in 1804. Here he practiced medicine for many years, but never lost his early interest in the higher education of workingmen. In the Mechanics' Magazine for October 11, 1823, appeared his "Proposals for a London Mechanics' Institute." This was organized in the following December.

The St. James Chronicle of May, 1825, greeted this first popular establishment for higher education with these cheerless words: "A scheme more completely adapted for the destruction of this empire could not have been invented by the author of evil himself, than that which the depraved ambition of some men, the vanity of others, and the supineness of a third and more important class has so nearly perfected." More than 1,000 workingmen were enrolled as members of the institution the very first year of its history and paid their subscription. Dr. Birkbeck was chosen president, and he held that office until his death in 1841.

In the University Extension Journal for May 1, 1890, there was a good account of the Birkbeck Institution and a report of an interview with Mr. G. M. Norris, LL. B., who had then been principal of the institution for six years. Mr. Norris said:

Some time after the death of Dr. Birkbeck on December 1, 1841, the institution became known by its present title. Its history from that day to this has been the history of growth—and growth in spite of many difficulties. In 1844 the number of members diminished to 750, but this state of things did not last long. The present building [in Chancery Lane] was opened by the Prince of Wales on July 4, 1885. An idea of the magnitude of the present work of the institution can only be formed by a detailed examination of the comprehensive class list. Nearly every department of knowledge is represented and in each branch—whether technical, secondary, or higher—classes are arranged to meet the needs of students in various stages of progress. Our students have met with remarkable successes in the London University examinations, and at those of the science and art department. Last year Whitworth exhibitions were gained by two students, while our candidates gained 36 prizes and 833 certificates. The total number of students attending the institution last session during the four terms was 11,735, while the number of entries for the various classes was 14,104. It is estimated that nearly a third of the number of students are women.

It is often said that mechanics' institutes are now monopolized in England by people who are not mechanics. Upon this point Mr. Norris observes that a great change has taken place in the condition and status of the working classes. The mechanic and the artisan are no longer to be numbered among the great unwashed. The persons attending the classes are drawn from all ranks of society. "We do not require our students to state their occupations, as a rule, but in the register of entries for the science and art department examinations these particulars are recorded. On one page you see," said Mr. Norris, referring to the register, "we have a dental apprentice, clerk, draftsman, elementary teacher, engineer, clock maker, and carpenter." Birkbeck Institution is to-day one of the most active centers of University Extension work.

Dr. Birkbeck was one of the original founders of the University of London, which represents the beginning of the modern secular and democratic movement in university education. Glasgow and London were the original points of departure for the first great popular movement for higher adult education throughout Great Britain and America, by means of so-called mechanics' institutes. They were originally

designed for workingmen, but, like many other popular institutions—for example, mercantile libraries—they have proved of great practical benefit to all classes. In 1852 there was formed a union of over 300 mechanics' institutes in England. Two years later the Society of Arts in London established for these institutes a system of examinations for the encouragement of adult education. The success of this experiment suggested, in 1857, the idea of local examinations, under university auspices, throughout England for the improvement of schools and teachers. This was one of the historic beginnings of University Extension, as we shall further see.

THOMAS ARNOLD (1795–1842.)

Thomas Arnold was educated at Oxford and spent several years at that university as a graduate student. He pursued an extensive course of historical reading in the libraries of Oxford, and there received his first impulse to become an historian. After a few years of local experience as a tutor of boys he became head master of the great public school at Rugby. It was once prophesied that Arnold would transform the educational system of England, and this he actually did. At the time of his entrance upon the head mastership the moral and intellectual condition of English preparatory schools was at low ebb. Arnold succeeded in reforming Rugby by infusing into the school a better moral and religious tone. He believed that in English boys were to be found all the defects of English citizens and of English social life. The same arrogance on the part of the rich, the same contempt for the poor, the same tyranny of class over class, and the same lack of sympathy and tolerance prevailed among schoolboys and in society at large. Dr. Arnold believed that if he could reform public school life, he could reform England. How well he succeeded may be judged from the spirit which the graduates of Rugby carried to the University of Oxford, and from Oxford into the world. Arthur Penrhyn Stanley and the Broad Church movement indicate what Arnold's influence was upon English religious life and thought. Thomas Hughes and other progressive university men entered Parliament and became the exponents of those liberal ideas which they had learned from the head master of Rugby.

Dr. Arnold was positively the first teacher to introduce into the school life of England the fresh current of modern studies. Before his time the curriculum had been confined to classical culture. While devoting himself in his own private studies to the history of Rome and to his edition of Thucydides, Dr. Arnold had such a keen appreciation of the importance of modern history, of the modern languages, and particularly of English literature, that he determined to introduce all these elements of nineteenth century culture into the school course at Rugby. The influence of this generous policy soon became apparent. The young men who went from Rugby to Oxford showed minds of broader sympathy, of more positive grasp, and of sounder learning than did schoolboys who had been trained merely to a knowledge of syntax and verse making.

So great was the interest created by Dr. Arnold's teaching and writing upon historical subjects that in later life he was called from Rugby to Oxford to lecture upon modern history. Up to that time the historical department at Oxford had been more dead than alive. Dr. Arnold brought a spring flood of enthusiasm into the old course of university study and from his time until now there has been a steady increase of academic interest in historical and political science.

An earlier incumbent of the chair of history at Oxford, Prof. Edward A. Freeman, made no secret of the fact that his entire philosophy of history was colored by the writings and teachings of Thomas Arnold. Freeman's great doctrine of the essential unity and continuity of human history was the idea of Arnold. The thought that there is no break between ancient and modern history, that Greek politics, when properly studied, are but an introductory chapter to modern politics, was

derived from Arnold's course of lectures given at Oxford in the year 1842. This idea was transmitted to America in many vital ways.

There is another aspect of Arnold's educational work which is not so well known. Amid all his numerous labors as a practical teacher of boys, as the head master of a great public school, as an editor of the classics, as the historian of Rome, and as a writer for English periodicals, Arnold found time to engage actively in the work of popular education in the town of Rugby. As early as 1834 he wrote to the Archbishop of Dublin: "Do you know that we have got a sort of mechanics' or tradesmen's institute in Rugby, where I have been lecturing twice upon history, and drawing two great charts, and coloring them to illustrate my lecture? I drew one chart of the history of England and France for the last three hundred and fifty years, coloring red the periods of the wars of each country, black the periods of civil war, and a bright yellow line at the side to show the periods of constitutional government, etc. I have some thoughts of having them lithographed for general use."

Dr. Arnold not only lectured to the Mechanics' Institute of Rugby, but he also took a decided interest in the improvement of the condition of the working classes throughout England. He contributed articles to the newspapers, and at one time even founded a journal, the expense of which he defrayed from his own purse. He expended about $1,000 in this enterprise, which proved for him a losing venture, but the educational effect was not lost. The articles were copied into the Sheffield Courant, a more popular organ conducted in the interest of the workingmen of England, and, by the request of its editor, Dr. Arnold continued to write upon economic and social subjects. His papers were said by Dean Stanley to have been read with great interest by the mechanics and working classes. Dr. Arnold once wrote Mr. Justice Coleridge: "I would give anything if I could organize a society for the purpose of inquiring into the actual condition of our English workingmen." His desire was later realized by the authority of Parliament, and by the organized statistical inquiries of England and America.

In his own individual labors for popular education Dr. Arnold insisted upon one idea, which should prove of permanent and suggestive value to all would-be popular educators. He insisted upon continuity of instruction,[1] whether through lectures or writings for the press. He said, "All instruction must be systematic, and it is this which the people want." He said they need to have the origins of things explained, and comprehensive outlines of development, "not a parcel of detached stories about natural history, or this place, or that man, all entertaining enough, but not instructive to minds wholly destitute of anything like a framework in which to arrange miscellaneous information. And I believe, if done spiritedly, that systematic information would be even more attractive than the present hodge-podge of odds and ends. And above all be afraid of teaching nothing. It is vain now to say that questions of religion and politics are above the understandings of the poorer classes. So they may be, but they are not above their misunderstanding, and they will think and talk about them, so they had best be taught to think and talk rightly."[2]

Dr. Arnold's views of popular education were perpetuated by his pupils, especially by Thomas Hughes ("Tom Brown"), one of the founders of the Working Men's College in London (1854).

FREDERICK WILLIAM ROBERTSON (1816–1853).

When Thomas Arnold gave his first and last courses of lectures on modern history at the University of Oxford (1842) there was present in the vast audience of students

[1] This is now the main feature of all University Extension work in contradistinction to that of the old-fashioned lyceum or single-lecture system for popular entertainment.

[2] Stanley's Life of Dr. Arnold, 197.

a young man named Frederick William Robertson, who afterwards publicly described the scene. Says Robertson:

It was my lot during a short university career to witness a transition and a reaction, or revulsion of public feeling with respect to two great men. * * * The first of these was one who was every inch a man—Arnold, of Rugby. You will all recollect how in his earlier life Arnold was covered with suspicion and obloquy; how the wise men of that day charged him with latitudinarianism, and I know not with how many other heresies. But public opinion altered, and he came to Oxford and read lectures on modern history. Such a scene had not been seen in Oxford before. The lecture room was too small; all adjourned to the Oxford Theater, and all that was most brilliant, all that was most wise and most distinguished, gathered together there. He walked up to the rostrum with a quiet step and manly dignity. Those who had loved him when all the world despised him felt that at last the hour of their triumph had come.

Robertson went forth from Oxford a thorough convert to Arnold's broad and liberal views of Christianity. Like Arnold, he felt that the Church of England had a social mission beyond her religious pale, and that the growing antagonism between the classes and the masses ought to be broken down. "Though his tastes were with aristocracy, his principles," he said, "were with democracy. His duty to the race was stronger than his sympathy with a class." [1]

The period of Robertson's most remarkable social activity was from 1847 to 1853. During this time he was settled in Brighton as the incumbent of Trinity Chapel, a post which he held until the end of his life. Aside from his wonderful preaching and writing, the record of which has been given us in Robertson's Life and Letters, edited by Stopford Brooke, perhaps the most interesting of all his public labors was the upbuilding of the Workingmen's Institute at Brighton. This was a kind of workingmen's club, embracing 1,500 members. They paid a penny a week for club privileges, which consisted of a library, a reading room, and opportunities for lectures and discussions. The clubhouse was papered and furnished by the men themselves. They paid for a large part of their books and papers. Robertson secured some practical aid and cooperation from his wealthy friends. Here is an extract from a letter written to Lady Henley:

I am anxious to enlist your sympathy in the cause which I am trying to assist. The case is this: About 1,100 workingmen in this town have just organized themselves into an association, which by a small weekly subscription enables them to have a library and reading room. Their proceedings hitherto have been marked by singular judgment and caution, except in one point—that they have unexpectedly applied to me to give them an opening address. A large number of these are intelligent Chartists, and there is some suspicion in a few minds as to what will be the result of this movement, and some suspicion of its being only a political engine. My reasons for being anxious about this effort are these—it will be made. The workingmen have as much right to a library and reading room as the gentlemen at Folthorp's or the tradesmen at the Athenæum. The only question is, whether it shall be met warmly on our parts, or with that coldness which deepens the suspicion already rankling in the lower classes, that their superiors are willing for them to improve so long as they themselves are allowed to have the leading strings. The selection of books for the library is a matter of very great importance, as I have become aware, since getting a little insight into the working of this institute, of an amount of bitterness and jealousy and hatred of things as they are, which I had not before suspected in its full extent. And people go on saying, "Peace, peace, when there is no peace." [2]

Robertson, in his opening address before the Workingmen's Institute, took strong ground against French socialism, which was then (1848) creeping into England. In fact, we should regard the revolution of 1848 as a tidal wave of popular uprising throughout all European countries. In this wave there was much that was good and some things that were wholly bad. Robertson endeavored "to destroy the errors of socialistic theories, not by denouncing them, but by holding forth the truths which lay beneath them and gave them their vitality; to show that these truths

[1] Life and Letters of Robertson, 117.

[2] Robertson's Life, 116.

were recognized in Christianity, and placed there upon a common ground, where the various classes of society could meet and merge their differences in sympathy and love."

Robertson never hesitated to speak frankly and boldly to workingmen concerning the dangerous tendencies of the times, the antagonism toward religion and the church and the introduction of skeptical literature into the institute library. He endeavored to promote "a healthier tone" and develop greater social harmony among the members of the institute. Indeed, he succeeded in stemming the tide of irreligion and social anarchy at Brighton. He was so highly esteemed by the workingmen for his fearless and manly leadership that they offered him the presidency of the institute. "The workingmen of Brighton felt that at last a minister of the Church of England had entered into their aspirations and their wrongs. And because they were sympathized with as men, and neither patronized nor flattered, neither feared nor despised, they were ready to lay aside prejudice and hear what a man of another class than their own had to say upon the subjects which were agitating them." Robertson's biographer says that "of all the small band who in 1848, 1849, and 1850 set themselves to remedy the evils which oppressed the poor mechanic, he has the greatest influence. While in other quarters the breach between the rich and poor was at least temporarily widened, in Brighton it was narrowed." (Life, 363.) It may be added that the force of Robertson's personal example, like that of Thomas Arnold, has never been lost among social and educational workers in England.

For a close study of the popular teachings of that noble man, Frederick W. Robertson, the reader is recommended to the American edition of Robertson's Lectures and Addresses on Literary and Social Topics (Boston: Ticknor & Fields, 1859). These were chiefly given to the Workingmen's Institute, or Athenæum, at Brighton, an association numbering at one time about 1,300. Robertson gave the opening address, beginning with the words "Brother Men and Fellow Townsmen," words well illustrating Robertson's spirit: "There are two bases of union on which men may be bound together. One is similarity of class, the other is identity of nature. The class feeling is a feeble bond. * * * There is another and a broader bond of union. * * * When all external differences have passed away one element remains intact, unchanged, the everlasting basis of our common nature—the human soul by which we live. 'We all are changed by slow degrees. All but the basis of the soul.' Our tendencies to evil, our capacities of excellence are the same in all classes. It is just in proportion as men recognize the real, original identity of all human nature that it is possible on this earth to attain the realization of human brotherhood. It is the only possible ground of union for the race. Let us hear the Ayrshire plowman in his high prophetic strain:

> 'For a' that, and a' that,
> Its coming yet, for a' that,
> That man to man, the world o'er,
> Shall brothers be for a' that.' "

While encouraging the educational objects of the Workingmen's Institute Robertson laid particular stress upon the importance of history and politics as means of mental improvement. He said: "Political science is the highest education that can be given to the human mind." Robertson used the term "political science" in its noble Greek sense—knowledge pertaining to the state or civic society in which civilized man lives and moves and has his own well-being or individual share of the Commonwealth. "When I use the term 'politics,'" he said, "I use it in the sense in which it was used by all the great and noble authors of the ancient world, who meant by the science of politics the intelligent comprehension of a man's position and relations as a member of a great nation. You will observe that in this sense politics subordinate to themselves every department of earthly science. * * *

Everything that man can know is subservient to this noble science. Understood in this sense, the workingmen of the country have an interest in politics" (pp. 10–11).

Robertson lived in the time of English political reform, and, although a liberal churchman, he was evidently not in sympathy with the Chartists and failed to understand the importance of the secret ballot in protecting and emancipating voters. He had the churchman's idea of reform, which is, of course, good and entirely safe in all crises. "There are two ways of improving a nation's state. The one is by altering the institutions of the country; the other is by the reformation of its people's character. The one begins from things outward and expects to effect a change in things inward; the other takes this line: from things inward to things outward. The latter is the right plan."

On the educational issue Robertson was quite clear. "I see one thing clearly—the laboring men in this town have a right to their reading room and library just as much as the higher classes have a right to their clubs and the middle classes to their athenæums. Let no cowardly suspicion deter from generous sympathy. Give them their rights. Let the future take care of itself" (33).

Robertson was the avowed friend of labor. "My friends, the workingmen. Would to God they were my friends. Would to God I were more their friend. I look back once more two thousand years and dare not forget Who it was that was born into this world the Son of a poor woman, and probably labored for thirty years in a carpenter's shop, a Workingman!"

IV. MAURICE AND THE WORKINGMEN'S COLLEGE.

FREDERIC DENISON MAURICE (1805-1872.)

Another strong educational influence upon young England was Frederic Denison Maurice. Like Arnold, Robertson, and Kingsley, he was a university man and a clergyman, with an historical and social tendency of mind. Early settled in London as the chaplain of Lincoln's Inn, the center of legal education in England, he had a rare opportunity for practical observation of the actual needs of the workingmen of London at the time of the great Chartist movement. He soon determined that education was the only practical way in which to help the people. He and his friends had tried certain cooperative experiments in the interest of the working classes, but these experiments had failed in consequence of popular ignorance and lack of economic training. In vain he essayed the power of the press. At a considerable loss he instituted a newspaper, called The Christian Socialist, designed to meet the wants of the Chartists. But they were suspicious of the enterprise. Only after its business failure did the workingmen begin to realize what a good friend they had lost. Up to the time of its suspension they had looked upon the journal as one of the organs of capital, designed to accomplish some secret purpose at the expense of the people.

Maurice and his friends, Hughes and Kingsley, in 1848 instituted another journal called Politics for the People, a journal in which appeared short and timely articles upon subjects of educational and vital interest to the workingmen of England. But this second enterprise never proved very successful. At that time the English people were not ripe for education through the agency of the press. Maurice determined to try a new method which should enable him to meet the workingman, as it were, face to face.

WORKINGMEN'S COLLEGE.

The idea of a workingmen's college appears to have been suggested to Maurice (1) by the need of popular education for the better training of English workingmen in the principles of cooperation and self-help; (2) by the example of the so-called People's College in Sheffield, founded by an Independent preacher as early as 1842,

but taken up and supported by the workingmen in 1848. Maurice felt the necessity of giving higher education to the industrial classes before they could successfully cooperate in industrial undertakings. Early in 1854 he drew up and had printed a scheme for organizing a workingmen's college in London. He had a house already on hand, for the rent of which he had become responsible. in the interest of a cooperative association, which had failed. In this house he proposed to initiate courses of instruction.

Colonel Maurice, in his life of his father, says:

Though for the moment the nucleus of the teachers would naturally consist of his old friends, he believed that it would be always possible to recruit the teaching portion of the college from the number of men who yearly come up to London from the older universities, who have sufficient leisure and knowledge, and who would gain in teaching as much as their pupils in learning. *He had great hopes that in this way, if the movement extended to the university towns and the great commercial centers, a connecting bond between the universities and the mass of the people might be found; that the "church" would show that it could educate the nation;*[1] that sectarian difficulties would be overcome; that another motive than the money one would be furnished for national education, viz, the effort of each portion of the nation to turn to account the powers it possessed to supply what others lacked, to the common good of all.

The institution was the direct outgrowth of associations between university men and workingmen in the vicinity of Lincoln's Inn. Maurice and Ludlow rallied around themselves enthusiastic students and teachers. Evenings were devoted to the instruction of young men of the neighborhood and the daytime to classes for young women. Frequent reunions of the leaders were held in the private rooms of Maurice, where fresh inspiration for the work was received from his suggestive words. He and other Christian socialists used to visit taverns and places where the workingmen congregated for the purpose of getting acquainted with them and of discussing popular and economic questions.

The direction and government of the Workingmen's College were in the hands of a president and a chosen faculty of lecturers, many of them distinguished, who gave their services gratuitously. Classes were formed for the study of history, geography, political economy, chemistry, physics, physiology, arithmetic, geometry, mechanics, bookkeeping, ancient and modern languages, drawing, Christian ethics, and the relations of religion and science. There was a system of elective studies, combined with familiar conference in class room, where the conversational method of question and answer was encouraged. The classes were held in the evening for the convenience of the workingmen. On Sundays there was instruction in the Bible and in ethics.

Maurice himself gave a course of public lectures in the interest of the college and raised the sum of £87. The subject of the course was "Learning and working." No sooner had Maurice fairly launched the project for a workingmen's college than he undertook to establish a similar enterprise for the benefit of women. A course of lectures was given by himself and friends and was afterwards published as "Lectures to ladies on practical subjects." The first of these lectures was by Maurice and suggested a "Plan of a female college for the help of the rich and the poor." Classes for women were speedily organized at the Workingmen's College and they are said to have been fairly successful. Queens College for Girls was the historic result of Maurice's work in this direction.

Among the teachings of Maurice the following points are worthy of special note: Put society upon a Christian basis; give the workingman the necessary instruction, better sanitary conditions, the faculty of taking proper recreation, and you will have men who love labor and will not attempt to overthrow society. Thomas Arnold

[1] The above passage is italicized in order to call attention to Maurice's ideas of university and church extension.

held that it was the duty of society to place the poor man, being a freeman, in a situation where he might live as a freeman ought to live. Maurice said the greatest works which have contributed to the progress of humanity have been accomplished by disinterested men; the greatest results that have been attained have been by the cooperation of several men and not by individual interests that seek to destroy it. It is not necessary to invent the principle of association, but to organize society upon this principle. Maurice agreed with Owen, St. Simon, Fourier, and Louis Blanc in opposing the spirit of association to that of competition in industry and commerce; that is, to personal interest. He regarded the principle of association in commerce and industry as only Christianity transported into social life. The result is, he said, that the Bible is the only guide in the line of social reforms. Nothing responds better to the demands of the workingmen than the Bible. Its main object is to recall the rich to their duties. Justice of God to all that are oppressed is the keynote of the Bible. Such were the views of the founder of Christian Socialism, which university men and church men in both England and America have attempted to revive.

Among the men who early assisted Maurice in teaching at the Workingmen's College were John Ruskin, Dante Gabriel Rosetti, J. S. Brewer, Westlake, Frederic Harrison, Grant-Duff, C. H. Dasent, C. H. Pearson, Burne Jones, Cave Thomas, Arthur Hughes, Madox Brown, Stacey Marks, Flower, T. H. Huxley, and J. J. Sylvester (in 1876 called to the Johns Hopkins University and afterwards (1883) back to Oxford as professor of mathematics). The biographer of Maurice says:

> The more general subjects of university education—Latin, Greek, logic, and general history—had been taught by some ten clergymen, by almost as many men subsequently best known as members of Parliament, by university men of almost every profession. But, on the whole, the most promising fact connected with it had been one which has, with some occasional interruptions, continued up to the present time. *A continual fresh stream of young men from the universities had gradually succeeded to those who were from various reasons no longer able to take part in the work of the college.*[1]

Colonel Maurice adds:

> My father was fond of using the illustrations of a London hospital and the unpaid work given to it by medical men as a proof that there was real advantage gained by the teachers in the time they gave as well as by the workingmen.[2]

HISTORICAL SIGNIFICANCE OF THE WORKINGMEN'S COLLEGE.

This was clearly recognized in the University Extension Journal for February, 1890, in these words:

> Few, if any, other educational institutions of its kind in the metropolis can so readily enlist our interest, both on account of past associations and present activity, as the Workingmen's College, in Great Ormond street. Since its foundation thirty-six years ago the great changes which have taken place in the educational outlook render it difficult to fully appreciate the step in advance which was taken when the idea of a college for working people was put into practice. It may fairly be claimed, moreover, that *this was the first attempt to extend the power of the universities and bring within reach of busy adults, without the leisure and without the means of otherwise securing it, the benefit of their influence.*

An interesting account of this pioneer institution may be found in the University Extension Journal for February, 1890, in the form of a "chat" with Mr. Thomas Hughes, who was one of the original founders of the college in 1854, and succeeded Maurice as principal in 1872, holding that office until 1883, when Mr. Hughes resigned

[1] Here were the apostles of that interesting educational work which university men have still further developed at Toynbee Hall, Oxford House, Wadham House, and other college settlements in London.

[2] Life of Maurice, II, 305.

to take a county court judgeship. The writer for the Extension Journal, who interviewed Mr. Hughes, gives the following graphic report:

As I made my way to Messrs. Macmillans's, in Bedford street, where Mr. Hughes—on a flying visit to town—was staying, I thought it was a very appropriate place in which to talk about the Workingmen's College, for Mr. A. Macmillan was himself one of the original members of the committee which framed the scheme for its establishment. The author of Tom Brown's School Days greeted me in a room, the walls of which were lined with portraits of illustrious men—the molders of modern thought. Mr. Hughes pointed out the excellent likeness of his friend, James Russell Lowell, of whom he spoke with great enthusiasm, and I suggested that the sentiment expressed by the poet, to "make a man, you must think him one," put in a nutshell the spirit which animated the little band of Christian socialists who founded the college, concerning which I asked Mr. Hughes to give me some particulars.

"As you probably know," he said, "we had come together under the leadership of Mr. Maurice to promote workingmen's cooperative associations, and to apply the principles of Christianity to trade and commerce. We found workingmen utterly uneducated, jealous of one another, and untrustworthy; and we felt that the spirit of association could only be promoted by creating a closer bond of union between the thinker and the worker.

"It was Maurice's idea to establish a college, for he believed that those who had acquired any degree of knowledge ought to share it with their fellows, and we therefore sought for some definite means of doing so. A people's college was already in existence at Sheffield, and on January 11, 1854, I proposed a resolution for the establishment of a similar institution in London in connection with our trade associations."

"Were the difficulties very great, Mr. Hughes," I asked, "at the outset?" "No; we had a comparatively easy task, as there were about a dozen trade associations going on in different parts of London, and there were a few members, at any rate, of each section anxious to avail themselves of the opportunities which we offered.

"On October 31, 1854, the college buildings at 31 Red Lion square were opened to the public, and the first prospectus offered among a number of others, a class in drawing by Mr. Ruskin, English grammar by Dr. Furnivall, and classes in history by the late Professor Brewer. Social and political, or 'human studies,' were regarded to be the primary object of the institution, and while it was established especially for hand workers, no one was to be refused admittance who was not ashamed to be called a workingman, to whatever class he belonged. I tried a class in law," continued Mr. Hughes, "but as soon as the members of it had learnt what the law was with regard to friendly societies and trades unions, they dropped off, and I started a boxing class, which proved a much greater success."

"A most valuable addition to the work of the college," I suggested. "It was," said Mr. Hughes, "and soon developed into a sort of social club, at the meetings of which we had political discussions. Men of distinction often spent an evening with us, and among many others who did so I remember Hawthorne, Emerson, and Lowell. It was at one of these gatherings, by-the-bye, that Hawthorne, after hearing 'The Tight Little Island,' sung with considerable vigor, remarked that it made him better able to understand something of England's narrow patriotism.

"One of the best features of the college," said Mr. Hughes, in answer to my question, "is the Old Students' Club, by means of which the past is interwoven with the present, and our best traditions sustained. The annual gatherings which take place just before Christmas are quite as interesting as those of my old college, Oriel, and I like them better. The frank intercourse between the teachers and the students is, to my mind, as valuable a means of education as intellectual or physical training."

With regard to its present work, Mr. Hughes said that the best answer to that question would be to pay a visit to the institution when the work is in full swing. The number of students attending the various classes had very largely increased, for while in the Michaelmas term, 1888, there were 800 class entries, representing 644 individual students, there were no less than 1,106 class entries and 875 individual students for the corresponding term last year. Of these 41 per cent were bona fide workingmen, and 30 per cent clerks, the others being teachers, Government officials, and professional men. In the higher division "bread studies" attracted the largest number of students; the entries for the French classes being 176, shorthand 137, while Latin and Greek numbered 46 and 21, respectively. "And for the future," concluded Mr. Hughes, "I shall be content if the college, assisted by a substantial grant from the charity commissioners, still continues to fill the measure of its early promise and the purposes of its foundation."

To unite teachers and students in the bond of fellowship, and to place the means

of liberal education at the smallest possible cost within reach of all, have been and are the objects of the Workingmen's College. The list of classes, which are divided into three divisions—preparatory, lower, and higher—is comprehensive and complete. From the most elementary stages of elementary subjects the student can graduate to advanced classes in special branches of literature, science, and art, and, above all, every opportunity is provided to assist and foster the spirit of *camaraderie*, which is the best fruit of college life.

The results of this social and educational experiment were of permanent value, for the Workingmen's College still endures. Similar experiments were attempted in other cities of England.

JOHN RUSKIN, 1819–1900.

One of the most famous teachers in the Workingmen's College was John Ruskin, the nineteenth-century apostle of art education for the English and American people. He was a Londoner by birth, and the son of a Scotch wine merchant, from whom he inherited a fondness for art and travel and a fortune of $1,000,000, which he largely devoted to educational and philanthropic schemes. While in many respects reactionary and mediæval, Ruskin taught the students and workingmen of England the gospel of sincerity and truth, the close study of nature and the appreciation of Turner, the English landscape painter, and also of early Italian art (Preraphaelism). Ruskin lectured to students at Oxford and Cambridge, but he was especially devoted to the improvement of the intellectual life of English artisans. From the commencement of the Workingmen's College he took charge of the drawing classes every Thursday evening.

W. G. Collingwood, author of the Life and Work of John Ruskin, Volume I, page 213, says:

> Only the reader who has engaged in this form of philanthropic labor—old-fashioned night schools, or modern lads' clubs, or carving classes—quite understands what it involves, and how difficult it is for an artist or a literary man, after his sedentary day's work, to drag his tired brain and overexcited nerves to a crowded room in some unsavory neighborhood, and to endure the noise, the glare, the closeness, and worst of all, perhaps, the indocility of a class of learners for whom the discipline of the ordinary school or college does not exist; who have no fear of deans or examiners; who must be coaxed to work and humored into perseverance, and for whom the lowest rung in the ladder of culture is a giddy elevation. Such work has indeed its reward, but never exceeding great, and it has more discouragements and difficulties than one cares to reckon up.

Mr. Ruskin kept up his classes at the Workingmen's College at intervals for several years, and sometimes his London class followed him into the country to sketch. Along with this interest for the art education of artisans went Mr. Ruskin's zeal for University Extension. He endeavored to show its friends and managers that the teaching of art to the people might be made to work in with the new scheme. He did not believe in attempting to form artists by art education, but aimed at these three objects: "The first, to give every student the advantage of the happiness and knowledge which the study of art conveys; next, to force some knowledge of art among those who are likely to become patrons or critics; and the last, to leave no Giotto lost among hill shepherds. The study of art history he considered unnecessary to ordinary education, and too wide a subject to be treated in the usual curriculum of schools; but the practice of drawing might go hand in hand with natural history, and the habit of looking at things with an artist's eye would be invaluable."

Mr. Ruskin's educational influence upon the English universities was profound. He taught the young men of England to appreciate both art and nature and to broaden their sympathies with the working classes. He was an early advocate and representative of academic instruction in art matters. Once before the Royal Academy Commission he was asked whether it would be advantageous to art if there were professors of it at the university who could give lectures and instruction upon it to

young men, as lectures were given on geology and botany. He replied: "Yes, assuredly. The want of interest on the part of the upper classes in art has been very much at the bottom of the abuses which have crept into all systems of education connected with it."

In 1858, Mr. Ruskin became professor in the Cambridge School of Art. In 1869 he was called to the Slade professorship of fine arts at Oxford; he was reelected in 1876, but resigned in 1879. Doubtless Mr. Ruskin's success in persuading Oxford students to repair roads near the university was somewhat mistaken zeal; but he had many warm admirers, among whom were W. H. Mallock and the late Arnold Toynbee. In talking over some of his failures in life, Mr. Ruskin said, not long ago, that "it was some comfort to him that he was not without successors, and he instanced Count Leo Tolstoi as one who was, in a way, carrying out the work he had hoped to do." Ruskin is now dead, but the lessons of his life are to be found in his books.

Among his writings that are of special educational significance to the American people are Fors Clavigera, a series of letters to workingmen; Unto this Last (Ruskin's views on political economy); The Political Economy of Art; Courses of Lectures to Workingmen on Art and Architecture. Selections from his Modern Painters were published in New York City. His greatest works are The Seven Lamps of Architecture and The Stones of Venice. His most popular essay is, perhaps, Sesame and Lilies, known to many American readers.

Dr. Newell Dwight Hillis, the successor of Dr. Lyman Abbott in Plymouth Church, Brooklyn, N. Y., has given in Baltimore and various Eastern cities a commencement oration on John Ruskin's Message to the Twentieth Century. The following is a brief but suggestive report published in the Boston Herald, June 15, 1899:

What we want to-day, said that immortal man, is not men who teach truth, but men who do truth. Ruskin showed through all his life that he was able not alone to teach, but to do. His life among the poor, when he himself was practically rolling in wealth, gained by his writings and through inheritance, showed this ability. He taught that all men, however rich, who fail to produce more than they consume are paupers—patrician paupers possibly, but paupers nevertheless.

The university extension, which is doing good to-day among the poor and unlearned classes, originated as a movement in the brain of this seer. Seven, in fact, of the nine great social movements of the century can be traced to John Ruskin's great love for humanity. The great sage's message to the century is in that principle which ruled his own life—the making of all evanescent beauty into something permanent. To do this one must copy, copy, copy. There is nothing original. There is nothing new. Raphael gazed into the eyes of the flower girl holding in her arms her babe, and said: "This beauty must die, or if it lives it will grow old and will pass away. Therefore I must make it permanent, so that the world may see what my eyes have looked upon."

The message that Ruskin's own personality brings to us is of the highest, the purest, and best, but he represents in that only the law of Moses. He comes of a line of scholars and litterateurs, and, say what you will, you can not avoid the great power of heredity. Artists, financiers, ministers, musicians, are all built tier on tier, higher and higher, generation after generation, until the forehead of the last touches the stars of the heavens. He is called the child of genius. Such was Ruskin. At a comparatively early age Ruskin was voted at Oxford the greatest and most unique writer of prose in the English language for three hundred years. On hearing of this, Ruskin wrote to the authorities of Oxford, saying that his mother gave him his style on the Sabbath day. It was she to whom the praise should be given. A thousand eloquent speakers are worth but one thinker; a thousand thinkers but one seer. The power of the man who sees is infinite. * * *

From Ruskin's life we find out what genius is, and why some men are great. They have been great seers. John Ruskin went on foot, because he could not lose time by riding. When did man grow wise by going rapidly? You want to see things. Education is not stuffing the mind with Greek roots. It is the giving the soul vision power. Culture is opening up windows in the soul. Education is the art of taking down the blinds. A fully awakened soul is an educated one. This was John Ruskin's message to scholars.

The teachers are making genius universal, and the anarchist comes in to establish equality by destroying all that is great and good and wise. In comes the Christian

scholar, who says: "With Christian schools, churches, and colleges, let us put jack-screws under the feet of the foreigners' children, and lift up the low until they look with level eyes into the eyes of the greatest!" * * *

John Ruskin gave away his money, labored for the poor, and inaugurated social reforms, continued the speaker. England broke his heart. The world never cared for nor understood John Ruskin, who said that there was a day when, if England had said a kind word to him or done something for the poor, she would have brought a flush of pride to his cheek. The world has never cared for its best men. We will discover after a time that Ruskin brought us a message that is to save us from trampled cornfields and bloody streets.

V. CHARLES KINGSLEY AND CHRISTIAN SOCIALISM.

CHARLES KINGSLEY (1819–1875).

Kingsley spread Maurice's new gospel of higher education for the people throughout all England. Like Arnold and Robertson, Kingsley wished to reach the classes as well as the masses. Accordingly he wrote a series of remarkable sociological novels which, from their striking character, found a wide and appreciative reading. The two most famous of these novels are Alton Locke and Yeast. The former describes the actual condition of the working classes in the great city of London. Kingsley had learned his facts from acquaintance and association with Chartist leaders, one of whom is the chief character in the story. The novel concerns more especially the miseries of the journeymen tailors of London, who, fifty years ago, were in a very pitiful condition. Indeed, the system continues unto this day in the so-called "sweating system," and, in the sad case of the poor sewing women, not only in England but in our own country. Kingsley made Alton Locke, "tailor and poet," the mouthpiece of suffering English labor and of the rights and wrongs of Chartism. The story is a painful one, but not without historical value as revealing a condition of economic society from which the world has not yet freed itself.

Kingsley's novel, Yeast, is so entitled because it shows what was brewing in the minds of young England; what ideas of social reform the more heroic men and women entertained. The story pictures the condition of rural England and the terrible demoralization that had come over day laborers. The story is not without interest as showing Kingsley's views, which were those of Maurice and Arnold with regard to the duty of the Church toward social problems.

Kingsley was a broad churchman, and once said: "In plain truth, the English clergy must Arnoldize if they do not wish to go either to Rome or to the workhouse before fifty years are out. There is, I do believe, an Arnoldite spirit rising; but most 'laudant non sequntur.' * * * I would devote soul and body to get together an Arnoldite party of young men if we could but begin a periodical in which everyone should be responsible by name for his own article, thereby covering any little differences of opinion, such as must always exist in a reforming party (though not in a dead-bone galvanizing one, like the Tractarians)."[1]

The relation of Kingsley to Maurice is indicated by the part Kingsley took in writing for the Christian Socialist under the signature of "Parson Lot," and his remark after he had completed his novel called Yeast: "I think this will explain a good deal of Maurice." Kingsley was the popularizer of Christian socialism. By his romantic writings, his ballads, and his splendid eloquence, Kingsley carried Christian truth into the hearts of the common people of England. He opposed the riotous demonstrations of the Chartists in 1847 by placards affixed to the walls of buildings in London. He recognized the need of reform, but maintained that it must begin with the individual. Christianity alone could effect healthy social changes. The influence of

[1] Charles Kingsley's Life and Letters, 143.

Maurice had been chiefly confined to the city of London. Kingsley worked in the rural districts, and, through his popular writings, affected all England. He was a simple country curate, doing the hardest kind of practical work in his parish. But he found time for one or two noteworthy educational experiments. Most interesting was his institution of "Penny Readings," described in Kingsley's Life and Letters (II, 231).

KINGSLEY'S PENNY READINGS.

During his heavy parish work, which was done single-handed the greater part of this year (1866), he was more than ever struck by the monotonous, colorless existence of the English laborer, varied only by the yearly benefit club day and the evenings at the public house. The absence of all pleasure from their lives weighing heavily upon his heart, more especially in the case of the poor hard-worked wives and mothers, who, if respectable, were excluded from even the poor amusements of the men; and for their sake, as well as for his men and boys, he began a series of penny readings, which now have become so common. It was characteristic of his chivalrous spirit that at the first meeting, when the schoolroom was crowded with men and boys, he made an appeal to them for their wives and mothers, dwelling on the life of toil they led, and saying how anxious he was to give them a share in this amusement, which they so sorely needed. It was therefore arranged that while the men and boys paid their pennies the widows and poor overburdened mothers should have free tickets.

These meetings, in which his parishioners would kindly help him, occurred once a fortnight, and though set on foot for the poor, brought all classes pleasantly together during the autumn and winter nights. They had music (the best that could be got), the best poetry, the most heroic stories. Sometimes he would give simple lectures on health; accounts of his own travels; and latterly extracts from his eldest son's letters from abroad, in which stories expressly for the Penny Readings at home were not forgotten. Village concerts too were given, got up by his daughter and son, in which friends from London helped for his sake; and the sight of the well-lighted and decorated room to people who saw nothing at home from one year's end to another but a farthing dip candle was a pleasure in itself. The poor mothers were gratified at seeing their sons in Sunday garments step up on the platform to help in choruses and part songs, while the young men gained self-respect and refinement by the share they took in the preparation as well as the performance. "It was to him most curious," he used to say, "to watch the effect of music upon the poor people—upon, alas! seemingly unimpressionable drudges, in whom one would expect to find no appreciation for refined sound;" but yet who would walk 2 miles to the village schoolroom on a wet night and sit in rapt attention the whole evening, showing their approbation of good music, not by noisy applause, but by a kindling face and eye during the piece, and a low hum of approbation after, that hinted at a deep musical undercurrent below that rugged exterior. Penny readings are common now, but in his own immediate neighborhood the rector of Eversley took the lead in inaugurating these pleasant gatherings.

CHRISTIAN SOCIALISM.

The rise of Christian socialism in England occurred in the time of the Chartists and of the revolutionary striving in the period of 1848.[1] Historically considered, the Christian socialistic movement represents an organized effort by certain English churchmen and social economists—Maurice, Kingsley, Hughes, E. Vansittart Neale, Furnivall, Lord Goderich, Ludlow, and Mansfield—to apply the doctrines of the New Testament to a settlement of economic evils. Maurice was a clergyman of the Church of England, and professor of religious philosophy in the University of Cambridge. At the time of the popular uprising he was acting as chaplain of Lincoln's Inn, in London. This institution was a law school in a quarter of London where many poor people live. From this center Maurice, aided by other university men, endeavored to carry relief to the suffering and instruction to the ignorant. His great idea for

[1] The demands of Chartism were all reasonable, as we now view them, but at the time of the revolution of 1848 they were thought to be incendiary in spirit. The six points were: (1) Manhood suffrage; (2) abolition of the property qualification; (3) vote by ballot; (4) annual Parliament; (5) payment of members of Parliament; (6) equal electoral districts.

the improvement of the industrial situation was to substitute the principle of association or cooperation for competition in trade and manufactures. In this object he was strongly aided by the writings and teachings of Charles Kingsley, who drafted placards or posters for the enlightenment of the London populace and for the prevention of extreme measures by the Socialists or Chartists. Kingsley and Maurice united for the support of a journal called Politics for the People. In this weekly journal the Christian Socialists gave expression to their ideas and condemned not only the teaching of doctrinaires, but the manifest evils of English industrial society in 1848. The clergy of the Church of England did not escape the denunciations of these reformers.

The Christian Socialists were ably seconded by John Malcolm Ludlow, a lawyer and political economist. He had been brought up in Paris, and had belonged to a society of Friends of the Poor, founded by a Lutheran clergyman. Ludlow had been greatly influenced by the writings of Fourier and of the great educational reformer, Dr. Arnold. From Fourier, Ludlow derived his faith in cooperation, and from Arnold his faith in religion as a practical means for the remedy of social and economic evils. Ludlow, after his settlement in London, used to visit the poorer quarters of the city and there make the acquaintance of workingmen, among whom he endeavored to establish Bible classes. He obtained the hearty alliance of workingmen like Walter Cooper and Thomas Shorter, who became very prominent in the formation of workingmen's associations and the Workingmen's College, described in connection with the work of Maurice.

In the educational campaign by the Christian Socialists there was no spirit of propaganda for the Church of England. No workingman was refused admission because he differed in faith from the leaders or because he was an infidel or an atheist. The college was simply a means of intellectual and social union for university men and workingmen, who, in common studies and common pleasures, forgot their differences of class and station and worked together for social reform and cooperation.

Another fruit of Christian socialism was a line of experiments in practical cooperation for production and distribution; but these experiments did not succeed. English libraries were not yet sufficiently developed for business management. The necessary self-control, intelligence, and experience were all lacking. Gradually the reformers learned to direct their attention more to education than to practical economics.

Very prominent among the Christian socialists was E. Vansittart Neale, a member of an old English family and a man of considerable wealth. He endeavored to encourage the formation of cooperative societies for production, but was unable to carry out his ideas. He became the general secretary of the Cooperative Union of Great Britain, and was among the chief representatives of this idea of industrial association. He spent his life in endeavoring to ameliorate the condition of the working classes, and carried on a correspondence with industrial reformers in all parts of Europe, America, and Australia.

CITY OF LONDON COLLEGE.

In 1848 the Rev. Charles Mackenzie, a friend of Frederick Denison Maurice, opened in Salvador House, Bishopsgate, the so-called Metropolitan Evening Classes, to improve the moral, intellectual, and spiritual condition of young men. Removed first to Crosby Hall and afterwards, in 1860, to Sussex Hall, Leadenhall street, into quarters once occupied by a Jewish literary institute, these evening classes became known as the City of London College. Students educationally qualified were allowed some share in the management of the institution.

By 1882 the number of students had increased to 1,500, and Sussex Hall was no longer adequate to their needs. The following year a new building, costing £16,000,

was opened in White street, Moorfields, by the Prince and Princess of Wales. This building is said to be capable of accommodating 4,000 students. It contains a large laboratory, art rooms, a coffee room, and a reading room, which is open from 10 in the morning until 10 at night all the year round. Lectures and entertainments are given once a week in the large hall. There are about 150 classes and 66 different subjects taught in the City of London College. There are about 40 teachers and professors who for their compensation are entirely dependent upon fees, two-thirds of which go to the instructor and one-third to the college. Favorite courses are those in art, science, modern languages, and subjects which lead to higher commercial education. Indeed, this is par eminence the college of commerce. The aim is not so much to afford technical or liberal education as to train clerks, warehousemen, and artisans to greater commercial and industrial efficiency. Women, as well as men, are admitted to all classes, except those in law, mechanics, and bookkeeping, and those which prepare students for the civil-service examinations. The City of London College, since its beginning, has had as many as 60,000 students. In the plans for the educational reorganization of London it is probable that this popular commercial college and the Birkbeck Institute will be associated with the City Polytechnic. (See University Extension Journal, March, 1890.)

THE SPIRIT OF 1848.

The effect of the spirit of the revolution of 1848 upon the student class in England is illustrated in the following extract from Frederic Harrison's autobiographical article in The Forum, October, 1890. He was a boy at King's College when the great revolutionary movement of 1848 swept over Europe. He says of himself and his fellow-students:

We were too continually impressed by the burning questions which arose day by day to be satisfied with any abstract politics. London and Oxford corrected each other. Plato and Lord Palmerston taught very different codes of politics. We were interested by both, and by a thousand new events which neither of these masters seemed to me to explain. Like most of my companions, I came to the conclusion that society in the middle of the nineteenth century was an extraordinarily complex thing—a thing of intrinsic and of profound meaning. Gradually I settled into a deep, lasting, and passionate sympathy with the popular cause everywhere and in all forms. Having no hereditary or acquired prejudices in favor of any class or of any special type of society, I slowly parted with my boyish liking for conquerers, cavaliers, and princesses in distress, and took my side with the cause of oppressed nations and the struggling people.

VI. UNIVERSITY REFORMS SINCE 1850.

UNIVERSITY EXTENSION FOR THE POOR.

From the time of the Chartist movement there was on the part of English university men an ever-increasing interest in the higher education of the people. The idea of extending academic privileges more widely found special favor at Oxford, where so many intellectual and religious movements have originated. As early as 1845, men prominent in church and state, among them Mr. Gladstone, petitioned the university to admit students of more limited means, and offered to give pecuniary aid to this object. Dr. Pusey, the High Churchman, afterwards commended the plan, and recalled the fact that in mediæval times the monks of Durham used systematically to send talented boys to be educated at the university. It was early felt by Oxford professors that the university ought "to do something to meet the wants of the increasing numbers of the population, and especially to make more opening for those for whom a great part of its advantages were always intended, the youth of promise who have not at present the means of obtaining university education for themselves."

This revival of the original idea and mediæval purpose of college endowments, marks the theoretical beginning of modern University Extension. Mr. Osborne Gordon, of Christ Church, said: "I look for the extension of the university to the poor." In this thought we discover at once a pious return to the spirit of the Middle Ages, so characteristic of the Oxford and High Church movements, and, at the same time, what is equally characteristic, a growing sympathy with the democratic and social tendencies of the age. This double aspect of University Extension, at once historic and progressive, is very remarkable.

Mackinder and Sadler, in their interesting account of how University Extension came to be, thus describe the condition of Oxford in the transitional period marked by the year 1850:

There was indeed much in the condition of the University of Oxford which called for change. The expenses of collegiate life, especially when compared with the standard of that time were great, while the subscription to the thirty-nine articles required at matriculation, and the subscription to the three articles of the Thirty-sixth Canon, on presentation for a degree, excluded one class of the community from university education. As to the propriety of making any alteration in the religious tests, there was of course grave difference of opinion both in the university and outside it; but men of all parties seem to have felt the importance of facilitating the admission of a poorer class of students to the privileges of university life. The strength and prevalence of this feeling is proved by the evidence given before the Oxford University Commission of 1850. "I believe," said Mr. Arthur Clough, in the considerations which he submitted to that commission, "I believe in the possibility of a gradual, sure, and ultimately large extension of the old universities." "The ideal of national university" Mr. Mark Pattison argued before the same body, "is that it should be coextensive with the nation, it should be the common source of the whole of the higher (or secondary) instruction for the country." "The university," he continued, quoting from Gordon, "should strike its roots freely into the subsoil of society and draw from it new elements of life and sustenance of mental and moral power."

SEVEN OXFORD SCHEMES, 1850.

The authorities already quoted mention seven different "plans for University Extension" proposed at Oxford in 1850. Briefly enumerated, they were as follows:

1. The establishment of new halls[1] for student residence. This plan was approved. The custom of lodging outside the regular college buildings is growing in favor at Oxford, as in American college towns. It is said now to be the almost invariable experience of every Oxford undergraduate to reside elsewhere than in his own college during some part of his academical career. This fact is not without significance in the history of College Extension. Everywhere students are leaving monkish dormitories and are becoming citizens. The revolution was practically effected in Germany years ago.

2. Permission to undergraduates to lodge in private houses. This proposition was also approved. It is the most natural civic solution of the dormitory question in America. It enables students to live like other members of society, according to their means and inclinations.

3. Permission to become members of the university and to be educated at Oxford without connection with any college or hall. This concession was also made.

4. Admission of students to professorial lectures without further connection with the university, professors having power to grant certificates of attendance. This was simply the recognition of an existing custom, which still prevails. The idea is worthy of consideration by American colleges and universities.

5. Abolition of religious tests on matriculation and graduation. At that time (1850) the Oxford Commission did not feel empowered to consider this radical measure, but expressed some dissatisfaction with the test system as then imposed. That system

[1] Oxford "halls" differ from "colleges" in not being corporate bodies. The university holds hall property in trust.

had shut out Nonconformists from Oxford University and was one of the prime causes of its narrow and exclusive spirit after the sixteenth century.[1] Greater liberality now prevails at Oxford, where religious tests are no longer requisite.

6. The foundation of theological schools in cathedral cities and the affiliation of these schools to the university. The affiliation to Oxford of Lampeter College and of the theological school of Birkenhead. This policy of institutional affiliation was adopted by Oxford and has been widely extended. It has led in England to the healthy development of local and provincial colleges as organic parts of a national university system. This should be the policy of the State universities in America. The new University of Chicago seems to have apprehended the Federal thought in higher education. "In union there is strength." This holds in education as well as in politics.

7. Provision of funds by the University of Oxford for professorial chairs in Birmingham and Manchester, with the idea of giving nonresident degrees for satisfactory local work. This proposition was not approved in 1850, but it is of historical interest as foreshadowing the idea of University Extension and College Affiliation.

FIRST SUGGESTION OF "UNIVERSITY EXTENSION," 1850.

The seventh scheme in the above list was proposed by the Rev. William Sewell, subrector and senior tutor of Exeter College, in a letter to the vice-chancellor of Oxford in the year 1850. The project was entitled "Suggestions for the extension of the university."[2] Mr. Sewell's phrase and suggestions bore no immediate fruit. It was thought unwise to employ university funds for general purposes of education at Birmingham and Manchester and throughout the country, when there were such pressing academic needs at Oxford. This sensible view would undoubtedly be indorsed by all academic corporations. It is important to bear in mind that the problem of University Extension in England has not been solved by expenditure from the university chest. The idea of affiliation with local colleges and the term "University Extension" were, then, simply proposed at Oxford as early as 1850. Oxford afterwards developed the scheme for local colleges, but it was reserved for Cambridge first to invent and carry out (1867–1873) a practical system of University Extension.

EXAMINATIONS FOR MECHANICS' INSTITUTES.

One of the historic germs of higher education for the people was the system of mechanics' institutes, which flourished extensively in England long before the middle of the nineteenth century. It was before such an institute at Rugby that Dr. Arnold had lectured on English history. In 1852, the Society of Arts in London formed a union of more than 300 mechanics' institutes and established for them two years later a system of examinations. The examinations were designed to promote and test the studies of adults, of persons not regularly connected with school or college. The present Archbishop of Canterbury, Dr. F. Temple, served as one of the examiners of mechanics' institutes and thus became deeply interested in higher popular education.

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[1] Cambridge was under the narrowing Elizabethan statutes of 1570 and Oxford under the tyranny of the Laudian statutes of 1636 down to the universities reform act of 1854. The enormity of these long outrages upon academic and religious freedom was bitterly felt by all Nonconformists. The University of London and the local colleges were founded for the purpose of meeting the needs of dissenters. The good effect of the abolition of religious tests at Oxford was seen in the rapid increase of students from 1,300 to twice that number.

[2] The writer of this report has received from a friend in Oxford a copy of the original and now very rare pamphlet in which University Extension by means of local colleges was first proposed. Upon Mr. Sewell's proposal the Oxford men now base their claim to an historic anticipation of the idea of extending university influence. See Oxford University Extension Gazette, November, 1890, article on "Inventor of University Extension teaching." Compare pamphlet by Sadler and Mackinder on "University Extension; has it a Future?" (Henry Frowde, 1890.)

BEGINNING OF LOCAL EXAMINATIONS.

The success of the system of examinations for mechanics' institutes suggested the idea of local examinations of middle-class schools at Bath, and in the west of England. Prominent in this movement was Sir Thomas Acland, who, in 1857, proposed a local examination committee at Exeter, representing that locality. A board of examiners, embracing such prominent men as Sir Stafford Northcote, Professor Max Müller, and Sir Henry Acland, was instituted to give prestige to the experiment. Two of Her Majesty's inspectors of schools were appointed by authority to cooperate with the local examiners. An official character was given to the whole system and the Rev. F. Temple (then Bishop of London) was asked to afford assistance to the scheme. The first local examination was held in June, 1857, and it was characterized by Dr. Temple as the "first step toward the improvement of middle-class education." The system was gradually extended through the counties of Staffordshire, Cheshire, Shropshire, Warwickshire, and into South Wales.

The next step was the adoption and development by the University of Oxford of this system of local examinations, which had been evolved in the west of England. Sir Thomas Acland, in 1858, published an "Account of the origin and objects of the new Oxford examinations for the title of associate in arts and certificates," and pointed out the advantages of university supervision over local education. He alluded to the fact that the religious exclusiveness of the universities had now been removed by act of Parliament, and that university men were already experienced in the official work of public education. Graduates of the universities were holding important positions in the large towns of England, and were already connected with the administration of local justice and the management of local institutions. These men, he suggested, would naturally be loyal and efficient supporters of any university system of local examinations. He added:

A career of almost unbounded usefulness seems open to the universities if they will respond to the call of the nation for aid in supplying a better general education to the great body of their countrymen. Their fortunate position within reach of, but not within, the metropolis, their traditional associations, their comparative independence of pecuniary interest, their connection with so many parishes and grammar schools, all seem to point them out as eminently qualified to give a healthy and liberal tone to school education as a preparation for the busy occupations of agricultural and commercial life, no less than for literary and scientific pursuits.

The first decided step toward university extension was taken when Oxford adopted the system of local examinations. This step was largely due to the influence of Dr. Temple and of Sir Thomas Acland.[1] The example of Oxford was immediately followed by Cambridge, and together the great universities of England have since labored for the promotion of higher standards of public education. At first local examinations were given for the benefit of boys' schools. The first year 300 boys were examined; now as many as 18,000 are annually tested. The system has been extended to girls' schools, and gradually to more and more advanced students. University examinations are given at the present time to local colleges, endowed schools, church schools, high schools, grammar schools, and, in general, to institutions preparatory to the university. Class lists of students who have obtained honors or satisfied the examiners, together with the names of schools and schoolmasters, are printed at the University Press of Cambridge. Three kinds of certificates are issued—higher, lower, and commercial. Fees are charged in all cases. The examination

[1] The provost of Queen's College, Oxford, says: "It is to the Bishop of London and Sir Thomas Acland that is due the credit of the first organization of these examinations which are really at the base of this movement."

James Stuart, M. P., formerly a professor in Cambridge, the first practical organizer of university extension (1867–1873), says very frankly: "The first and most important step of all was taken when Oxford founded the local examinations."

papers, with lists of committees and examiners, and with all the regulations, are also published by the university (London: C. J. Clay & Sons).

The example of English universities in the institution of local examinations was followed by the University of Virginia with very encouraging results. A system of local examinations, under the authority of the University of the State of New York, has long been in successful operation. Every term over 300 academies and high schools are examined. Certificates are issued to students who pass the requirements. The University of the State of New York legally comprises "all the institutions of academic and higher education which are now or may hereafter be incorporated in the State." The regents' examinations of teachers and pupils and of candidates for honors have already been carried in the State of New York to a remarkable degree of development.

In Great Britain local examinations are now conducted under the authority of the following universities: Aberdeen, Cambridge, Dublin, Durham, Edinburgh, Glasgow, Oxford, and St. Andrews. The London Society of Arts, the College of Preceptors, Trinity College, London, and other institutions also represent the system. Examinations are usually held at local centers by local committees, often consisting of graduates of the university which authorizes the examination. Cambridge local committees are known as syndicates; Oxford committees, as delegates. In 1873 a joint board was instituted, representing the Schools Examination Delegacy and Syndicate of Oxford and Cambridge. This board is quite distinct from the local boards. The joint board has to do mainly with secondary schools which have a governing body and send students to the universities.

OTHER UNIVERSITY REFORMS SINCE 1850.

In the year 1850 a royal commission was instituted to inquire into the state, discipline, studies, and revenues of the university and colleges of Oxford. This was the virtual beginning of English academic reform. The then condition of things certainly justified Parliamentary inquiry and some reconstruction. Oxford was a close corporation of conservative college presidents called the "Hebdomadal Board," because they were supposed to meet weekly for the government of the university. All general academic legislation originated with these heads of colleges, who were so sluggish in their methods of administration that it was satirically characterized as "organized torpor."

The only remnant of the ancient power of resident masters and fellows, comprising the real teaching force of the various colleges, lay in that surviving institution called the "House of Congregation." That body had become merely perfunctory. It still granted degrees, however, and thus retained the immemorial right of conferring academic privileges, especially the right to teach, which is the primary significance of the degree of master of arts or the equivalent doctorate. The masters and fellows of an English college or university constitute the corporation or academic body. They alone have the right to vote in university convocation, which includes all Oxford masters of arts, whether resident or nonresident. When any very important change of university policy was proposed, it was referred to university convocation. The country curates and schoolmasters flocked loyally to Oxford and could always be depended upon for a conservative vote in harmony with the wishes of the hebdomadal board. There was no longer any public discussion of academic measures, for the old custom of speaking Latin, as the rules of disputation required, had fallen into disuse. The alumni of Oxford, like the old Romans in their popular assemblies, could only vote "yes" or "no" to the measures proposed. The Hebdomadal Board virtually had things their own way, for the clerics and the masters always agreed with the academic or degree-giving powers at Oxford.

The heads of colleges were of course all good and influential churchmen. They

were naturally interested in maintaining at Oxford the authority and prestige of the church establishment. In the year 1850 the Church of England enjoyed an absolute monopoly of all academic privileges at Oxford. No honest dissenter could win a degree or even enter the university, for at matriculation every student had to sign the Thirty-nine Articles. All the scholarships and all the fellowships were regulated by religious tests. "The great majority of fellows," says Brodrick (History of the University of Oxford, 195), "were bound to take holy orders, and the whole university was dominated by a clerical spirit, which directly tended to make it, as it had so long been, a focus of theological controversy."

To such an extent did this spirit survive, even after the reforms of 1850 and 1854, that theology was encouraged as an undergraduate course for the degree of bachelor of arts, and is actually the chief subject in one of the six honor schools (the other five being the classics, mathematics, natural science, jurisprudence, and modern history). The old restrictions were thus characterized by the Quarterly Review in an article on University Extension, April, 1891:

At Oxford a student had, at his matriculation, to subscribe to the Thirty-nine Articles, and to the three articles of the Thirty-sixth Canon on taking his bachelor of arts degree. At Cambridge, where the wall of exclusion was less unbroken, there was, indeed, nothing in the oath taken at matriculation which could be resented by the most conscientious dissenter, but a theological test prevented him from taking his degree of bachelor of arts.

We have already seen to what a low estate professorial duties had fallen in the eighteenth century. The situation was not very much better in 1850. Teaching functions were largely in the hands of college tutors, while the regular incumbents of professorial chairs gave only a small number of perfunctory lectures, which students attended or not, as they liked. To some extent this condition of things still exists; but certain wholesome changes and reforms began to be instituted in the year 1854, according to the recommendations of the royal commission of 1850.

Professorships then began to be reorganized. New chairs were instituted by means of contributions from individual colleges, but for the benefit of the whole university. The government of the university was made more liberal. An elective academic council was substituted for the old "torpid" Hebdomadal Board. New life was infused into the administration by adding a chosen number of college presidents, an equal number of select professors, and the same number of select masters of arts resident at Oxford. Thus the best academic abilities were brought to the front.

From the student point of view the most noteworthy reforms were: (1) The revival of the ancient system of "hostels," or noncollegiate "halls," so that the cost of living at Oxford was greatly reduced. The result of this liberal extension policy was that, within a generation, the number of undergraduates was nearly doubled. It rose from 1,300 to over 2,500. (2) All religious tests were removed from candidates for matriculation and for the bachelor's degree. (3) The number and value of scholarships were increased. (4) Restrictions began to be removed from the fellowships, but the religious test was still exacted before one could enjoy the honor of a fellowship, or even before one could win a master's degree. The point to be guarded was that masters became voters in University Convocation.

The following interesting summary of English educational emancipation was given to the author of this report by Dr. J. L. M. Curry, author of a valuable little book on Establishment and Disestablishment:

Up to 1854 the honors and emoluments of the universities were exclusively monopolized by the members of the favored sect, but in that year the Oxford University act (17 and 18 Victoria, c. 81) threw open the scholarships and the degree of bachelor of arts. Two years after the Cambridge University act threw open, in addition, the degree of master of arts. In 1871 the "Act to alter the law respecting religious tests" threw open all university offices, with the exception of professorships in divinity, to all Her Majesty's subjects, and all college offices, with the exception of the so-called "clerical fellowship" and headships (34 Victoria, c. 26).

In 1882 this measure of reform was supplemented by the action of the university commissioners, appointed under an act passed in 1877, who have thrown open, with some exceptions, the headships and fellowships of the various colleges, and made them eligible to persons of merit without regard to ecclesiastical distinctions. The law recognizes completely religious equality, but, of course, it has not been applied to all the details of the university system. Prerogative, prescription, prejudice, and tyranny die slowly.

Vernon Lee, in an article on "Democracy and our old universities" (Contemporary Review, November, 1892), said:

The three great advances along the path of democracy which the old universities have taken during the last forty years are the admission of unattached or noncollegiate students, the abolition of religious tests, and the University Extension movement. Each of these advances must be followed up further. * * * The University Extension movement must be recognized as an integral part of university work. * * * A true democracy will admit women equally with men to the advantages of university life and culture. The old universities must pass from being—what they once were entirely and are still far too much—the English gentlemen's universities, and become the British citizens' universities.

VII. CAMBRIDGE UNIVERSITY EXTENSION.

LADIES' LECTURES.[1]

The first practical step in the direction of what is now called University Extension was taken in 1867. That year an association of lady teachers in the north of England invited Prof. James Stuart, of the University of Cambridge, to give them a course of lectures on the art of teaching. Professor Stuart was regarded as an educational reformer as well as a friend of the higher education of women. He had come to Cambridge from a Scotch university, where better methods of instruction were in vogue than at that time in England. Professor Stuart felt complimented by the invitation which he had received from the ladies' association, afterwards known as the North of England Council for the Education of Women. He told the ladies that he had not had experience enough to lecture upon the art of teaching, but that a thing was often best described by showing a piece of it; and that if they would accept it, he would give a course of eight lectures in which he would endeavor to teach something. This proposition was accepted, and it was agreed that his lectures should be about astronomy.

Professor Stuart had long been dissatisfied with the inadequate and superficial character of the single-lecture system, which had hitherto prevailed in connection with the mechanics' institutes and literary societies of England. He proposed to introduce the element of continuity into his course, and this has become one of the most characteristic features of all University Extension work in contradistinction to English methods of popular instruction by lectures. In the autumn of 1867 Professor Stuart gave a systematic and progressive course of astronomical lectures to local societies of ladies in Liverpool, Manchester, Sheffield, and Leeds. He went

[1] "In 1848—the great year of revolution—the professors of King's College had opened the classes which speedily developed into Queen's College, the forerunner of Bedford and Cheltenham colleges. In 1850 the Rev. David Laing, who had been associated with the Queen's College movement, gave his valuable help in the expansion of Miss Buss's first small school on similar lines into the North London Collegiate School for Ladies." See Ridley's biography of Frances Mary Buss and Her Work for Education, p. 5 (Longmans, Green & Co., 1895). This book well illustrates the origin and progress of the English movement for the higher education of women.

In 1863 the University of Cambridge opened to girls its local examinations, and in the following year, by authority of the House of Commons, a royal commission extended its inquiries into the state of education for girls. In 1870 were published in extenso the results of these inquiries, which embraced the education of both sexes. A digest or summary of the evidence was compiled by Miss Beale, author of the History of Cheltenham College.

From this era of inquiry and agitation regarding the education of girls in England dates the whole movement toward the reconstruction and extension of girls' schools.

from one town to another each week for a period of two months. This idea of an educational circuit is a noteworthy feature of University Extension work. In connection with these local lectures were developed two other distinguishing characteristics of the new system of popular education. The first was the use of the syllabus, or an outline of the topics treated in the lecture.

THE SYLLABUS.

Professor Stuart says:

I started with a syllabus at the very first lecture. It came about in this way: During the autumn a good deal was talked about the coming lectures, and it was often said that they would be over the heads of the ladies; that these were unaccustomed to follow such discourses; that they were unaccustomed to take notes. I endeavored to meet this by preparing rather a long syllabus of my first lecture—about four pages of large printed octavo—which was designed not only to enable them to follow the lecture better, to give them resting places, if I may say so, for the mind, but also to furnish them with fairly adequate notes of what was said, and to be in fact a lesson in note taking. In fact, in the days which succeeded, and for a considerable time even after the university had taken the matter up, the syllabus was frequently described as such notes of the lecture as would be taken by a person skilled in note taking. I got the idea from Professor Ferrier in St. Andrew's, who used, when I attended his class in connection with some of his more difficult lectures, to dictate to us a series of heads, which we always found to be of immense assistance. Such a syllabus was found very useful; and you will see from what I have said why it is that all through this work we have always been so insistent with the lecturers that the syllabuses should not be merely perfunctory, or short and carelessly drawn up. In fact, it is my experience that our best lecturers have been those who have given most care to the preparation of their syllabuses.

To one acquainted with German and American methods of academic instruction the use of dictations or a printed syllabus in connection with class lectures is no new thing; the good old scholastic idea of giving the heads of a discourse has only been adapted, by the aid of printing, to the intellectual needs of popular audiences. This clever device of the canny Scotchman has already revolutionized the educational methods of public lecturers in England and America. Perhaps the time will come when, in our large cities, even ministers, like lawyers and professors, will talk from a printed brief and give their hearers a chance to review the sermon at home, to look up biblical references, to study the law and the testimony, and to learn by heart good hymns and quotations. The use of printed notices in modern city congregations greatly relieves the minds of both minister and people. Why should not the parson give a syllabus of his sermon on the same sheet with the printed notices and preach from such useful notes? Whatever the clergy may do, this popularization of the printed syllabus is destined to exert henceforth a most stimulating influence upon all forms of education by lectures, even in colleges and universities, where ancient professorial manuscripts must sooner or later give place to "winged words."

WEEKLY EXERCISES.

Besides the printed syllabus, Professor Stuart introduced another good educational method in connection with his first course of lectures for lady teachers. This second device was a system of written exercises in answer to certain questions proposed by the lecturer.

Before the course began some people said it would be no use unless there was an examination, and others—these were very early days, remember—said it would be unlady-like for women to go into an examination. There was like to be a great difficulty, and people came to the first lecture, some intending to denounce the whole thing if the ladies had to stay and go through an examination, especially if it was to be so young a man who was to ask them questions, and others were ready to belittle the whole affair if I did not ask them questions and see how they had understood what was said. I was in great straits; but, at the last moment, I thought on a compromise. I read out three or four questions when the lecture was over and I said

nobody need answer them who did not like, but they should take them home, and, if anybody sent me written answers, I would correct them and return them to them next lecture. I gave my address and named a day. I thought I would get perhaps 20 or 30 papers. Wretched man that I was; judge of my feelings when I got 300! At each post the postman came loaded! At first I was in despair, for, remember, I had promised to correct them all; but I soon saw that I had fallen unintentionally on a most useful arrangement. I worked very hard and I got them corrected in time; and from that day to this the system of these weekly papers has never been omitted from an University Extension course. I found them not only valuable from he pupils' point of view, but from my own, for they enabled me to judge where my xplanations of the previous lecture had been faulty or inadequate.

Experience has shown that a lecturer or examiner can get through a large number of exercises by noting and classifying upon paper errors and excellences of certain kinds. He can then report these orally to his class from private memoranda, thus influencing and stimulating many persons at once by his words of criticism or commendation, and all without mentioning individual names.

LADIES' LECTURES IN EDINBURGH AND CAMBRIDGE.

The system of lectures which Professor Stuart has so successfully inaugurated for lady teachers in the North of England was continued under his general direction for several years. Other local associations were formed and ladies' lectures became more and more fashionable. In the city of Edinburgh, in 1864, university professors began to lecture to audiences of ladies. Inspired by the good educational example set by women in the north, the ladies of Cambridge began to utilize their own academic vantage ground and to attend public lecture courses offered by Mr. Sidgwick and others. Soon ladies from a distance were attracted to this old university town by the educational advantages there enjoyed. It was not long before a house was opened for lady students resident in Cambridge. Newnham College was the direct outgrowth of this new establishment. The close connection between this college for women and the original movement for teachers' lectures may be seen in the fact that Miss A. J. Clough, the secretary of the North of England Council for the Education of Women, became the first manager of what is now called Newnham College.

HIGHER LOCAL EXAMINATIONS FOR WOMEN.

Another interesting result of the first experiment in University Extension was the institution of higher local examinations for women. Mrs. Josephine Butler, the president of the North of England Council, visited Cambridge for the purpose of securing a committee of university men to test and attest by examinations the attainments of teachers and governesses. She obtained the cooperation of Professor Stuart and others, and a direct appeal to the university was duly made. The request was granted and higher local examinations for women were soon instituted. "There was opposition to it," says Professor Stuart, "by those who wished the same examinations for men and women; but we thought that the end would be that many of our ideas introduced in this examination would find their way into the university examinations, and so it has been; and they, too, thus improved, are open to women as well."

UNIVERSITY LECTURES FOR WORKINGMEN.

The next step in the development of University Extension was academic instruction for the working classes. It is a remarkable and interesting fact that schoolteachers and mechanics have been the pioneers in this great movement toward educational democracy. Women who are brain workers and men who are hand workers have unconsciously worked together toward the same great end. About the same time that Professor Stuart was lecturing to lady teachers in the North of England, he received an invitation from an old college friend, Mr. Moorson, one of the managers

of the railway works in Crewe, to come to that town and give a lecture in the Mechanics' Institute for the benefit of the workingmen. It was thought that they could not stand more than one lecture from the same man, and so Professor Stuart, contrary to his principles on the single lecture system, agreed to give a popular talk upon the subject of "Meteors." His lecture was advertised for the evening of the 14th of November, 1867. The night before, by singular good fortune, there occurred one of the most brilliant meteoric showers on record. Neither the lecturer nor the local management had counted upon such an advertisement from heaven. When Professor Stuart entered the lecture hall he found it packed with eager and excited people. He had never before addressed a large audience, but he now was confronted by at least 1,500 expectant faces. The professor was of course somewhat dismayed at the sight, but he understood his subject thoroughly and was equal to the occasion. His lecture was a pronounced success, but the true genius of the man came out after the popular expression of a vote of thanks. He said he would soon return and give in the town of Crewe a regular course of public lectures on astronomy, and the present company must see to it that he had a good audience. The proposal was received with tremendous applause and the true principles of University Extension were thus established among the workingmen of Crewe.

For six weeks in succession Professor Stuart afterwards came to the Mechanics' Institute of that town and gave there a systematic course on astronomy, exactly as he had done for the lady teachers of Leeds, Sheffield, Manchester, and Liverpool. The same method of lecturing from a printed syllabus, with weekly voluntary tests by written answers to set questions, was followed in the case of the men, just as formerly in the case of the women, and with very gratifying results.

THE ROCHDALE PIONEERS.

From Crewe this novel educational experiment was extended to other great centers of English labor and industry. Professor Stuart regards it as the next important step when this kind of work began to be encouraged by the great cooperation societies, such as the Rochdale Equitable Pioneers. Receiving an invitation from this flourishing association to lecture at Rochdale, Professor Stuart consented upon the condition of their supporting a course of several weeks' duration. The society agreed and great enthusiasm was shown in distributing the syllabuses, in advance of the lecture, to the men who came to purchase goods at any of the fourteen cooperative stores of Rochdale.

THE CLASS.

In connection with this course of lectures at Rochdale there originated a third original and characteristic feature of University Extension, namely, the class or conference, which is for modern popular education what the seminarium is in university work. Professor Stuart shall tell his own story of the origin of the class:

It arose in this way: My lectures were held in the great common hall, and I had a number of diagrams. I used to take them down each day when the lecture was over. But one day I was in a hurry to get away, and so I asked the hall keeper if I might leave them hanging up till I came back next week. He demurred a good deal, as in the interval the annual business meeting of the society was to take place in that hall. However, he at last consented, and when I came back next week he said: "It was one of the best things you ever did, sir, leaving up these diagrams." "Why, so?" said I. "Because," he replied, "our people were all here last night, and there were a number who had been attending your lectures who stayed after the meeting, and they were discussing your diagrams and explaining them to one another for a whole hour; and they have a number of questions to ask you, and they are coming here before the lecture to see if they can, and I promised them to ask you to meet them and not to take down the diagrams till they had seen you." So I went before the lecture and saw them, and I found it one of the most useful of half-hours, and ever after that I never gave a course of however few lectures without, at the beginning of each lecture, giving an opportunity for some time to any who liked to meet me to discuss special difficulties. Such was the origin of the class.

COOPERATIVE SCHEMES.

From Rochdale Professor Stuart extended his work to Bury, Leeds, Dewsbury, and to other places where cooperative enterprises were already in successful operation. The cooperative spirit had early been awakened among English workingmen by the teachings of Robert Owen, Vansittart Neale, Ludlow, Maurice, Thomas Hughes, and others, and the cooperators were especially friendly to the new system of popular education. Indeed, from the very outset, intellectual, moral, and social improvement was among the avowed objects of cooperative societies. They were accustomed to devote 2½ per cent of their profits to the maintenance of reading rooms, libraries, and newsrooms. Professor Stuart endeavored to enlist these societies in the support of a kind of cooperative or peripatetic university, the plan of which he drafted and published in the Cooperative News. But the times were not ripe for this kind of an institution. Many lecture courses were given by Professor Stuart and his university friends for the benefit of the cooperators, and these efforts bore good fruit in evening classes for various branches of art and science.

Professor Stuart early perceived that it was impossible to found a peripatetic or cooperative university upon a merely popular basis, like that supplied by workingmen's societies. He determined to fall back upon a strong central body—the University of Cambridge—and to make that the base of supply for the higher education of the people.

THE PHRASE "UNIVERSITY EXTENSION."

It was in the summer of 1871 that he began to advocate this idea in various towns where individual lecture courses had been already given. This plea for the coordination of local and central effort was subsequently printed, and the title given to the pamphlet was "University Extension." The phrase was felicitous, and described exactly the idea of enlarging academic influence among the people. In one form or another the idea had been in the minds of educational reformers ever since 1850, when it was proposed to extend the influence of Oxford. But to Professor Stuart, above all others, belongs the honor of originating, by his own experience and ingenious methods, the first practicable scheme for what is styled "University Extension." From the year 1871 down to the present time that name has served to describe a great popular movement in modern university life. The movement was in existence, as we have already seen, in the system of local examinations, dating from 1857, and in the still earlier popular work of academic pioneers like Birkbeck, Arnold, Robertson, Maurice, Kingsley, Hughes, Denison, and many others. Professor Stuart found new channels for the rising academic stream and engineered its fertilizing flood into courses which now meander over all England.

PETITIONS TO CAMBRIDGE UNIVERSITY.

It is interesting, however, to observe that in England the popular demand for local lectures arose before the university supply. Petitions began to be sent in to the University of Cambridge in the autumn of 1871, following Professor Stuart's summer campaign. His old friends and constituents—the Rochdale Pioneers, the Crewe Mechanics' Institute, the North of England Council for the Education of Women, the mayor and citizens of Leeds—were among the petitioners who prayed that the University of Cambridge would undertake an organized inquiry into the actual demand for higher popular education in the places named and throughout the country at large. These petitions, together with the letter from Professor Stuart, were printed and circulated in Cambridge. Other and stronger memorials followed in 1872. A fresh ally was found in the Mechanics' Institute of Nottingham and in the cooperation of the Rev. Dr. Paton, who represents the transmission of Chautauqua ideas from America to England. Many men and many forces combined to

promote Professor Stuart's idea of University Extension. At last, in February, 1873, academic sentiment had risen sufficiently in favor of the idea to warrant the appointment of a so-called "syndicate" or committee to consider the various petitions and to report upon the existing demand for higher local education.

In order to test public sentiment, questions like the following were sent to various towns by the Cambridge committee:

I. What demand is there for instruction in your locality among (1) young men of the middle classes who have left school, (2) women of the middle classes who have left school, (3) young persons and adults of the working classes—(*a*) men and (*b*) women?

II. What provision is there in your locality for affording instruction to such persons?

UNIVERSITY EXTENSION AUTHORIZED, 1873.

A great mass of information on these questions was received by the university, and a digest of the replies was published in the University Reporter. The syndicate reported, May 24, 1873, that the information they had received "afforded sufficient evidence of a demand for university teaching in several populous centers." The following temporary measures were recommended: (1) That the present syndicate be empowered to organize courses of lectures at a limited number of centers, and to make provision for holding such examinations as they may consider expedient, on condition that the requisite funds are guaranteed by the local authorities; (2) that the powers of the syndicate shall continue only till the end of the Easter term, 1875. This report was adopted by the university senate June 5, 1873, and thus University Extension was definitely authorized and established.

The system of University Extension lectures was first applied by Cambridge to a group of towns—Nottingham, Derby, and Leicester—which had been organized for the work by Dr. Paton and others. Professor Stuart admits that the first experiment was made upon too ambitious a scale. It was attempted to provide distinct courses of lectures for three classes of persons: (1) Clerks, (2) Artisans, (3) Women. Moreover, the lectures and class discussions were held upon different days. Some of these arrangements were wasteful of time and energy. Experience has led to greater simplicity in local arrangements and greater economy of educational and social forces.

A report upon these early courses of University Extension lectures was made to the syndicate in 1874 by one of the lecturers, the Rev. W. Moore Ede, who made some very interesting observations upon the relative success of the different classes. He showed that the day course for ladies had been well patronized, although the charge had been comparatively high—1 guinea for 12 lectures. The evening classes, designed for young men, had attracted the largest number of hearers, but they were a thoroughly miscellaneous audience of both sexes. Young men were by no means conspicuous. The most surprising fact was that the lectures seemed to be especially attractive to adults, to business and professional men, and sometimes to persons past middle life. In fact, the same kind of people that one would expect to see at any public lecture or meeting of good citizens were to be found attending University Extension courses.

"It is astonishing," says Dr. R. D. Roberts[1] in his comments upon Mr. Ede's report, "to find the enthusiasm with which persons of advanced age have devoted themselves to study in connection with this movement. There are few lecturers who have not received letters from individuals who have attended their lectures, speaking of the personal benefits which they have derived and of the new world opened up to them by the establishment of the University Extension lectures in the

[1]Eighteen Years of University Extension. By R. D. Roberts, M. A., D. Sc. (Lond.), Cambridge, 1891, p. 15.

district." Dr. Roberts suggests a reason why these courses did not attract young men to a greater extent. He thinks they saw no sufficient motive "to follow up laborious days by laborious nights." They perceived no definite attainable end, such as academic recognition. Young men usually prefer to work for some immediate purpose or concrete object.

Speaking of the general results of the first experiments in University Extension at Derby, Nottingham, and Leicester, Dr. Roberts says:

The experience of the first term's work in the three Midland towns showed conclusively that it was, as a rule, unnecessary to arrange special courses with a view to particular classes of persons, for not only was it unsuccessful in the case of young men, but the lectures intended particularly for artisans were by no means exclusively or even mainly attended by that class. Still the working people who did attend were full of an enthusiasm and earnestness that gave life and vitality to the movement.

FIRST PRINCIPLES OF UNIVERSITY EXTENSION.

The first principles of teaching and of study, under the new system, were elaborated by previous experience and were fully stated in connection with the first courses of regular University Extension lectures. The following were the first published rules and regulations:

(1) Each course consists of weekly lectures accompanied by weekly classes extending over a period of twelve weeks, conducted according to the following regulations: The teacher to remain in the lecture room for some time after the conclusion of each lecture and class in order to answer questions or solve the difficulties which have occurred to pupils and to give advice as to the reading of text-books and other means of efficiently studying the subject.

(2) Each lecture to be accompanied by a syllabus distributed to the pupils and by questions. Those who desire to answer these questions to do so in writing at home, and to be at liberty to submit their answers to the teacher for correction and comment.

(3) The class in each subject to be formed only from among those who attend the lectures in that subject, and to consist of those who are desirous of studying it more fully. The class, at the discretion of the teacher, either to take up the subject of the lectures or cognate subjects bearing directly thereon and necessary for the better elucidation of the subject of the lectures. The teaching in the class to be more conversational than that in the lecture.

(4) Written examinations to be held at the conclusion of each course by examiners appointed by the syndicate, open to any pupil who has attended the course; and certificates to be granted to the candidates who manifest sufficient merit in these examinations.

INFORMATION FOR CAMBRIDGE LOCAL SECRETARIES.

The following circular of instructions was early issued from Cambridge to the local secretaries:

1. The local secretary is requested to keep as accurate a record as possible of the attendance at each lecture and class, so as to be able to furnish details on the form which will be sent to him before the date of the examination. The figures should be obtained by counting the attendance at each lecture or class, adding the total, and dividing by the number of lectures or classes.

2. The local secretary of any town where an examination is about to be held will be supplied a few days before the date of the examination with a packet containing the requisite number of question papers, which packet must not on any account be opened till the hour of examination.

3. Some qualified person or persons must be appointed by the local committee to superintend the examination.

4. A sufficiency of paper, pens, ink, and blotting paper must be provided, and the students must be placed at sufficient distances (at least 4 feet) apart.

5. The "Directions to students" should be read out on the class night preceding the examination. The superintendent of the examination is requested to see that the students comply with the "directions" and that no candidate is admitted to the examination who has not received the approval of the lecturer.

6. The superintendent (or one of the superintendents) must be present during the

whole time of examination, and is responsible for giving out the question papers, for preserving quiet, for seeing that there is no copying from books or otherwise on the part of any of the students, for collecting the papers when the allowed time has expired, and generally for the examination being conducted in an orderly manner.

7. No student is to be allowed to leave the room during the first half hour after the time at which the papers are first given out. No paper should be given to any student who comes more than half an hour late, unless he has for urgent reason obtained special leave from the local secretary to do so, and even then only if no student or copy of the examination paper has left the room.

8. The superintendent of the examination must write out in a clear hand an accurate list of the names of those who give in papers, on the form which has been supplied to him from Cambridge, with one Christian name in full and the rest in initial, the initial in such cases as I., T., or J., being written as printed, to avoid mistake; and this list, together with a copy of the examination paper, must be inclosed with the papers of the students. If there are examinations in more than one subject, each set of papers must be made up in a separate parcel. Each package is to be sent to the secretary local examinations and lectures, Syndicate Buildings, Mill Lane, Cambridge, by post or rail, with the name of the place from which it comes and of the subject written on the outside.

9. When the local secretary receives the certificates granted to those who pass the examination, he is requested to look them over carefully and, if there are any mistakes, to communicate with the secretary at Cambridge as quickly as possible.

CAMBRIDGE DIRECTIONS TO CANDIDATES.

1. Be at your seat in the examination room five minutes before the time fixed for the examination to commence.
2. Write your full name and address in the right-hand top corner of the first sheet of your answers.
3. Write only on one side of the paper. Write the number of each question before the answer.
4. As soon as notice is given (which will be five minutes before the end of the time allowed), arrange your papers in proper order, so that the first page may be at the top. Fasten them together with string or metal fasteners and give them, unfolded, to the superintendent of the examination.
5. No student can be allowed to leave the room until half an hour has elapsed from the time at which the papers of questions are given out. A paper will not be given to any student who is more than half an hour late.

CAUTION.

Students must not bring any book or written or printed paper to the examination room.

No communication whatever between students under examination will be allowed.

GROUPING OF CENTERS.

If four centers combine together to take the same course, or three centers, of which two take a repeated course, each center is charged £41 5s. for a single course and £62 10s. for a repeated course. If five centers combine, or four centers, two taking a repeated course, each center is charged £38 for a single course and £56 for a repeated course.

This reduction can only be made in the cases where centers are grouped in the manner above described. In cases where the number of weekly papers for the lecturer is large, the syndicate may have to make an addition to these charges.

In the southeastern counties and in Northumberland and Durham, district associations of centers have been formed for the purpose of facilitating the grouping of centers.

All the local expenses in any town, such as rent of rooms, advertising, printing, etc., are borne by the local committee.

MODE OF LOCAL ORGANIZATION.

The method of instituting a local course of University Extension lectures is usually as follows. Diligent propaganda is made in a given community by friends

of the extension movement; influential people are interested in the project of a local course of lectures; a public meeting is called, over which the mayor or some prominent local magnate presides; a spirited address is given by a university man, who explains the most attractive features of the University Extension system; a University Extension society is then duly organized, with a secretary and local committees; these latter canvass the town, secure subscriptions to the proposed course, and, if necessary, obtain a guaranty fund to meet any possible deficit. As many course tickets as possible are sold, and the price is made as low as circumstances will justify. It is not expected in England that University Extension courses shall always pay their own way. If two-thirds of the requisite expense can be met by the sale of tickets, the remaining third can generally be defrayed by the aid of philanthropy and public spirit. Sometimes a course of lectures is arranged in connection with some existing institute, library, school, or local college, which by means of endowments or other resources materially contribute toward the payment of expenses. It has been found in England that such affiliation with local institutions is one of the very best means of promoting University Extension. It is well said by Mr. Moulton that University Extension "interferes with nothing" and "can combine with anything."

COST OF CAMBRIDGE LECTURES.

The following Cambridge circular is an early authoritative statement of the cost of University Extension:

The expenses incurred by any place for one course (including one lecture and one class a week) for a term of from ten to twelve weeks, are as follows:

(1) A sum of £45 payable to the university for teaching.

(2) A fee of £2 for the examination at the end of the course. This fee will be divided equally among the towns which have a course in common. A charge of 1 shilling will be made for each student who enters for an examination.

(3) The share of the traveling expenses of the lecturer, which are divided among the towns associated in securing his services.

(4) The expense of printing the lecturer's syllabuses.

(5) A small fee for the use of slides when the course is illustrated with the lantern, or to meet the cost of experiments and hire of apparatus in the case of such subjects as chemistry and experimental physics.

(6) If the same course is given afternoon and evening of the same day, a fee and a half, £67 10s., is charged.

NECESSARY EXPENSES.

The cost of a regular University Extension course of twelve lectures varies somewhat according to the traveling expenses of the lecturer and the amount of money expended for advertising and hiring a hall. Very often a good lecture room can be obtained without expense from some educational institution. The traveling expenses of the lecturer, advertising and other local expenses do not usually amount to more than $100. The fee paid to the university is $225 for twelve lectures. Twenty-five dollars a lecture is a fair price for class lectures in America, if the lecturer's expenses are paid. The syllabus is usually sold in England for a sixpence in connection with the lectures or with the course ticket.

UNIT OF UNIVERSITY EXTENSION.

The Cambridge men, at the outset, took a firm position with regard to the so-called unit of University Extension. They insisted upon a course of at least twelve continuous lectures upon one great subject. They were reluctant to give any single lectures except for purposes of local organization. Lyceum lectures upon individual and disconnected themes they absolutely declined to give. This position of the Cambridge men, while perfectly justifiable from an educational point of view, has been found not altogether tenable, and half courses are now occasionally given in

communities that are not entirely able to sustain a full course. Cambridge Extension lecturers usually arrange their work for a three months' course of weekly lectures. The university season falls naturally into two terms of three months each, from October to Christmas and from the middle of January to Easter. An effort is made to arrange for lectures in circuits of towns or districts, so that the lecturer may occupy his time to good advantage, without traveling over wide areas and wasting his time.

GROUPS OF SUBJECTS.

Three groups of subjects are usually offered by the Cambridge syndicate for University Extension: (1) Literature and history, (2) science, (3) art appreciation. By far the most attractive courses in England are those on literature and history, although science is very popular in industrial and mining communities. In art less attention is given to technical instruction than to simple appreciation of art for its own sake. Each unit course of extension lectures is accompanied by a printed syllabus or outline of topics, which saves the taking of notes and aids the student in reviewing the substance of each lecture.

WEEKLY EXERCISES.

Printed questions accompany the outline of each weekly lecture and are answered by the student in his own leisure at home. The answers are sent by post to the lecturer, who corrects them at his convenience and returns them, with comments, written or oral, at the next lecture or class exercise, but without mentioning names. Whether praised or criticised, every student, it is said by Mr. Moulton, is glad to be singled out as an educational example.

CLASS CONFERENCE.

Before or after each lecture a half hour or more is devoted to a class conference, in which the weekly exercises are discussed. In this class are gathered the most studious and interested attendants upon the University Extension course. This class constitutes the saving remnant, educationally speaking, of a popular audience, and the best work accomplished by University Extension is done through this instrumentality, which may be called a kind of popular seminarium. The class of conference is for University Extension students what the class room and seminar are for university men in general.

FINAL EXAMINATION.

At the end of the course a written examination is instituted, by university authority, for those who have done satisfactorily a certain proportion of the weekly exercises required by the lecturer. The examination paper is prepared at the university by an examiner who is quite independent of the lecturer, although familiar with his syllabus and course of instruction. In fact, every syllabus and course of instruction must be approved by university authority before the lecturer can take the field. The chief advantage arising from this independent system of conducting University Extension examinations is said, upon good authority, to be the fact that the expenses are thrown upon the university board of local examinations, an existing system of fostering public instruction which gave the first strong impulse to the development of University Extension.

It is believed by Mr. Moulton and by some of the best University Extension lecturers in England that it would be vastly better for the lecturer himself to conduct his own local examinations, for he best understands the exact nature of his own teaching and the character of the students with whom he is dealing. It is said that great injustice is frequently done by university examiners to the very ablest and most original students. Just here, indeed, lies the evil of all college and university examinations.

CERTIFICATES.

Certificates are issued to men who have been elsewhere taught or in ways unlike the examiner's ways by the university examiners of extension students. These certificates are of two grades, "Passed" and "Distinction." Local prizes are sometimes awarded to the best students by the University Extension Society under whose auspices the local lectures were given, or by benevolent individuals in the community. For one year's systematic work a special certificate is issued by the university.

Affiliation to the University.—Many towns in England have carried University Extension so far that they now support several courses in a year and thus maintain a kind of local college or university of their own, with an inviting curriculum of study. Such towns or centers of University Extension are in many cases affiliated to the university, and thus become, as it were, local branches of Cambridge. This institution has gone so far in the direction of recognizing good local work that a student living at a distance from Cambridge may now become recognized as a "student affiliated to the university." Indeed, an extension student may now be admitted to one year's advanced standing at Cambridge, provided he will pass a satisfactory examination in six consecutive unit courses (that is, of twelve lectures each) all in one group (for example, in literature and history, or in science, or in art), thus embracing a three years' course, and provided also that he pass in two other unit courses, and also in Latin and one other foreign language, and in the elements of higher mathematics (that is, Algebra and Euclid). This amount of work is regarded as a fair equivalent, not only for the work usually done by students who are preparing for Cambridge, but also by students at Cambridge during their first year. To anyone who realizes how little college boys know and how thoroughly in earnest all University Extension students are, the above concession by academic authority will appear nothing very extraordinary.

ORIGIN OF PERMANENT SYNDICATE.

When the term of appointment for the temporary syndicate came to an end in 1875, the senate of the University of Cambridge appointed a permanent syndicate, or committee on local lectures. Professor Stuart was made one of the honorary secretaries and was succeeded in 1876 by the Rev. G. F. Browne, who was at the same time secretary of the committee on local examinations. Professor Browne, afterwards Canon of St. Paul's, and now Bishop of Stepney, long continued to be one of the most active and efficient promoters of University Extension. In 1878 the two committees (Local Examinations and University Extension) were formally united. In 1881 Dr. R. D. Roberts became assistant and organizing secretary for the Cambridge system of local lectures. Since that time the Cambridge movement has been largely under the skillful direction of this accomplished lecturer and able advocate of a national system of higher education. He is one of the leading authorities upon the subject. (See Roberts's Eighteen Years of University Extension.) He became also secretary of the London Society for the Extension of University Teaching and an earnest promoter of the idea of a teaching university for the great metropolis.

VIII. THE LONDON SOCIETY FOR THE EXTENSION OF UNIVERSITY TEACHING.

The good example of the University of Cambridge in extending higher education to the people inspired university men in London to attempt the formation of a society for the promotion of the same object. In June, 1875, a public meeting, at which the lord mayor presided, was held in the Mansion House for the initiation of the project. It was moved by the Hon. G. J. Goschen, M. P., who afterwards became

the president of the society, "that the principle of the Cambridge University Extension Scheme be applied to London and that the various educational institutions of the metropolis be requested to cooperate in the endeavor to apply it."[1]

The society was organized with 32 members, 10 of whom are nominated by the following London institutions: Bedford College, Birkbeck Institute, City of London College, College for Men and Women, King's College, London Institution, Queen's College, Royal Institution, University College, and the Workingmen's College. Thus London's higher educational forces, including that popular foundation by Maurice, were brought into efficient cooperation.

UNIVERSITIES' JOINT BOARD.

In 1876, the universities of Oxford, Cambridge, and London consented to appoint three members each, to constitute a universities' joint board for the selection of lecturers and examiners and to supervise the educational work of the society in conjunction with the above council. "The existence of this board," says Dr. Roberts, "in addition to giving university status to the work, has secured for the London society the advantage of a wide choice of lecturers and a close connection with both the old universities, without the disadvantages of undesirable competition."

The object of the London Society is "to bring university teaching within reach of persons of all classes and of both sexes living in London and its neighborhood and to work in as close connection with the universities of Oxford, Cambridge, and London as may be possible." The London Society for the Extension of University Teaching thus defines the aim and scope of the whole movement:

The purpose of the University Extension movement is to provide the means of higher education for persons of all classes and of both sexes engaged in the regular occupations of life. It is, in fact, an attempt to solve the problem of how much of what the universities do for their own students can be done for persons unable to go to a university. The fundamental idea throughout has been education for busy people. The majority of the courses have been given in the evening, and the audiences have included persons drawn from all ranks of society and of the widest diversity of previous education and training. Ladies, business and professional men, clerks, tradespeople, and teachers in school have all been represented in the lecture audiences, while the courses at the East London afternoon courses in the suburbs, at a high fee, have been almost exclusively attended by ladies.

LOCAL INSTITUTIONS IN LONDON.

The earliest courses of lectures given under the auspices of the London Society were in connection with local institutions like the London Institution and the City of London College. This policy of utilizing existing educational machinery has been continued. The greatest variety of institutions, from high schools and mechanics' institutes to Toynbee Hall and the People's Palace, have opened their doors to extension lecturers. At first the attendance at classes in permanent institutions was small and the society began to encourage the formation of special committees for various districts in and about London. Local halls, convenient for the people, were engaged for local lectures. This policy greatly increased public patronage of extension courses.

The work of the London Society became better appreciated through this adaptation to localities, and now the older and better equipped institutions are beginning to be of greater service, especially to advanced students, who require more special teaching than that afforded by the local lectures. The need of a central and well-endowed educational establishment is now clearly recognized by the London Society.

Mr. Roberts, writing in 1891, said:

Two years ago the society, by the kindness of the Gresham committee in placing at their disposal the lecture theater at Gresham College, were enabled to establish

[1] Dr. R. D. Roberts, in his Eighteen Years of University Extension, pp. 76–81, gives a full account of the London Society, its origin, development, and present tendencies.

central courses for students from the various local centers, and thus to increase the efficiency of the work. Two or three central courses have been arranged, each term in definite sequence, and the lines of a system of continuous study are being laid down. In the reports of the council, attention has frequently been drawn to the improvement in the quality of the work done by the students in recent years. The institution by the universities' board of the sessional certificate and the certificate of continuous study has given something of form and direction to this effort after greater continuity, and an ideal of systematic work has been held up before the students.

In order to keep students together and to encourage work during the long summer interval between extension courses, the London Society has arranged for so-called "supplementary summer classes" to enable students to prepare themselves for the honor of a sessional certificate. This is given for nine months' work, comprising examinations upon two consecutive winter courses of lectures upon one great subject and a course of private reading in summer, with at least five fortnightly meetings in class, with satisfactory written exercises. Some of this summer work is done in field classes of natural science. Other classes enjoy special advantages for art study in the British Museum.

A criticism frequently made against University Extension teaching in natural science is that no adequate advantages are offered in the way of laboratory work for students. Dr. Roberts says:

The two London colleges, University and King's, through their representatives on the council of the London Society, have offered to arrange practical classes in their laboratories for extension students, with the view of providing facilities for practical work which have hitherto been wanting. A similar spirit of readiness to aid in the development of this important movement has been shown by other bodies in the metropolis. This aid, valuable as it is, can necessarily only be temporary. The laboratory accommodation of the two colleges is heavily taxed to meet the requirements of the day students. It is difficult, if not impossible, to use the same laboratory for two sets of workers, one in the day the other in the evening. Furthermore, the hard-worked staff of professors and lecturers, fully employed during the day, can not advantageously undertake evening work in addition. It is clear, in order adequately to meet the needs of the metropolis in this respect, that a great central college for evening students is needed, taking rank and status with University and King's colleges and, united with them, to form the nucleus of the Teaching University of London.

PEOPLE'S LECTURES IN LONDON.[1]

In order to prepare the way for systematic University Extension courses in the industrial districts of the metropolis a system of so-called "People's lectures" was instituted in 1887, under the auspices of the Gilchrist Trustees and the London Society for the Extension of University Teaching. The idea was to give short and attractive courses upon subjects of real educational value to the people. During the first two years the lectures were given in the more central industrial districts, and proved so popular that in most cases they led to the establishment of regular centers of University Extension work. The method of organizing the work was by means of special and, as far as possible, representative committees for the localities concerned. In one district—Battersea—the local arrangements were undertaken by a committee representing the London Polytechnic, which adopted this among other measures for promoting educational work among the people. The experiment led to a full course of ten lectures, which was supplemented by a summer course in connection with a Students' Association.

Courses of people's lectures have been given in the following districts of London to large and appreciative audiences: Battersea, Enfield, Edmonton, West Norwood, Wandsworth, Kensington, Shoreditch, Westminster, St. Pancras, and Bethnal Green. In eight out of ten of these districts full courses of University Extension lectures have

[1] On this subject see University Extension Journal, July, 1890, p. 65.

been established. The reports of local secretaries indicate the remarkable success of these popular experiments. The Enfield secretary says: "We have never seen in this town larger or more appreciative audiences than have attended the three lectures which have been generously placed at our disposal, while the character of the lectures themselves has been of a most excellent description and admirably calculated to engross the attention of all who have heard them and enlist their sympathies." The secretary of the Battersea district says: "We visited all the large firms during the daytime and gave out tickets to the employees. By this means over 500 tickets were distributed. So great was the demand, however, at the workshops for the tickets that we might have distributed 2,000. * * * The workingmen's clubs were supplied, and, as an instance of the great demand, we may state that a paper containing one hundred and twenty signatures from members of the Social Democratic Federation in Battersea asking for admission tickets was left with us."

Dr. R. D. Roberts, from whose report these extracts and the above facts have been taken, expresses his strong conviction that "these short courses are an invaluable means of awakening interest in the different branches of knowledge and of encouraging the adoption of some permanent scheme of educational work."

The London experiment in University Extension began in the year 1876 with 7 courses of lectures and 139 students in attendance. In 1894 there were 152 courses with a student attendance of 12,951. In a recent session there were recorded 13,155. These figures show the wonderful and steady growth of the University Extension system in the city of London. All of the students are pupils of mature years, either adults past the school age or young people who adopt this method of continuing or supplementing their school work. The motive of the students is purely that of self-improvement. Attendance is not required, but wholly voluntary.

The unit course of extension lectures in London numbers 10, with accompanying class exercises. A so-called sessional certificate is awarded to those students who pass a satisfactory examination upon the required work. To illustrate the growth of systematic study in London, this result may be stated: In 1889 there were issued 12 sessional certificates; in 1896, 348.

A TEACHING UNIVERSITY IN LONDON.[1]

There is now a strong movement in the direction of restoring the original teaching function of the University of London. It is felt that the power to conduct examinations is not enough for an institution bearing that academic name. Those who are in favor of a teaching university propose to form in the city of London a great educational alliance or federation, embracing the higher institutions and corporations of learning in the metropolis, such as the Royal College of Physicians and Surgeons, King's College, University College, Gresham College, Inns of Court, etc. It is said that such an association is favored both by King's College and University College. It is hoped that Gresham College, that old sixteenth century endowment for the people of London, may become the great center of higher popular education, particularly for evening classes, while the two modern institutions above named shall continue their regular work in day classes.

Perhaps the most earnest champion of this movement for a teaching university in London is Dr. R. D. Roberts, secretary of the London Society for the Extension of University Teaching and also secretary of Cambridge University Extension. In an article published in the Journal of Education for August, 1888, Dr. Roberts says:

The existing University of London was founded at a time when the doors of the old universities were closed to Nonconformists. It was really founded for the purpose of affording university privileges to a new class, and, to satisfy the particular wants of the time, was constructed on a somewhat different plan from any previously

[1] The subject of a teaching university for London has been discussed by W. T. Thiselton Dyer in Nature, May 21, 1891.

existing university. It has done a great work, and has still an important work to do as an imperial university. But there is an educational work, even more important, which it can not do. It examines, but it does not teach, and it is time now a new university was founded to organize and direct university teaching in London. If such a new university is, therefore, founded, it should not only fulfill the highest ideal of a university, as the home of learning and research, by affording facilities for original investigation and providing for the education of day students, but should have a department established to afford special facilities for the extension of higher education to evening students, and courses of study for degrees should be arranged to meet the needs of this new class of students. In matters of practical administration, experience only can lead to the satisfactory adjustment of the many difficulties involved, and if it were not for the work which has been quietly carried on by the University of Cambridge in the country for the last fifteen years, and by the London Society for the Extension of University Teaching in London for ten years, under the title of University Extension, this question could hardly have been approached with so fair a hope of arriving at a satisfactory solution. The results of this University Extension work justify the enunciation of the three following propositions:

(1) That there is a growing demand for higher education of the university type amongst busy adults of both sexes engaged during the day in various occupations, whose study must necessarily be carried on in the evenings.

(2) That it is possible by the special method of teaching adopted under the University Extension scheme, continued over a period of years, to give to evening students an education and training worthy of university recognition.

(3) That the work now being done in connection with the University Extension scheme has already led to a demand for greater systematization of the work and continuity of study, which can best be secured by the incorporation of this work into the degree system of a university controlling and directing the education.

All the universities engaged in extension work are teaching universities, and in their capacity as such have organized extra-mural university teaching where the need for it was felt. London, possessing only an examining university, has been dependent upon the efforts of a voluntary association, the London Society for the Extension of University Teaching, for what has been done in that direction. It is true that the University of London is represented upon the Universities' Joint Board, under whose control the educational work of the London society has been carried on. This board consists of three representatives appointed by each of the universities of Oxford, Cambridge, and London. There is, however, no direct and vital connection between the University of London and this work, such as exists between the old universities and their extension work in the country. The remarkable progress of the work of the London society, in spite of the manifold disadvantages under which it labors, proves how great a need exists in the metropolis for the organization and extension of university teaching among busy adults. It can hardly be doubted that these higher educational needs would be more adequately satisfied and organized by the establishment of a teaching university for London.

This teaching university should organize and direct teaching of university rank, whether given within the walls of certain special colleges or not, so that it might be possible for the university to have its lecturers and teachers at work at convenient centers all over London.

University College and King's College would naturally be the university institutions, where complete courses of study for degrees for day students would be, as now, provided. But, in addition, the university should have a special staff of teachers for the evening work, which could, as above suggested, be carried on all over London at convenient centers. In fact, the university professorships and lectureships should be duplicated, for it is impossible that professors busily engaged during the day with their day students can also be expected to undertake evening work, nor can a teacher who is taking large classes in the evening, with the necessary work connected therewith, find much time for other teaching during the day. This point can not be too strongly emphasized, as it is a condition on which the success of such a scheme would largely depend.

Courses of study for degrees should be arranged to be taken by the students either at the colleges or under the recognized teachers of the university at the various centers where university work might be going on. Special courses of study would be laid down to meet the needs of evening students, in which the regulation that has been found to work so admirably on the University Extension scheme should find a place, viz, that the students would not only have to attend the lectures of the professors or lecturers and pass the examination at the end of the course, but would be required to do regular work for the teacher, either on paper or in the laboratory, from week to week during the term.

It is necessary to point out further that the degree course would need to be arranged in such a way that the student who could give his whole time as a day student would complete the work in three years, while the student employed during the day and able to give only his evenings to higher education might take the work in sections, so that the whole course of study might be extended over a period of six or eight years, or even longer.

It should be noted that no lowering of the standard for degrees is contemplated; on the contrary, it is believed that more efficient work would be done under this system, as the student would have to satisfy a double test, viz, that applied by the lecturer at regular intervals during the term and that applied by the examiner in the final examination.

It will be seen that the fundamental principle is the recognition of organized university teaching, rather than of certain permanent institutions of university rank. This would make it possible to bring under the control and direction of the university all the higher teaching of the metropolis. Courses of study forming a part of the curriculum for degrees should be arranged at institutions like the City of London College, the Birkbeck Institute, and the Working Men's College. Although these may not have facilities for higher work, there is no reason why the teaching in certain special branches, which are well equipped at these minor institutions, should not be organized so as to have recognition in a university system for London. While it might thus be arranged that the student should find classes covering the necessary ground for the earlier work at institutions like those above named, or at centers conveniently situated all over London, the lecturers being in all cases appointed by the university and entirely under its control, the advanced and practical laboratory work would have to be done at some central college for evening students. Thus, in a period of six or eight years, evening students would be able, slowly and without undue pressure, to cover the same ground that day students, giving their whole time to study, would cover in three years, and they would find themselves in early manhood or womanhood not only possessing a knowledge of their trade, business, or profession, but also with a valuable mental training and a broad liberal education.

Let it be well noted that the scheme here sketched is already in germ, actually in existence, in the University Extension movement. The method of teaching has been tested and proved by the experience of years, and it only remains now to build upon that foundation a university department which shall give more permanent form and coherence to so natural and vital an educational movement.

The beneficial influence which a real teaching university, controlling and directing the higher education of the metropolis, might exert would be inestimable. It would number among its staff brilliant men of learning and research, and distinguished and successful teachers, and it would hold up a high ideal and intellectual life. To touch the imagination and stir the enthusiasm of Londoners, the university will need to be constituted on broad and bold lines, adequate to the immensity of London itself.

A POPULAR UNIVERSITY.

Percy W. Bunting, editor of the Contemporary Review, said in an article on "A popular university," published in that magazine, May, 1892: "Oxford and Cambridge have in late years accepted two great functions as belonging to their proper business, which in principle cover the whole of what is needed in London." He says, in brief, they examine public schools and they promote University Extension. He adds:

If education is to thrive among us, its basis can not be too broad. We must give as much attention to the many who can learn a little as to the few who can study a great deal. Whatever may become of the higher education, we want a system which shall by oral teaching carry knowledge round to the doors of the people, break it up small, and suit it to the powers of the busy crowd. There are many institutions not considered to be of academic rank, which afford a basis for such a system: The Polytechnics, the University Settlements, the Workingmen's Colleges, and so forth; and if these are not enough, it is easy to create more. There are plenty of buildings which can be utilized; what is wanting is good organization, a central authority, skilled, determined, and endowed, which shall inspire, regulate, and extend all this scattered work—an educational council for London.

Mr. Bunting proposes that such a council should itself constitute the London University. It would be a popular institution from the outset. Like a public library it would foster higher education for all good citizens. He says: "Let us try

the experiment of a new municipal university, with the motto, 'Every citizen a scholar.' * * * A university for London should have, by its very existence, a profound educational effect upon the citizens if it be their university, in touch with their daily life, and guiding upward their ambition for their children."

Mr. Bunting would like to see a "metropolitan university" under municipal control. He suggests that King's College should remain a separate institution, devoting itself "to the great interests of theological teaching, and be supplemented by a parallel theological school, representing that other view of theology which is taught at Mansfield College." King's College represents the established church. Mansfield College stands for independency. University education, from its very nature, ought to be public, and free from sectarian control. Theological education, being at the present time chiefly in the interest of particular churches, may not improperly remain upon a private and sectarian basis. Mr. Bunting argues that some rich, powerful, and independent force, representing the interests of the whole metropolis, must take in hand the establishment of a popular London University.

More than sixty years ago the project of a nonsectarian university in London was defeated. To-day the opponents of this great cause are less pronounced, but conservative and institutional forces will probably oppose for some time to come a metropolitan and nonsectarian university in England. London and the free spirit of the age must finally prevail. We have had a similar struggle in America for every State university, and there will be continued opposition to every larger project for university education. The democratic and secular spirit of the times will doubtless assert itself more and more strongly in America as in England with regard to education. Although good sectarian foundations for the higher education have been laid in Washington and in every State of the American Union, as well as in England, sooner or later there will be in both countries a recognition of a type of university coextensive with the nation.

A UNIVERSITY FOR THE PEOPLE.

In the Nineteenth Century for March, 1899, Churton Collins published a very suggestive article entitled "A university for the people." He proposes the combination of University Extension courses with the scientific and technical work of the London polytechnic institutes, of which there are now 11, many of them occupying "superb palaces," rivaling the best local colleges in England and America. These institutes now have a total student following of 45,000 pupils, a remarkable increase since 1882, when the total number of evening students in London was under 8,000. Mr. Collins would have at least ten hours weekly in these polytechnics devoted to liberal studies, history, literature, and philosophy. Indeed, the experiment has already been tried successfully at the Regents Street Polytechnic, Southwest London Polytechnic, Goldsmith's Institute at New Cross, Birkbeck Institute, and the City of London College. "A more important step in popular education," says Mr. Collins, "has, I venture to think, never been taken." John Morley and Mr. Balfour, in addresses to the Battersea Polytechnic, have both favored the proposed combination of liberal with technical studies.

This project is one of the latest features of higher popular education in the metropolis of London. The fulfillment of the idea awaits only a more generous policy on the part of the polytechnic institutes themselves where the work has already begun. Mr. Collins says: "The polytechnics would be the most appropriate centers to those teaching. They contain in themselves immense numbers, estimated at the present moment (1899) at about 45,000, and they have a convenient rendezvous for the thickly populated districts which surround them. They are as amply provided with the means and appliances for liberal study as they are for technical and scientific teaching, for they already have literary societies; they

have all of them excellent libraries. * * * They are the natural colleges of a People's University."

Mr. Collins thinks that the time is soon coming for a department of higher civil education, whereby the interests of the citizen, whether social, intellectual, or material, may be subserved by the combined forces of liberal, scientific, and technical training. He believes, as does Mr. Goschen, that a man needs culture not only as a means of livelihood, but as a means of life. "Nothing," says Mr. Collins, "can be of more concern to a State than the education of its citizens, not simply as it relates to what equips them for the practical duties of life and the means of livelihood, but as it relates to temper, tone, and character."

IX. OXFORD UNIVERSITY EXTENSION.

EARLY BEGINNINGS.

We have seen that as early as 1850 the idea of early University Extension, by means of local colleges, was proposed at Oxford.[1] The suggestion bore no immediate fruit, but the old idea was revived in 1876, when two Oxford colleges, Balliol and New College, began to make generous appropriations for the support of a university college at Bristol. This new institution owed much to the friendly labors of an Oxford man, Dr. Percival, then Headmaster of Clifton.

In 1877, Mr. Jowett, the master of Balliol College, called the attention of an Oxford Commission to "the considerable movement for secondary adult education then going on in the large towns" and advised the university "to take a little pains about it." He suggested the institution of a central office and a paid secretary for promoting Oxford University Extension. He further suggested that nonresident fellowships might be held by honor men engaged in lecturing or teaching in large towns. All of these excellent ideas have since become realities. Arrangements for local lectures were first authorized in 1878. Oxford, like Cambridge, had simply to utilize and supplement existing machinery. A committee of the academic delegacy of local examinations was empowered to superintend lectures and teaching in the towns of England and Wales. The first secretary appointed for the practical management of the work was Mr. Arthur Acland, whose father, Sir Thomas Acland, had been most helpful in instituting "the parent system of local examinations." The next secretary to the delegacy was Mr. Michael E. Sadler, a well-known lecturer upon economic and social subjects, to whose energy and skillful adaptation of University Extension to the actual needs of the people much of the democratic success of the whole movement in recent years is due.

From the beginning the work of Oxford has been more popular than that of Cambridge. Coming later into the field, after the first enthusiasm of the new movement was spent, the older university realized from experience, perhaps more keenly than did Cambridge, the peculiar limitations of extension work, particularly in the less populous industrial centers and country towns. Here public spirit was not always sufficiently developed for the maintenance of long courses of lectures. Financial difficulties arose in many places. Deficits occurred, and it soon became clear that it was demanding too much from small and rural districts that they should come up to the high standards which Cambridge had set when she first began educational work among prosperous and progressive communities. Oxford had a hard struggle during

[1] In the Quarterly Review for April, 1891, there is a good account of the origin of University Extension at Oxford. The first beginning of the movement is said to have been in the year 1845, when a memorial signed by influential persons was sent to the governing authorities of the university. Complaint was made that university education had not been extended, whether for clergy or laity, in proportion to the growing population of the country, its increasing empire, or deepening responsibilities.

the first few years of her missionary labor. Mr. Sadler says: "In most towns it was an uphill fight to keep the courses going. In many the work flickered, and then for a time went out. For the great majority of towns in England University Extension was before its time." Some of the noblest educational and social experiments in both England and America were the indirect outcome of the apparent failures of Oxford men in those early years of University Extension.

NEW DEPARTURE IN 1885.

A fresh start was taken by Oxford men in 1885, when they boldly declared in favor of short courses. "In that year," says Mr. Sadler, "the whole movement started forward. Oxford began work on a larger scale, its new vigor being largely owing to the initiative of the present head master of Rugby [Dr. Percival], then president of Trinity College. A conspicuous feature of the Oxford work was its employment of the short-course system. There were naturally serious objections to the policy. Half a loaf may be better than no bread, but towns which can afford a complete system of teaching need not be encouraged to content themselves with one that is incomplete. The offer of a shorter course might relax energies which were really capable of securing a full one. It is undeniable that there was great weight in this view of the question. However, the policy of offering short courses has been amply justified by its results. It has practically brought University Extension within the reach of every town in England."

Cambridge men have been inclined to criticise Oxford's more popular methods of promoting University Extension, but a happy compromise seems to have been reached in the practical operation of the two systems. Cambridge lecturers frequently consent to give half courses, that is, only six lectures, where circumstances require such limitation. Oxford gives full courses wherever she can, and both Oxford and Cambridge reserve their certificates for full unit courses.

TRAINING OF LECTURERS.

The success of English University Extension has turned chiefly upon the ability of the lecturers. It is considered very important that incompetent and poorly trained men should be kept out of the lecture field, for, in some cases, good and hopeful centers of educational work have been set back or utterly discouraged by a disappointing course of some ill-prepared lecturer. Accordingly, in England, university authorities early took in hand the preliminary training and proper testing of candidates for local lectureships.

Mr. Robert A. Woods,[1] in his chapter on "University Extension," says:

Any young university man may apply for an appointment as lecturer. His college record is examined. He must have had experience in speaking in public. He must be thoroughly acquainted with the extension system. Finally, he must deliver to a private audience the course of lectures he proposes to give. If all tests are satisfactorily passed, a small sum of money is voted to send him to some typical centers, in order that he may see senior lecturers at their work.

It is an important fact, and the promoters of University Extension do not forget it, that the extension lecturer needs to be of a different type from the resident lecturer at a university. He can not expect to find his hearers already interested in his subject, but must begin by arousing them to its significance. His way of presenting it must be very clear and simple. He must have some of the traits of a public speaker, so as to hold the attention of a general audience. He needs to have a turn for organization, in order to bring up to their highest efficiency the centers to which he goes. Not the least important thing is that he should enter his work with a desire for the improvement of social conditions and a belief that University Extension may be made a valuable factor in bringing about the good change.

One of the best educational results of actual experience as a University Extension lecturer is a dawning consciousness of his own ignorance of the subject which he is

[1] English Social Movements, Charles Scribner's Sons, 1891.

undertaking to teach. A well-known extension lecturer on English literature said that when he began his public work, he was amazed to discover, from the class conferences and weekly exercises, that many of his pupils in English towns and villages knew more about certain literary topics than he did himself. He admitted, however, that this fact was not very surprising when he considered that the English universities did so little for the training of their students to a good knowledge of English literature, while many English men and women in the common walks of life were earnestly devoting themselves to this special study. Political economy is another of those subjects in which a university man often finds his weakness when he attempts to lecture to workingmen and manufacturers, who are often well versed in special branches of this wide domain.

A second good result of the training process in actual extension work is the attainment, by university men, of a more intelligent sympathy with the common people, with the very heart of England. College-bred men who have traveled throughout their own country, who have observed closely the modes of life in English towns and villages, who have met men and women of various classes, who have made friends with artisans and miners, and who have entered their homes and domestic circles—such men know England and her people better than do the dons and student-gentry of Oxford. No American who has met varying types of English university men can fail to be impressed with the generous, humanitarian, and truly democratic spirit which characterizes an extension lecturer. This type is more truly English, in a national sense, than are the ultra forms of Anglomania. The same broad and sympathetic views are conspicuous in the young Scotchmen who have entered the national and international fields of educational, social, or religious endeavor. There is a missionary spirit among educationists and extensioners. Professors Drummond and Geddes and Messrs. Roberts, Moulton, Sadler, Mackinder, and Herbertson have made the Scotch and English student types at once more national and more cosmopolitan.

A third result of training as a public teacher in a larger academic field is the favorable reaction upon the lecturer himself. He becomes a better university instructor by reason of his experience with the people. Like the fabled wrestler, he gains in strength from contact with mother earth. From necessity he has learned to be simple and clear in his language and mode of instruction. He has acquired the rare faculty of telling what he knows in a way that is at once intelligible and interesting. College professors are not always lucid. They are sometimes positively dull. Students quickly discover the superiority of the new type of academic lecturer, who has acquired some knowledge of the world and of the art of public speaking. College graduates who have had experience in extension work recognize in themselves the advantage which they have gained over their former scholastic heaviness. The conduct of one or two courses of popular instruction shows a man his defects and limitations.

A suggestive story is told of an extension lecturer in England, who was also a college instructor. When urged to present one of his favorite academic subjects in an extension course, he declined, on the ground that he had not thought out the matter clearly enough for the people, although he was lecturing upon the subject at college. "You know," he said, "anything goes down at college." Old professors and routine lecturers understand this fact only too well. Their unfortunate students are obliged to follow ancient academic courses in preparation for examinations. The old school or cloister method of teaching is thus "protected." The new school, on the contrary, represents free trade in the academic world. Under the old system, unfit professors sometimes survive. The dead hand restrains the living. In the larger world of academic competition and university extension only the fittest survive. The law of life becomes supreme. Thus, in training graduates for the public service in matters of higher education, the universities are preparing the way for a more efficient class of college professors.

OXFORD INSTRUCTIONS.

Oxford extension lecturers are urged by the delegates, who have supervision of the work, to pay particular attention to the formation of classes. Lecturers should encourage students to remain after the lecture and receive further instruction on points which were not made quite clear in the public course. Lecturers are instructed to remind their students that, in order to obtain admission to the final examination, they must attend not less than two-thirds of the whole number of classes held after lecture and not less than two-thirds of the whole number of weekly exercises. At the conclusion of his course the lecturer prepares a list of students qualified to take the final examination and sends the list to the office of the delegates in Oxford. The lecturer is expected to indicate in this list the names of students whom he regards as eligible for distinction. This honor is awarded only to those who are recommended to the delegates by both the lecturer and the examiner. In the preparation of the examination paper the examiner is guided by the printed syllabus used by the lecturer. If the latter has departed in any way from his plan of instruction, he is expected to inform the delegates. The lecturer makes a report to the local committee as well as to the delegates. He reports the average number of students attending the lecture, the average number attending the class, and the average number of weekly exercises, and any other facts of interest or importance. He is expected to encourage the formation of students' associations and to cooperate in every possible way with the local management. The increasing number of written exercises which the lecturer is required to look over has led to this resolution, passed at a lecturers' conference: "That the lecturer should receive additional payment for the looking over and correction of weekly papers above a certain number, e. g., an average of twenty-one per lecture."

To Americans it is an interesting illustration of the survival of mediæval custom in University Extension that lecturers are expected to wear academic gowns, unless they see special reasons for the contrary. It was an interesting sight for a Baltimore university man to see in a Quaker meetinghouse in that city an English churchman, the Rev. Hudson Shaw, dressed in the scholastic Oxford gown and lecturing to a mixed audience of men and women, including some worldlings and a few Johns Hopkins students. Some of the good Quakers were dressed in Quaker drab.

PRINTED LECTURES.

For the benefit of isolated students who can not attend a local course of University Extension lectures Oxford men early devised short educational courses of printed lectures which are circulated among individuals and read in local groups. For example, in 1887 six lectures were printed at the Clarendon Press, Oxford, on "The worker and his welfare" for members of workingmen's cooperative societies. The first lecture was introductory and contained a discussion of the "Action of the state and public opinion," and also a good list of books on cooperation and other topics referred to in the lectures. The subject of the second lecture was "Association and cooperation;" of the third, "The intelligence of the worker;" of the fourth, "Cooperative production;" of the fifth, "Industrial partnership;" and of the sixth, "Pauperism," and the conclusion of the whole course. Each printed lecture was accompanied by a list of questions well calculated to stimulate inquiry and discussion among workingmen. These lectures were circulated fortnightly in 17 towns, in 1887, and were extensively read by groups of workingmen, who talked over among themselves the subject-matter of the course. This practice, early begun, has been continued in varying forms in both England and America. Chautauqua made it widely popular in this country and great publishing houses have given a large circulation to both popular and academic courses of lectures. The press is now perhaps the most

useful and efficacious means of extending university influence and the results of modern scholarship.

TRAVELING LIBRARIES.

The University Extension courses of Oxford are locally organized, supported, conducted, and supervised in much the same way as are the local lectures of Cambridge. A few strikingly original features have been added to the system by Oxford. One which deserves special attention is the English "Traveling Library." This ingenious device has been introduced into America in connection with well-regulated systems of University Extension like that now proceeding from the regents of the University of the State of New York and from the State library at Albany. The greatest practical difficulty which Oxford lecturers experienced in provincial towns and rural districts was the lack of good books and easily accessible libraries. And yet the encouragement of private or class reading upon topics suggested by the course is absolutely essential to its educational success. Accordingly, in 1885, the delegacy, or Oxford committee on University Extension, provided choice selections of text-books and standard authorities for the use of the lecturers in connection with their local courses. These books, neatly packed in small, portable cases, are the Oxford traveling libraries. They are duly exhibited to local classes and are placed at their service, under proper regulations, during the entire period of the lecture course. Sometimes, in the case of large classes, extra loan collections of standard books are lent by Oxford, for an additional fee. In towns where there are good circulating libraries a so-called "University Extension table" is sometimes provided for the temporary grouping of books which are of special interest in connection with the lectures then in progress. The University of Oxford endeavors to encourage private reading by offering prizes in books to those students who pass the best local examinations on University Extension work.

THE OXFORD SYLLABUS.

Another excellent feature in the Oxford system is the interleaved syllabus for note taking. It is a great stimulus to an intelligent student attending public lectures to have before him not only a good printed outline of the subject-matter of the lecture, with important dates, names, and quotations, but also, in proper connection, blank pages for noting additional points of particular interest. The student has at once "a set of model notes" and the opportunity for further note taking. The Oxford syllabuses are remarkably suggestive for their skillful display of striking quotations and for their references to good books. Just enough matter is printed to quicken the imagination and to excite interest in further inquiry. The ordinary syllabus of lecture topics is a bare skeleton, as unattractive as dry bones or tables of contents usually are. But the Oxford syllabus is in many cases rounded out with a certain literary substance and has sufficient color to captivate the reader's fancy. It is, so to speak, an illuminated syllabus.

SCHOLARSHIPS FOR EXTENSION STUDENTS.

In order to encourage good work in local extension courses and to give students an opportunity to study for a short time in Oxford, scholarships yielding from $25 to $50 were offered by generous individuals like the Marquis of Ripon, Mr. J. G. Talbot, M. P., the rector of Exeter College, Mr. F. D. Mocatta, the Rev. W. H. Shaw, Miss E. G. Kemp, and others. These scholarships were awarded for English essays on subjects drawn from English literature, English history, natural science, and political economy, including industrial history.

The subjects at one time proposed in history were the following:

(1) A comparison of Edward III and Henry V as conquerors and military leaders; (2) Cromwell and the permanent results of the English rebellion; (3) describe an

English county, its administrative organization and social life in the reign of Edward III.

In literature the following topics were suggested:

(1) Contrast in their general characteristics the literary productiveness of the age of Anne and that of the reign of Queen Victoria. To what causes would you ascribe the differences between them? (2) Compare Milton and Spenser; or Wordsworth and Tennyson.

In political economy the candidate was to discuss the economical and social effects of the introduction and use of machinery.

In science one of the following topics was to be taken:

(1) The effect of minerals and other constituents of the earth's crusts, and the effect of the form of the earth's surface, upon the industries and the distribution of the different races of man in any country. To be illustrated chiefly from Great Britain.

(2) The relation borne by various physical forces to one another.

Each candidate was allowed to write an essay on one subject only, but he might select it from any one of the four groups, history, literature, economics, and science. All competitors were required to have a certificate of attendance upon at least one course of instruction and to have attained "distinction" in the examination in that course. They must also be recommended by their local committee as in all respects suitable candidates for election to a scholarship. The university authorities, however, reserve to themselves the right of admitting any student to competition or of rejecting the name of any candidate. Students elected to scholarships are invited to visit Oxford and attend the summer meeting.

PRESENT METHODS, 1899.

The present aims and methods of Oxford University Extension are clearly stated in the official pamphlet of February, 1899. The delegacy or committee on Oxford University Extension declare it their aim to bring within popular reach opportunities for the higher education, so as to widen English intelligence and enlarge the sympathies. Instruction is still organized by means of local lectures, classes, written exercises, final examinations, and certificates of proficiency. The best books on the subjects of instruction are recommended. Good use is made of public libraries and traveling libraries composed of good selections of literature appropriate to the subject treated. The lecturers who conduct the local work are carefully chosen not only for their knowledge but for their gift of public teaching. They constitute a kind of extension faculty, whose circuit of influence ranges through perhaps 200 towns of England and Wales.

During the session 1897–98 there were no less than 18,242 students attending Oxford University Extension courses. They are given in small towns as well as great. If a community can not afford a full course of twelve lectures, which is the unit of Oxford, shorter courses of six or even less are allowed. The subject of the course is usually selected by a local committee acting in concert with the university delegates. The favorite subjects are drawn from ancient and modern literature, history, science, political economy, and art. The lectures are given at weekly intervals when there is a full course of twelve; but at fortnightly intervals when there is a half course of six lectures. This method gives time for students to read in connection with the lecture and to prepare for the class or conference which follows the ensuing lecture. Questions are still read out or distributed after each lecture to be answered by students at home. The answers are returned to the lecturer by post, and, after having been read and corrected by him, are returned to the writers at their next class meeting. Here criticisms of the papers are publicly given and difficulties are explained.

The final examination is open to students who have attended the lectures and at least two-thirds of the classes, and have written answers to at least two-thirds of the questions set after each lecture. The examination is entirely optional, but is restricted to students who are over 15 years of age. Examinations are often set for short courses, but are credited only by the examiner. So-called "terminal certificates" are given only after a course of twelve lectures. "Sessional certificates" are awarded for a complete session's work, embracing two unit courses of twelve lectures each.

The examiner in England is usually quite distinct from the lecturer and is specially appointed by authority of the university delegates. The examiners are almost always chosen from those who have been recent examiners in the "final schools of the university" and who know what the standards of a "pass examination" and an examination with "distinction" really are. Honors are awarded to extension students in such cases only as would be distinguished at the university. A prize locally instituted is often awarded to that extensioner who is considered by the examiner to be the student of greatest merit.

For the encouragement of continuous and progressive study under the direction of Oxford, local centers now guarantee to provide support for instruction in definite subjects over a period of years. Such towns are recognized as "centers affiliated to the university," and a higher grade of testimonials called "affiliation certificates," or higher certificates of systematic study, are granted in recognition of progressive study or a definite sequence of subjects. Oxford recognizes certificates granted by Cambridge, Victoria University, and the London Society.

A high award for local work is the vice-chancellor's certificate, which is awarded to those who have won a certificate of systematic study and have also passed an examination in (1) arithmetic, (2) Euclid, Books I, II, III, (3) algebra to quadratic equations, inclusive, and (4) Latin, and one of the following languages: Greek, French, German. This certificate is accepted by the education department of the English Government as qualifying the holder to be recognized as an assistant teacher.

The education department also gives recognition to holders of University Extension certificates for those who wish to compete in the Queen's scholarship examination in one of the following branches of knowledge: (1) English language and literature, (2) geography, (3) history, (4) languages.

X. LOCAL COLLEGE EXTENSION IN ENGLAND.

In America much is said about the evil of multiplying local colleges. On the part of certain of our educational reformers there seems to be a growing disposition to centralize the higher education in the greater universities and to reduce the colleges to the level of local gymnasia, or preparatory schools. There are some good reasons for favoring this scheme, but on the other hand it should be noted that in England there is at the present time quite a different and more national spirit. There is a marked inclination, if not to decentralize, at least to distribute higher education and to foster the growth of local colleges by a system of affiliation with the great universities. Something can be learned by American educators from a careful study of the origin and rapid increase of local colleges in England, in connection with University Extension. Perhaps by an adaptation of English experience to the American situation a way may be discovered of combining university and college interests in a confederate or federal, if not a national, system of higher education for the whole people.

UNIVERSITY COLLEGE.

The beginning of the local college movement in England will be found in the differentiation of University College and King's College from the University of London. This latter university was the institutional result of the successful agita-

tion begun in 1825 by Thomas Campbell, Lord Brougham, Joseph Hume, and others, in the interest of nonecclesiastical education. For two centuries or more dissenters, unless willing to commit perjury, had been virtually excluded from university privileges at Oxford and Cambridge.

ENGLISH PROFESSORS IN VIRGINIA.

The men who began agitation for a nonecclesiastical university were friends and correspondents of Thomas Jefferson, who had already matured a scheme for the first secular university in the English-speaking world. Jefferson's friend and agent, Francis Gilmer, went to England in the year 1824 with letters to Thomas Campbell and Lord Brougham and with full knowledge of Jefferson's educational plans for the University of Virginia. These plans were already in print and were well known in England. Whether they influenced Thomas Campbell and Lord Brougham in shaping the University of London is now a matter of conjecture. The coincidence of the two nontheological establishments in England and in Virginia is certainly striking. The close academic connection of the two institutions is evident from the fact that the first professors[1] called back to England and to the University of London, or University College, when it was opened in 1828, were George Long, professor of Greek, and Thomas Hewett Key, professor of Latin.

The idea of a possible connection between the University of London and the University of Virginia was first suggested by Mr. William P. Trent in his monograph on English culture in Virginia, published in the Johns Hopkins University Studies, volume 7, page 110. Mr. Trent says some such project as the University of London had been in Campbell's mind since his visit to Germany in 1820, "but it was not brought prominently forward until January 31, 1825, at a dinner given by Brougham.[2] The matter was then pressed warmly by Brougham, Joseph Hume, Dr. Birkbeck, and others, and was brought to a successful issue in 1827. Now, as Campbell had allowed the idea to rest for five years, I do not think it at all improbable that Gilmer's visit, connected as it was with a similar movement in a kindred country, had a great deal to do with giving a fresh impetus to the scheme. Then, too, Gilmer had been thrown into intimate relations with Brougham and Dr. Birkbeck, and probably with Leonard Horner, and had doubtless by his enthusiasm kindled afresh their own natural impulses toward educational work—and these three were prominent among the founders of the London University. Besides there is a striking parallel in the untheological basis of both colleges. It is well known that this latter institution drew back two of the professors whom England had lent to America; but it is more than probable that the connection between the two universities began with Gilmer's visit."

KING'S COLLEGE.

The ecclesiastical spirit in English politics proved too powerful for the new and hopeful institution, although founded by private munificence, in the interest of dissenters and of scientific research. In less than a year after the opening of University College a reactionary sentiment found expression in the institution of King's College (1829) intended to combine with the original plan for teaching languages, mathematics, natural and moral science, history, economics, laws of England, medicine, etc., instruction in "the doctrines of Christianity, as the same are inculcated by the United Church of England and Ireland."

This meant a new religious establishment in the name of university education. So strong did the reactionary sentiment prove that in 1836 University College by a

[1] See H. B. Adams on Thomas Jefferson and the University of Virginia, pp. 116-117, 160-161 (Bureau of Education, Circ. Inf. No. 1, 1888) and W. P. Trent's English Culture in Virginia, Johns Hopkins University Studies, vol. vii.

[2] See the article on "Campbell" in the Dictionary of National Biography, and also Beattie's Life of Campbell.

distinct charter was dissociated altogether from the University of London, which was left henceforth high and dry, as a simple examining body with power to give degrees, but without any teaching force, which is the primary function of a real university. King's College, the ecclesiastical institution, now went rejoicing on its established way.

AN EXAMINING UNIVERSITY.

Until the year 1858, it was required that all candidates for degrees in arts, law, or medicine at the University of London should have received their previous training in colleges that were affiliated to the university. Since that time there has been no restriction as to the place of preparation. The University of London has rendered very great service to the cause of higher education in England by encouraging young men who could not afford residence at Oxford or Cambridge to come up for examination, and that without religious tests, before the award of degrees. During a period of fifty years nearly 59,000 candidates appeared for examination; of these, nearly 19,000 matriculated, and nearly 6,500 obtained degrees. Graduates of English middle-class schools are fond of taking the matriculation examination of the University of London and often regard this as their final educational test. The University of London and University College early lent their influence toward the higher education of women (1869), who were first admitted to the London degrees in 1880. Oxford, as we have elsewhere seen, gave a great impulse to University Extension by the institution of local examinations in 1857. Her first academic enterprise outside her own walls was the institution of the College at Bristol, in the year 1876. This was one of the many beginnings of the local college movement in England.

UNIVERSITY COLLEGE, NOTTINGHAM.

In 1874, a resident of Nottingham offered £10,000 for the local endowment of University Extension if the town authorities would erect buildings suitable to the accommodation of university lecturers. Additional money was afterwards secured and the corner stone of University College, Nottingham, was laid 1877. This is said to be the first of the local university colleges arising from the influence of University Extension teaching. The buildings were erected mainly by the corporation, at the cost of about half a million dollars. Together with the Central Free Library, the University College forms the most striking architectural feature of Nottingham.

The institution is well equipped with lecture theaters, laboratories, class rooms, and "common rooms." It is attended by over 2,000 students who live in the city. Many others come from neighboring towns to enjoy these local advantages. There is a flourishing technical school connected with University College and also a Free Public Natural History Museum. The American visitor to Nottingham will be favorably impressed with the Central Free Public Library, which is a People's University in itself. It has a dozen or more free branch libraries and local reading rooms scattered throughout the city. One of them is known as the Children's Free Lending Library. Thus in its growing municipal family the city of Nottingham provides for every grade of public teaching. An excellent popular history of Nottingham has been written by J. Potter Briscoe, the public librarian, who takes a commendable pride in the educational institutions of his city. A well-known public-spirited citizen of Nottingham is the Rev. Dr. J. B. Paton, one of the principal founders and promoters of the National Home Reading Union of England (suggested by the American Chautauqua). Dr. Paton is also an earnest champion of Evening Continuation Schools, in which recreation, in some measure, is combined with serious study. Although English educationists have laid great stress upon strictly studious work in the evening schools, nevertheless Dr. Paton's idea finds many warm supporters, and in all vacation and summer schools it certainly will continue to be prominent.

MASON COLLEGE, BIRMINGHAM.

This institution was founded by Sir Josiah Mason in 1875 and was opened October 1, 1880, with faculties of art and science. The institution was especially planned for the benefit of a manufacturing or industrial town, and at the beginning had only four professorships—mathematics, experimental physics, chemistry, and biology; but other departments—zoology, botany, physiology, geology, and engineering—were soon added. Then a faculty of the arts was established with professors of Greek and Latin, the English language and literature, lecturers on the French and German language and literature. In 1892 the faculty of Queen's College was transferred to Mason College, which is situated in the very center of the municipal life of the city, near "Chamberlain place," and forms one side of a square, of which the other sides are occupied by the town hall, the council house, Corporation Art Gallery, and the free library. The college faces the statue of its founder, Sir Josiah Mason. Toward the further scientific development of Mason College Mr. Andrew Carnegie, the multimillionaire of Pittsburg, has lately extended his bounty.

There are few sights in the world more encouraging to a believer in the education of democracy than the city of Birmingham, with its splendid free library and numerous local branches; the Midland Institute with its intelligent and varied activities for the higher education of the people; the Corporation Art Gallery with its superb pictures and statuary; the School of Art on Edmund street; Corporation street, that grand new thoroughfare with the stately Victoria law courts. If ever a great city was a great educator of the people, Birmingham, Manchester, Liverpool, Bristol, London, Edinburgh, and Glasgow deserve to be in that class.

UNIVERSITY COLLEGE, BRISTOL.

This institution originated in a desire of public-spirited citizens to provide for the scientific and higher technical training of young people, above the ordinary school age, in the west of England and South Wales, especially for those preparing for manufacturing and commercial pursuits. The college was first opened in 1876. Lectures were given to day and evening classes by resident professors and lecturers of distinction. The Bristol Medical School is affiliated to the college, and now occupies a new building opened by Sir Andrew Clark in 1892. University College has little or no endowment, but it receives annual subsidies from the Government and considerable help from the technical committee of the city of Bristol and from generous citizens.

Balliol and New Colleges, Oxford, have cooperated in the support of Bristol College on the condition that literary teaching shall be included in the curriculum, and instruction be open to students of both sexes. This is an interesting fact, showing that Oxford colleges believe in coeducation for provincial colleges, and in academic life under more modern civic conditions than those now prevailing in the older universities where students are still living in residence. Of course in the local colleges of England, students live at home or in private families. The university buildings, as in Germany and in some American cities, are simply for academic work and not for dormitories.

The University College, of Bristol, supplies persons of either sex with the means of continuing their studies in science, mathematics, languages, history, literature, and music. It affords systematic instruction in those branches of applied science, which are connected with the arts and manufactures. Students who desire to become engineers, surveyors, or architects can obtain their training there. In Bristol there is also a so-called "Merchant Venturers' Technical College," which is doing superior work for day and evening classes, in all branches of applied science. In connection with this college is a "Boys' School," for practical training in science and for those

who wish to enter the royal navy or the merchant service. There is also an applied arts department for the cultivation of the artistic talent of persons of either sex.

Both the University College and the Merchant Venturers' Technical College carry on courses of extension lectures, more especially on scientific and technical subjects, but there are some popular themes. The two institutions are admirably adapted to the needs of a large commercial and industrial population. Americans should never forget that it was from the port of Bristol in 1497 that the Cabots sailed in the Bristol ship *Matthew* and that to them is due the English discovery of North America. When the present writer was in Bristol in the summer of 1896, preparations were being made for the historic commemoration of the Cabot Quatercentenary.

In Bristol, the writer visited with great interest the grammar school, in Tyndall's Park, opposite University College. The school was founded in the time of Henry VIII, 1531. The present buildings date from 1879. There are scholarships awarded in this grammar school, which give the holder $500 a year for five years at St. John's College, Oxford. Thus the town of Bristol is closely allied to the oldest English university, as well as to the New World.

VICTORIA UNIVERSITY.

This was founded by royal charter in 1880 and was enlarged by supplemental charter in 1883. The Queen of England is the Visitor of the university, which takes its name from her. The managing authorities are the chancellor, vice-chancellor, the university court, the university council, and the convocation. The university has power to confer degrees upon persons who have pursued a regular course of study in any college of the university, and who pass the required examinations. The seat of the university is at Manchester, but it embraces the following colleges: (1) Owens College, Manchester; (2) University College, Liverpool, admitted as a college of the university in 1884, and (3) Yorkshire College, Leeds, admitted as a college of the university in 1887.

OWENS COLLEGE.

This institution was founded in Manchester, England, under the will of John Owens, in 1846. He left for the foundation £96,654, with the condition that nothing was to be spent on buildings.[1] These were otherwise provided. The college was opened in 1851 with a staff of seven professors and lecturers in a house belonging to Richard Cobden. A chemical laboratory was built by the aid of subscriptions amounting to $50,000. In 1868–69, the collection of the Manchester Natural History and Geological Societies were transferred to the college, and formed the beginning of that great collection which the American tourist now sees in the new museum.

Owens College was incorporated under two acts of Parliament, 1870–71, and in the latter year received power to admit women students. The following year the Manchester Royal Society of Medicine was incorporated with the college, and in 1873 it was removed to the new buildings on the present site in Oxford road.

In 1852, Owens College had only 62 day students. Ten years later it had 448. In 1892, the total number of day students was 981, and the number has gone on slowly increasing from year to year. Besides day students, it has several hundred enrolled in evening classes. The college does not offer elementary work. It has departments of mathematics, physics, biology, chemistry, mineralogy, geology, geography, engineering, and a great variety of courses. A good sketch of the history and present condition of Owens College was written by Mr. P. J. Hartog for the Record

[1] The University Extension Journal for October, 1890, says of Owens College, Manchester: "The founder, Mr. John Owens, expressly prohibited the use of any part of his bequest in building expenditure, and for the first few years of its existence the college lived and worked in the comparative obscurity of a back street in Manchester."

of Technical and Secondary Education, July, 1895. A fuller account of "Owens College, its foundation and growth, and its connection with the Victoria University, Manchester," by Joseph Thompson, was published by Cornish, of Manchester, in 1886.

UNIVERSITY COLLEGE, LIVERPOOL.

This local college, a model of what a city university should be, was established in 1882 for the promotion of higher education in Liverpool and vicinity. Two kinds of educational work have been attempted: (1) Day classes for students desiring ordinary academic training; (2) evening classes for persons occupied in business or otherwise during the day.

University College, Liverpool, is finely situated on Brownlow Hill and comprises a magnificent suite of stone buildings devoted especially to the liberal arts and to scientific, as well as technical education, with engineering. The institution has one of the finest engineering laboratories in the kingdom, a good library and the so-called Jubilee Tower, built by public subscription as a memorial of Her Majesty's Jubilee. University College sprang out of the "Royal Institution," an earlier foundation, which has now been absorbed.

In connection with the regular courses of college instruction there are evening classes and lectures, which attract many students from the city of Liverpool after the work of the business day is over. Classes are offered in the ancient and modern languages, in philosophy, education, political economy, commercial geography, mathematics, biology, botany, geology, and many technical subjects. No classes are formed unless five students apply and public lectures are given only to an audience of not less than eight. All courses are open to persons of either sex. The usual fee is six shillings for a course with a registration fee of one shilling. Each course requires home preparation and certain periodical papers representing the work of the class. At the end of the course a simple certificate is awarded to students who have satisfied the professor as to the character of the work accomplished and the regularity of attendance.

YORKSHIRE COLLEGE, LEEDS.

This institution had its origin in a meeting held in Leeds in 1869 for the purpose of establishing a College of Science in Yorkshire. The college was founded in 1874, and its aims were declared to be the supply of instruction in those sciences which are applicable to the manufactures, engineering, mining, and agriculture of the county of York, and in such aims and languages as are cognate thereto. The institution began with three scientific professorships, one of geology and mining, one of chemistry, and one in physics and mathematics. Chairs of biology and engineering were added in 1876 and soon afterwards chairs of classics and of literature and history. Funds for the institution were obtained by subscription and by special grant from the Drapers' Company.

The first president of the institution was Lord Frederick Cavendish, who was assassinated in Ireland in 1882. His memory has been nobly perpetuated by the Cavendish chair of physics.

The Marquis of Ripon was his successor, who in the twenty-first annual report of Yorkshire College (1894–95) gave a valuable historical address regarding the institution. It appears that there was an early medical school in Leeds, but, in 1884, it was amalgamated with Yorkshire College. The prominence given to textile interests, weaving, dyeing, and the fine arts is due to the influence of the London Cloth Workers' Company. Yorkshire College has now over a thousand students, about 500 coming by day and perhaps as many more in the evening. Yorkshire College applied for and obtained admission to the Victoria University in 1887. The college has obtained from the county councils in the North, East, and West Ridings and from the City of Leeds very substantial help in promoting technical education.

The institution has been of particular service to farmers throughout the county by means of extension lecturers dealing with agricultural topics. The strength of Leeds undoubtedly lies in scientific, technical, and rural courses.

An official circular issued by the authorities of Yorkshire College contains the following interesting information regarding this institution. Usually the English local colleges of the modern type have no residential accommodations for students, but Yorkshire has:

The Yorkshire College is one of the constituent colleges of the Victoria University, for whose degrees in arts, science, medicine, and surgery its students are therefore eligible. It also prepares for graduation in the University of London; and it offers complete courses of training for various professions and employments, including civil, mechanical, and electrical engineering, coal mining, analytical chemistry, the manufacture, dyeing, and printing of cloth and other textile fabrics, leather industries, and agriculture. The teaching staff consists at present of 18 professors, 30 lecturers, and 25 assistant lecturers, demonstrators, and teaching assistants. The object of the institution is to supply students whose homes are at a distance from Leeds with the advantages of a common collegiate life, by providing a hall of residence similar to those which have been established in connection with Owens College, Manchester, with the Edinburgh University, and with some of the London medical schools. Lyddon Hall has been erected upon a suitable site in Virginia road, on elevated ground, within five minutes' walk from the college. The accommodation consists of dining hall, recreation room, and other rooms for common use, and a separate room furnished as a private study and bedroom for each student. A piano and tennis court are also provided for the use of the students. The charge is at the rate of £60 a year for students in the department of arts and science, who keep a session of about 32 weeks, and £70 for students of medicine, whose session lasts about 38 weeks. Fees are payable in advance at the beginning of each of the three terms of the session. The charges cover everything except beer (if taken) and the student's laundry bill. Arrangements can also be made for residence during vacation. The accommodation of the hall is limited to 30 students.

VICTORIA UNIVERSITY EXTENSION.

All of the local colleges connected with the Victoria University have undertaken extension work. It is hoped, "as a general result of University Extension, that the audiences may be brought more closely in touch with the thought of the present day, and that their interest in history, literature, art, and science may be both quickened and developed." Practical courses have been given on hygiene, political economy, the rights and duties of the citizen, the chemistry and physics of common things, agriculture, coal mining, etc. Such instruction "forms part of the great system of technical education which is intended to make Englishmen more efficient as a nation of workers."

In order to promote an interest in extension work, single pioneer lectures and short courses of from 4 to 8 lectures are offered. The long courses consist of from 10 to 24 lectures. The ground to be covered by the lectures is indicated by a printed syllabus distributed at the beginning of the course. The syllabus contains a choice list of books. Private study and reading are encouraged by

TRAVELING LIBRARIES.

These are issued by the university in connection with definite courses of public instruction. The following regulations will interest Americans, who are now introducing the system in all parts of the United States:

1. Each library contains a selection of books, chosen by the lecturer as the most suitable to be studied in connection with the course concerned.

2. Any committee desiring the use of a library, in connection with a course of University Extension lectures, must make application to the secretary of the University Extension committee, Victoria University, Manchester. (Applications for libraries in connection with courses on natural science, coal mining, and agriculture, delivered under arrangement with the north, east, and west riding county councils, should be made to the secretary, Yorkshire College, Leeds.)

3. The libraries are the property of the university, and are placed by them in the hands of the local committees, who are held responsible for their proper care, and are required to replace any volume or volumes that may be damaged or lost while the library is in their charge.

4. A charge of £1 is made to the local committee for the use of a library, and the committee are further required to pay the cost of carriage from the university.

5. The books are intended for the free use of students attending the lectures, preference being given to those who are regular members of the class.

6. A record of the weekly circulation of each volume must be kept by a member of the local committee, or its representative, on the printed form provided for the purpose. It is suggested that each volume should be issued for one week, at the conclusion of each lecture, and that, at the expiration of the week, the borrower should be permitted to renew his loan if no other application has been made for the volume. At the end of the course the circulation form is to be returned, with the traveling library, to the university. (Libraries issued in connection with courses on natural science, coal mining, and agriculture, delivered under arrangement with the north, east, and west riding county councils, should be returned to the secretary, Yorkshire College, Leeds.)

7. Libraries must be returned to the university within seven days of the examination, or, if no examination is held, within fourteen days of the conclusion of the course.

8. On the issue of each library an invoice in the form of a receipt is posted to the secretary of the local committee. This invoice, acknowledging the receipt of the books entered upon it, must be signed by the local secretary, and sent at once to the secretary of the University Extension committee, Victoria University, Manchester.

SECRETARY'S LETTER.

The secretary of the extension committee of Victoria University, Manchester, Mr. Philip Hartog, in a letter to the writer, October 12, 1896, said:

One of the distinctive features of the Victoria scheme is that nearly all our University Extension lecturers are also regular lecturers at the three colleges of the university (Owens College, Manchester; University College, Liverpool, and the Yorkshire College, Leeds). Certain of the lecturers on the staffs of the other schemes are also college lecturers, e. g., Mr. Marriott and, I think, Dr. Lawrence; but it is not the rule. I attach great importance to keeping University Extension lecturers in touch with the general work and life of the university, if this be at all possible.

As you will have gathered by what I said on Saturday [at Cambridge], we attach much importance to the 24 lecture courses for pupil-teachers, for we feel that in liberalizing their education we are doing double work. As I dare say you have found out, elementary education is much better in method than higher education, but somewhat overmechanical. It is very necessary that the teachers of the next generation should have ideas beyond those insisted on in a government code.

LECTURE COURSES FOR TEACHERS.

One of the most interesting features of University Extension teaching under the auspices of Victoria University has been in connection with various "pupil teacher courses," which are well described in the following statements by English educational authorities who have had experience in this class of work. For example, the professor of history in Owens College, Mr. T. F. Tout, says:

My experience both in giving separate pupil-teacher courses, as in Salford, and also in giving ordinary Extension courses, as at Stockport, where the pupil teachers form an important element, have convinced me that pupil teachers can derive from University Extension lectures benefits that they are not likely to get from any other sources. Their tendency is to get too much into a groove. They are seldom brought into contact with minds trained differently from their own. They are worked very hard, and much of their instruction is, perhaps inevitably, a kind of routine, which, though excellent in making them efficient teachers of elementary subjects, can have no pretense of giving them a fuller education, breadth of view, or culture. If the University Extension lectures are efficiently conducted, they get from them a wider horizon and a broader interest. They are brought into relations with some one who is more or less of a specialist. They have a chance of seeing that history and literature are not mere matters of isolated names, dates, and facts, but possess human interest and build up connected wholes.

Mr. Thomas Bateson, John Bright's scholar of Victoria University, says regarding these Extension lectures for pupil teachers:

That there are, moreover, special advantages, resulting merely from the new knowledge, which these courses supply, is obvious. Information of the social, political, and economic history of their own country must be of the utmost value to pupil teachers, since it provides them with material, which they in turn may use to build up the minds of their own pupils; and this information, were they confined to their ordinary means of instruction, would, for the most part, entirely escape them. While acquiring it, they are brought in contact with men who, having devoted themselves to the study of one particular subject, are the best qualified to teach it, and who from their eminence in their avocation can not fail to exert a beneficial effect upon these students at a most trying and decisive period of their intellectual life. Moreover, as I can testify from acquaintance with their work, the information is not addressed to the pupil teachers in a manner too difficult for them to comprehend and assimilate.

Mr. James C. Smith, examiner in the University of Edinburgh, said:

It seemed to me that these lectures revealed to many of the pupil teachers for the first time the meaning of literature, the idea that books were things to take pleasure in and have an opinion of one's own about. Besides subsidizing the lectures, the Manchester school board provided a small traveling library, so as to gratify the taste for good reading which the lectures were meant to stimulate and guide. The consequence was (or so it seemed to me) that the students grew not only in knowledge but in taste and style. Accuracy in grammar and spelling they generally had to begin with, but most of them were utterly ignorant of the rudiments of literary history and of the essentials of good writing. Their composition gained steadily in fullness and continuity.

Teachers' courses in geology and history were tried in Baltimore,[1] at the Johns Hopkins University, in the winter of 1898–99. Certificates were awarded after the Oxford model. The Victoria University rules regarding certificates are worth noting.

REGULATIONS FOR CERTIFICATES.

Examinations are held at the conclusion of University Extension courses by examiners, other than the lecturers, appointed by the Victoria University, subject to the following regulations:

1. University certificates are awarded, after examination, in connection with courses of not less than 10 lectures. Examinations are also allowed after courses of more than 5 and less than 10 lectures. No certificates are given upon these, but a list is issued of candidates who have passed or have obtained distinction in the examination.

2. Sessional university certificates are awarded on a continuous course of study (which must not extend over more than two years), including not less than 24 lectures and classes, of which the candidate must have attended not less than 20. These certificates meet the conditions under which the education department allows marks for University Extension certificates presented by pupil teachers who are candidates for the Queen's scholarship examination for entrance into training colleges.[2]

3. When an examination is desired, the local committee shall communicate with the secretary of the University Extension committee at least twenty-one days before the date proposed for the examination, and shall state approximately the number of candidates who propose to enter for the examination.

4. A fee of £2 2s. is charged for any examination. When the number of candidates exceeds 20 an extra fee of 1s. for each additional candidate is required. The local committee are required to make arrangements for a suitable room for the examination and to provide the necessary materials.

5. The examination shall be held as soon as convenient after the close of the course of lectures.

6. The examination shall be conducted by means of printed papers and shall be of three hours' duration.

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[1] See Public Educational Work in Baltimore, by H. B. Adams. Johns Hopkins University Studies, December, 1899.

[2] Marks will also be given to candidates who shall present University Extension certificates * * * awarded by the Victoria University * * * provided that the certificates shall have been awarded (after examination) during the year preceding the Queen's scholarship examination on a course of study including not less than 24 lectures and classes, of which the candidate must have attended not less than 20.—Day School Code (1894), Schedule V, p. 88.

7. Students shall not be entitled to compete for university certificates unless they have regularly attended the classes held at the conclusion of each lecture, and have worked at least two-thirds of the papers set in connection with the classes.

8. The secretary of the local committee will receive from the university secretary the examination papers, and will be responsible for their safe custody, and for their distribution to the candidates. The packets of papers must not be opened until the commencement of the examination, or in any other place than the examination room.

9. A member of the local committee, or other person approved by the university, must be present in the room during the whole time of the examination. He will be responsible for the maintenance of due discipline during the examination, and for the due forwarding of the candidates' papers to the university secretary.

10. At the completion of the examination, the member of the local committee, or other person in charge, shall send the candidates' answers, together with copies of the examination paper, by registered post, addressed to the secretary, University Extension committee, Victoria University, Manchester, unless he shall have received instructions to forward them to some other address.

11. In all awards weight will be given to the weekly papers as well as to the final examination.

12. The names of the candidates who satisfy the examiner will be published in one list, arranged in alphabetical order. An asterisk is placed opposite the names of any candidates who pass the examination with distinction.

13. The examiner shall send to the university secretary a copy of the examination list, signed by himself, together with a report on the results of the examination. The list shall include the names of all candidates who entered for the examination, whether successful or not. The secretary will send a copy of the list of the successful candidates to the secretary of the local committee.

14. When prizes are offered by the local committee, or by others, information as to their character and number should be sent by the local committee to the university secretary at the same time that application is made for the holding of the examination.

[The following are for the information of examiners, and will not be communicated to the local committees:]

15. The examiner shall send the examination paper in manuscript to the secretary of the University Extension committee at least ten days prior to the date of the examination. The secretary will arrange for the printing of the papers, and will forward them to the secretary of the local committee.

16. The standard for a pass shall be about 40 per cent of the total marks; for distinction, about 70 per cent.

17. The examiner's report shall be sent to the university secretary within three weeks from the date of the examination. The examiner shall retain the candidates' answers for one month after the examination, and shall then destroy them.

JOINT LOCAL COLLEGES.

In the Paternoster Review for December, 1890, Mr. Michael E. Sadler, advocated the idea of a joint local college, to be established and supported by a group of four or five neighboring towns. He proposed that they employ an itinerant faculty of, say, five professors, who should "swing around the circle" and lecture every week in each town. One of the faculty should act as principal or president of this joint college, and one of the group of towns might be the head center. Gradually, through public spirit, local endowments, and educational philanthropy, the means could be secured for the permanent maintenance of local or itinerant faculties. Buildings or lecture rooms, library facilities, and scientific equipment might be easily secured. In many towns there already exist institutions and educational appliances that can readily be utilized for the purposes of a local college. This latter idea has begun to bear abundant fruit in England, but the joint local college is still a manifest possibilty in connection with "district associations." (See XII.) Of more importance is the federation of local extension colleges with one of the great universities. Such is the

CAMBRIDGE EXTENSION COLLEGE AT EXETER.

This college was established in October, 1893, by the cooperation of the municipality of Exeter, the Cambridge University Extension Syndicate, and the Local

University Extension Committee, composed of directly appointed representatives of the public bodies of the city, and of practical educationists. The technical department at Exeter is under the direction of the municipality, who devote to it the whole of the money at their disposal from the technical instruction fund allowed by the Government. It is provided with chemical and physical laboratories and an adequate supply of apparatus. It comprises schools of science and art in connection with South Kensington, and supplies, in addition to the usual subjects taught in these schools, courses in mathematics, building construction, French, German, shorthand, bookkeeping, commercial geography, and domestic economy.

The University Extension department, in addition to courses of lectures on history, literature, and science (accompanied by classes for practical work) provides classes in Latin, English, historical geography, French literature, and music. The Exeter center is "affiliated" to Cambridge, so that a certain course of work at the Exeter College is accepted by the university in lieu of "the previous examination," and enables a student to take a degree in six instead of nine terms. Both departments of the college are under the control of the principal, Mr. A. W. Clayden, a distinguished scientist and experienced teacher, who is assisted by an excellent staff of teachers, several of whom are university graduates.

The college aims at supplying the needs of three classes:

1. Those who require more advanced teaching than they can obtain elsewhere in the district, but who are unable to study at any of the great centers of learning.

2. Those who require a special training in science, art, commercial or technological subjects to fit them for their particular calling, or to improve their status therein. This is of course the principal function of the technical department.

3. Those whose education, whether general or technical, requires supplementing. At present the chief part of the work is in the evening, but it is proposed shortly to add day classes. Such a central institution should be of great value at the west of England generally, the fees being low, and there being no similar institution offering a complete curriculum to adult students west of Bristol. As it attracts more students from a distance, a hostel might be opened for the reception of boarders.[1]

The classes are held at the Albert Memorial Museum, a large handsome building, which serves various educational purposes in the old cathedral town of Exeter. The combination of a public historico-scientific museum with a real college for the people is a distinctly modern idea and deserves further extension in England as well as in America. When I was in Exeter in the summer of 1896 I visited with satisfaction the lecture hall and class rooms of this college-museum.

The programme for the lent and summer terms of that year included both day and evening classes, e. g., French, German, Italian, Latin, English history, and geography (taught by Miss Rogers from Newnham College). Classes had also been taught in mathematics and mechanics, music, and drawing. Such practical subjects as sick nursing and ambulance service were noteworthy features. I noted also that pupil-teachers' classes were so organized as to extend over a period of four years. These classes were intended primarily for school-teachers, but prepared also for the elementary civil-service examinations. These educational facilities tended to promote public instruction in Exeter and to connect the local talent of Exeter with the country at large.

I observed with pleasure that public lectures were offered to the citizens of Exeter for evening instruction and entertainment. For example, Mr. Clayden, M. A., Christ's College, Cambridge, the principal of the college, had given a course of twelve illustrated lectures on "Physical geography and geology," with the following specific themes: (1) Volcanic explosions; (2) lava floods; (3) structure of volcanoes, geysers, crater lakes; (4) volcanoes of Great Britain; (5) earthquakes; (6) changes of level, origin of fjords; (7) rocks and rock-forming minerals; (8) the crumpling of

[1] Pollard's Official History and Guide to Exeter, pp. 68–69.

rocks; (9) how the Alps were made; (10) British hills and mountains; (11) metamorphism; (12) the world's interior.

On the occasion of the opening of a new wing at the museum of the Exeter Technical and University Extension College, the Duke of Devonshire, chancellor of the University of Cambridge, visited Exeter and was introduced to the public by the mayor of the city. The mayor reviewed briefly the history of this Exeter institution, and spoke as follows:

In June, 1893, the work of planning the details of the college was begun. It is divided into two sections: (1) Technical department, under the control of the museum and technical instruction committee, which includes school of science, school of art, and other commercial and technical classes; (2) the University Extension department, under the control of the University Extension committee, which includes University Extension lectures and classes, day classes of various kinds, and a pupil teachers' center for teaching them the compulsory subjects. The connections between these subdivisions of the college are: (1) That the classes will all be held under one roof; (2) there is a joint committee for the consideration of matters of common interest; (3) the provost of King's College, Cambridge, has accepted the office of visitor; (4) the various departments are under one head. The income of the college is derived from: (1) The grant for technical education from the city council; (2) payments on results by the science and art department; (3) students' fees, paid either by the students themselves or, in the case of pupil teachers, by their respective school managers, or by the school board for Exeter; (4) private subscriptions, the total income being little more than £2,000 per annum, a sum extremely small when the amount of work done and number of students are considered. About half the salary of the principal is provided by a guarantee of the local lectures syndicate on account of work done for the university. The number of students is gradually increasing. Before the college existed, in 1893, the number was 428; in 1894, 780; in 1895, 924. This total includes 250 students on the University Extension side. These students represent all sections of society, but the majority of them belong to the wage-earning classes. The advantages of such an institution are great; but when it is conducted in the same building with a well-appointed museum and a good library, both for lending and reference, its power of doing good is vastly increased. The college is affiliated to Cambridge University, and is thus kept up to a high standard of education. A great feature is the cordial cooperation between the municipal authorities and the University of Cambridge. By the appointment of Mr. Clayden, our much-appreciated principal, to superintend all the Devon and district University Extension centers, the university has inaugurated a new policy with regard to its external work, and one which, from your own words at the international congress last year, evidently has your approval. Then the union under one building of museum, library, and college is as appropriate as it is unusual, the college work making the museum intelligible, and the museum illustrating the teaching of the college, while education teaches the people how and what use to make of the free library. There is no central educational institution such as this west of Bristol giving anything like a complete curriculum to adult students. It is now my duty and pleasure to ask your grace to be good enough to declare this building open.

The Duke of Devonshire, among other interesting remarks, summed up what England now enjoys in the way of higher education:

We possess, in the first place, our old universities; then, our university colleges; then, our endowed schools—all these extended and developed, as I have attempted to explain to you. These may be called the regular forces of higher education. Then, in addition to the regular forces, we have the militia and the volunteers in the shape of the local science and art classes, technical classes, University Extension lectures, and [local] examinations. It must be admitted that we have made already tolerably large provision for the supply of the higher educational wants of the country. But if we ask ourselves the question, How has all this provision been organized and ordered? I doubt whether we shall obtain such a satisfactory answer. The greater part of what I have described are voluntary educational agencies, and, while being controlled by local committees, are more or less under the control of certain central bodies, such as the science and art department in London or the syndicates of the Universities of Oxford and Cambridge. In such a condition of things as this we might expect to find, and I believe that we do find, a certain amount of waste power—a misdirection of effort—in some cases even a certain amount of friction and misunderstanding. If you would imagine, or attempt to imagine, what would be the con-

dition of a school or a college where there was no head master or principal; where there was not even a council of those who were engaged in the teaching; where every master or professor gave his own series of lectures, and started upon his own course without any consultation as to what his fellow-laborers were doing, you can very easily imagine what state of confusion that college or school would be in. This is what is taking place at the present moment in a great many of our counties and our municipal boroughs.

OXFORD EXTENSION COLLEGE AT READING.[1]

A step forward in University Extension was taken when, in 1892, a local college was established in the town of Reading, halfway between Oxford and London. Reading is an historic and industrial town, with over 60,000 inhabitants. In the Middle Ages it was the seat of a Benedictine abbey, and consequently a home of learning. It is the seat of an ancient grammar school, where Archbishop Laud was educated. Reading in recent times became the first local center of University Extension in the Oxford district. A local association has been formed to sustain Extension lectures. For years there has been at Reading a science school connected with the Government department of science and art at South Kensington. In 1892 the two educational institutions, the Reading Association and the science school, were brought together in the so-called "Reading University Extension College," in conjunction with the schools of science and art.

This union was made possible by the action of the governing body of Christ College, Cardinal Wolsey's foundation at Oxford, in electing to a so-called "studentship" Mr. H. J. Mackinder, one of the Oxford leaders in the University Extension movement. He was assigned to definite duties as "university reader in geography" in special connection with Reading as an Oxford Extension center.

Mr. Mackinder's own statement of his academic relations to this well-established center was made to the Reading Association, May 27, 1892:

Reading is, I believe, the oldest of the Oxford centers of University Extension, and I need hardly tell those who have had so much experience, and who are in such thorough touch with the movement, that for a long time past we have been struggling with two deficiencies to which our critics pointed and of which we were keenly conscious. In the first place, our courses of instruction have sadly lacked sequence; a course on English literature being followed at the same center say by one on chemistry, and a course on political economy by one on the colors of animals. And, in the second place, we have depended too largely on the public lecture as a means of teaching. We have long been casting about for a remedy for this state of affairs, and have gradually evolved the idea of converting our best centers into what, for want of a better name, we have called "University Extension Colleges"—institutions, that is to say, holding a middle position between good University Extension centers, such as those of Reading and Exeter, and fully equipped university colleges, such as those of Manchester and Liverpool. The University Extension center, though it has done excellent work, has not been highly organized enough to perform all the services in the way of higher and adult education required nowadays in a town of 50,000 or 60,000 inhabitants, and yet a university college, with its complete and costly staff of professors, has been hopelessly out of the reach of such a town.

We hope now to work out a plan whereby with unambitious buildings, with a very small staff of resident teachers and assistants, and a comparatively large one of nonresident lecturers, we may give, at one-tenth the cost, a thoroughly efficient institution, quite adequate for the wants of a town such as I have described. In order to test our scheme, in order to prune it and make it practicable, and in order to convince the doubtful, it is necessary to try an experiment, an experiment which, if successful, will become the model and prototype for the entire movement, as well in America as in this country. Reading is obviously admirably situated for such a special effort, easily accessible as it is both from London and Oxford; and Reading, moreover, contains a well-established and healthy university extension center. But we could not fairly ask Reading people, enthusiastic as they have been in the cause, to meet the whole difficulty of such a new departure. At this juncture Christ Church, one of the greatest of the Oxford colleges, has come to our aid in the manner indicated in the letter just read.[2]

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[1] See M. E. Sadler's article in University Extension, Philadelphia, September, 1892.

[2] Letter from the dean of Christ Church, explaining the appointment of Mr. Mackinder, to the president of the Reading University Extension Association.

We admit that we feel proud of having won from that great foundation so clear a mark of the value it puts on the work we have done and of the faith which it feels in the future of our movement. It is now for you to say whether you will accept the offer made and will help us to make a notable success. The duration of the experiment is in the first instance limited to three years, but though I speak here purely in a private capacity, you may depend upon it that if we can show reasonable success at the expiration of that term the work will not then be allowed to drop. To come now to certain details. I intend residing at Oxford, a place within half an hour or so of Reading by a dozen trains a day. Though I reserve my freedom to adapt my course to any circumstances which may arise, I intend as at present advised to be in Reading regularly on thirty afternoons and thirty evenings a year and on such other occasions as organization or emergencies may require. My services will be at your disposal partly for popular lectures, partly for ordinary Extension courses and partly for more advanced teaching of a tutorial rather than a lectorial type. The fees earned by my work will in the main be at our disposal for the employment of other teachers. But please do not misunderstand me. It is not intended in any way to tie you down. You will continue to employ Mr. Churton Collins, Mr. Boas, and other lecturers as heretofore. Merely the courses will be more numerous and better coordinated.

Mr. Mackinder was appointed to his office by Christ Church, Oxford, "with a view to deepening, systematizing, and coordinating university extension teaching at a chosen center." The experiment proved successful, and he has been continued in office until now the educational interests of the whole city, the old grammar school, the board schools, and the Government science school, have been thoroughly harmonized. The town of Reading has all the advantages of a local college and university, without the expense of a costly and independent "plant." The Government science school supplies the technical and scientific wants of that busy industrial town of Reading. The old grammar school provides all the classical training needed by those who desire to go to Oxford or Cambridge. The universities send to Reading all the extension lecturers that the town can pay for.

Nearly three hundred years ago [says Mr. Sadler] a native of Reading, Sir Thomas White, founded a new college in Oxford (St. John's), attaching to his new foundation two scholarships for Reading boys. It is significant of the continuity of English life that a lineal descendant of Sir Thomas, Mr. Theodore White, was one of the secretaries of the Reading university extension committee at the time when the offer of Christ Church enabled Oxford to repay part of its old debt by helping to found a college in Reading.

OTHER LOCAL COLLEGES.

There are now in England, Scotland, Ireland, and Wales many other university colleges and local municipal institutions for the promotion of technical education, in connection with that great department of the English Government called the science and arts department. These local foundations have been securely established by the combined agencies of older institutions, municipal grants, or individual contributions, or all combined. They are generously supported by the aid of the Government and by money allowance, or State aid, conditioned upon educational results, as tested by examinations. The greater the number of successful pupils, the larger the Government grant. Thus a premium on democratic education is set by England herself. The town and county councils throughout England offer large inducements for the promotion of technical education. The commercial and manufacturing life of England, and her successful competition with Germany, France, and America, depend upon the higher training of her sons and daughters in matters of science and artistic taste applied to the industrial arts.[1]

[1]Extensive information on these matters may be found in the published reports on "Art and industry," by Isaac Edwards Clarke. Four parts have been already issued from the Government Printing Office: Part I. Drawing and Public Schools; Part II. Industrial and Manual Training in Public Schools; Part III. Industrial and Technical Training in Voluntary Associations and Endowed Institutions; Part IV. Education in the Industrial and Fine Arts in the United States. A great deal of English experience is embodied in these reports.

XI. AFFILIATION OF TOWNS WITH THE UNIVERSITY.

[Ex uno disce omnes.]

NEWCASTLE-ON-TYNE.

For nearly one hundred years there has flourished at Newcastle an institution called the Literary and Philosophical Society, known to natives as "The Lit. and Phil." During this long period the society has rendered great educational service to the community. The organization of the society dates from 1793 and was due to the literary and scientific zeal of a Unitarian clergyman, the Rev. William Turner. The object was to hold monthly meetings for the reading of papers on "mathematics, natural philosophy, and history, chemistry, political literature, antiquities, civil history, biography, questions of general law and policy, commerce, and the arts." These subjects were comprehensive enough for the higher education of any community.

In November, 1798, the Rev. Mr. Turner read a paper suggesting "the propriety of attempting the introduction of courses of lectures on subjects connected with the happiness of mankind as members of society." The society resolved to invite Dr. Garnett, the professor of natural philosophy and chemistry in Anderson's Institute at Glasgow, to deliver a course of lectures in Newcastle the following summer. A committee of the society put on record this enlightened judgment: "The prospect which the society has a right to entertain of rendering itself useful to the interests of general science by furnishing the youth, particularly of this town and neighborhood, with an opportunity of attending the lectures of a gentleman well qualified to instruct them in the principal subjects of natural philosophy and chemistry must be a source of high gratification to every liberal mind."

Although this first project was not carried out, the idea was kept alive and a course of public lectures on chemistry was given very early in the present century. In 1802 it was proposed to establish at Newcastle "a permanent lectureship on subjects of natural and experimental philosophy." The plan was adopted, and the Rev. William Turner, the founder of the society, was appointed lecturer. He held the position from 1802 to 1833 and gave each year one or two courses of public lectures, varying from 12 to 32 in number. The subjects were, for the most part, taken from the domain of physics and chemistry. Probably Mr. Turner had been inspired in some measure by the scientific researches of his Unitarian brother, Joseph Priestley. A valuable collection of apparatus was early formed for the society, and the success of Mr. Turner's lectures grew from year to year. Members were admitted free. Nonmembers paid 1 guinea, ladies and young people under 20 half a guinea, for the course.

The first literary lectures in Newcastle were given in 1830 by the Rev. William Turner, jr., of Halifax, the son of the founder of "The Lit. and Phil." The young man's course of 10 lectures was upon "The origin and progress of civil society." After the retirement of the first permanent lecturer, Professor Johnston, of the University of Durham, was engaged to give a public course of 22 lectures upon chemistry, always a favorite subject in Newcastle. The course was accompanied by a private class, or practicum, for students, and was remarkably successful from every point of view, even from that of finance.

The public work of the society went on from year to year with increasing interest and success. Series of lectures were given by eminent men upon such subjects as British poetry, the science of music, the antiquities of Egypt, the history and prospects of Poland, Gothic architecture, Shakespeare, Dante, Italian life and history. Down to the year 1859 were maintained courses of considerable length upon great subjects. After that year, until the good old practice was reviewed at Newcastle by University Extension lecturers, shorter and more varied courses were encouraged by the management, together with the custom of employing men of great distinction in

fields of literature and science. Among the lecturers may be noted the names of Professor Bain, J. A. Froude, Professors Seeley, Jevons, Huxley, Lockyer, Carpenter, Roscoe, Bryce, John Morley, E. A. Freeman, and many others of celebrity. Until the year 1865 lecturers from a distance were paid £5 5s. a lecture. After that date the fee was doubled on account of the increased demand for lecturers by rival societies.

The original idea of systematic, continuous instruction upon great themes never really died out in the Literary and Philosophical Society at Newcastle. Mathematical and scientific courses of a practical character and of reasonable length were given in 1863 and 1866 for the benefit of mechanics and students. In 1868, regular classes were formed in mathematics, engineering, chemistry, music, the English language, and literature. Courses varying from 12 to 25 lectures were given on each of these subjects. The class courses at Newcastle were given up when the Durham College of Physical Science was instituted in that town. A supply of continuous, systematic popular instruction has been maintained at Newcastle since 1803. From that date, we are told, until 1842, two long courses of scientific lectures were given every year. Protracted courses continued to be given until 1858. They were renewed in 1863 and 1866 and were continued in regular classes from 1868 to 1871.[1]

The Literary and Philosophical Society has become one of the best supporters of University Extension lectures. Upon the suggestion of Dr. Robert Spence Watson in 1882 the society formally adopted the system and made it its own. Several extension courses are now given every year in the lecture room of "The Lit. and Phil." The resources and membership fees of the society, together with subscriptions for lecture courses, make the maintenance of public instruction for adults an easy matter. The existence of a College of Physical Science at Newcastle, with suitable equipment in the way of apparatus and laboratories, renders possible University Extension courses upon scientific subjects. Experienced lecturers upon literature like Mr. R. G. Moulton regard Newcastle as one of the best University Extension centers in all England. The established relation between University Extension and the old "Lit. and Phil." is admirable. It ought to be rivaled by local institutes and libraries in America. Newcastle was the very first town to become affiliated to the University of Cambridge. Educationally speaking, Newcastle is the workingman's paradise. John Wesley said of this town more than a century ago: "If I did not believe in another world, I would spend all my summers here, as I know no place in Great Britain comparable to it for pleasantness."

AFFILIATION OF NEWCASTLE WITH CAMBRIDGE.

The scheme of affiliating Newcastle with the University of Cambridge was inaugurated in 1887. There is an interesting printed report of a public meeting held in the Exhibition Theater at Newcastle-on-Tyne September 22, 1887. The Marquis of Ripon presided and gave a significant address. He thus defined the main object and purpose of University Extension: "To bring the highest and the best education which the country can offer, so far as may be possible, within the reach of men and women in all classes of the community." He said, "the highest education is not too good for the body of the people." In his opinion "there is no more important work to be done in these days in which we live than to bring to the homes of the working men and working women of this country [England] the very best education of which their faculties and circumstances will enable them to avail themselves. * * * What do we mean when we say that we live in democratic days? One thing, at all events, we mean—we live in days in which it has become possible to

[1] All the above facts have been obtained from "Some account of the lectures hitherto delivered in connection with the Literary and Philosophical Society of Newcastle-on-Tyne" [by Robert Spence Watson]. Newcastle, 1882.

give the best and highest gifts of life—political, social, and educational—widely and freely to all." The Marquis of Ripon regarded University Extension as "in many respects the most hopeful educational movement of our time. It is thorough; it is solid; it is in complete harmony with the leading tendencies of the day; and its character is wholly popular in the best sense of the word."

Speaking of the affiliation scheme and representing the University of Cambridge, the Rev. G. F. Browne, professor of archæology, said at this public meeting in Newcastle:

After great consideration, we decided that we should allow a man to follow in the main the bent of his own tastes; that is to say, that out of eight courses of lectures no less than six should be in the special line which he chooses to mark out for himself. But because we have a dread of a one-sided man, and the country should have a dread of a merely one-sided man, we require that, besides his special courses—say science—he should attend two courses of lectures in something else—say something of the nature of art; it may be literature, history, political economy—for we give him a wide range. That is our scheme. We require, besides, that a man (I include women) should show proof of having had the rudiments of what we call a liberal education. The requirements are not large. We require them to know something of mathematics and something of languages; and here I will ask those who listen to me to pay special attention to what I have to say with regard to languages, for by an unfortunate mistake the full details of our conditions for affiliation, laid down for other purposes years ago, were not put before you in the first report. We require there should be some knowledge of geometry—three books of Euclid, algebra up to quadratic equations, and, of course, of arithmetic; and we require (not as your newspapers have naturally told you to-day, copying the first report but not the circular which has been issued in this locality and in others) we require not one language only, but Latin and one other language—French it may be, Greek if you like, German if you will, but Latin and some one other language. These are our requirements. We do not ask that you shall pass an examination in these subjects all at one time. You can take your Latin at one time, your Euclid at another, and so on, and you may take them before, or during, or after your courses of lectures. And what we grant in return is that a man (again I include everybody) coming up to Cambridge, having fulfilled these requirements, may say if he likes that he is beginning his second year instead of his first year of residence, and he is free from what is the bugbear of a great many undergraduates; that is, the "previous examination," or, as I believe it is called, the "little go." * * *

Now, I may be asked what are the objects in this affiliation matter. Our object is a very simple one; it needs no argument and no apology. It is simply to do, as far as we can, our duty. That is all. * * * The universities are the trustees of the nation for the maintenance and improvement of the intellectual condition of mankind; and it is because we realize that trusteeship very deeply indeed that we say we are simply trying to do our duty in responding to these calls which come to us, not from Newcastle only.

John Morley was also present at this public meeting and spoke as an Oxford graduate and friend of literature, as well as a politician. He said he believed this new educational movement would lead to greater results than any of the great issues in the immediate arena of politics.

The University, I understand, insists upon the combination of science and literature as a condition of their certificates. For my part, I have never felt that there was any of that conflict, of which I have read a great deal, between literature and science. Though their methods are different and their objects different, so far from their being in any sense antagonistic or opponent, they are mutually complementary to one another. Personally, my own taste has lain rather in the direction of literature, and, as I said, speaking upon the subject of University Extension in London in the spring, I think that literature at the present moment is the more likely of the two to go to the wall, because it is the tendency of the age, and it is one with which it would be useless to find fault, for men seek that knowledge which is helpful to them in the practical work of their daily lives. But I do think that it will be a great mistake if those who have the direction and guidance of this movement do not put literature into at least as prominent a place as science. The masterpieces of literature furnish ideas which guide conduct, which raise motive, and which enrich character, and it is conduct, it is motive, it is character—it is upon these the future of this nation will depend.

The University of Cambridge is doing an immense good, not only in the cause of education and of the improvement of the intellect, but it is doing a great good to the cause of social union and amalgamation. * * * I have always been one of those who think that universities are, in their first function, places and centers of research. They are designed to add to and augment the fund of knowledge. They have also the other functions of diffusing and distributing knowledge, and those the University of Cambridge is performing admirably in the movement we now commemorate. * * * I hope that this great city will take an active part in it. I hope that employers and all those who have influence in any capacity with their workmen and artificers will do their best to show these workmen that they value the knowledge and the means of knowledge which are placed within the reach of the inhabitants of this town, and that all classes will unite in availing themselves, and in inducing others to avail themselves of the blessings of knowledge and learning. * * * I am quite sure that in doing that you are widening the basis upon which the fabric of national greatness, national union, and national strength reposes.[1]

Newcastle-on-Tyne has developed the affiliation scheme more fully than has any other town in England. Fortunately for Newcastle, she has two well-organized local institutions of a high educational character, the Literary and Philosophical Society, and the Durham College of Science, which together guarantee the local lecture committee against financial loss. With such strong institutional support, the friends of University Extension in Newcastle have been able to develop a double affiliation series of lecture courses in the liberal arts and natural science, each series running through the same period of three years. Thus students of varying tastes can find continuous instruction in the field which they prefer. Educational sequence is secured without allowing either science or literature to monopolize public attention.

Upon the success of affiliation with Cambridge, Mr. Howson, of Newcastle, is reported in the University Extension Journal for August 1, 1890, as saying at the third Cambridge conference:

The committee had expected to lose about a third of their average audience when affiliation was taken up, owing to the more systematic character of the work; but he was glad to say that instead of reducing their audience by 30 per cent, the numbers had actually increased by 12 per cent, and they had now in Newcastle more than twice as many real students as they had three years ago [1887]. * * * I doubt whether the university is fully aware (indeed, it has no means of gauging it) of the immense influence for good of these lectures amongst the people who are never heard of in examination results. * * * For the encouragement of other centers, I would say that the affiliation scheme has been successful beyond our expectations, and that the impetus given to University Extension by this scheme has been very great, for we have more than doubled the number of our supporters.

AFFILIATION OF OTHER TOWNS.

Seven or eight different towns are now affiliated to the University of Cambridge, and they are all maintaining a three years' educational sequence of lectures in arts or science. This means continuous, systematic instruction extending over a period of six terms, each term comprising 12 University Extension lectures, 12 weekly exercises, and final examinations on each term's course. Some towns, like Newcastle, have a double sequence of lectures. The names of seven early affiliated towns are Derby, Exeter, Hull, Newcastle, Plymouth, Scarborough, and Sunderland. At least one has developed an extension college. The number of affiliated towns will undoubtedly increase. Eighteen of the Cambridge courses given in the Lent or spring term of 1890, were in direct continuation of those given in the Michaelmas or fall term of 1889. This good work has been steadily advancing during the past decade.

The way from the people to the university is now entirely open. Any studious

[1] The above extracts are taken from a pamphlet entitled "Cambridge and Durham University Extension. Affiliation Scheme for Newcastle-on-Tyne." Report of a public meeting held in the Exhibition Theater at Newcastle-on-Tyne, September 22, 1887. Newcastle-on-Tyne: Andrew Reid, Printing Court Building, Akenside Hill, 1887.

youth who will pursue a three years' university extension course in the way above described by Professor Browne, formerly of Cambridge (now a bishop), can not only enter that university as a regular student, but have credit for one year's advanced standing and attain the bachelor's degree in two years' time, if he passes the required examinations. It is, perhaps, characteristic of the earnest and ingenuous spirit of English university extension students that the very first inquirer from that class who wrote to Professor Browne asked if an extensioner was obliged to forfeit the first year of his college course. He wanted all three years of a Cambridge college course.

Professor Browne said at a special conference of the Universities' Joint Board in London, February 12, 1890:

He did not think that many of the affiliated students would actually come to Cambridge, and with some at least of those who did, the remission of a year would not be esteemed a privilege, for if they came to Cambridge for two years they would want to stay for three. There was, however, a distinct incentive to a much larger number of students to undertake the three years' course of work, inasmuch as those who did so with success could claim the privilege of calling themselves "affiliated students of the University of Cambridge." This privilege, said Professor Browne, may seem of small account, but I assure you that even in these modern times there is a great power in the sentiment of being connected with one of the old universities; and there are now hundreds of persons in the North and in the South who are working hard, and with self-denial, to obtain it. (University Extension Journal, March 1, 1890, p. 21.)

The University of Cambridge deserves great credit for the development of this plan of academic affiliation with the various towns of England. Oxford did not at first attempt much in this direction. Of 69 extension courses given under Oxford auspices in the Lent term of 1890, only three are said to have been in any kind of educational sequence with those given in the Michaelmas term. (University Extension Journal, September 1, 1890, p. 94.)

Oxford's highest work, on the other hand, has been the founding and encouragement of local colleges, as already described in X. In her extension lectures she has endeavored to quicken public interest in pioneer ways and to prepare the way for better and higher work. She has recognized facts in the English educational situation and has striven to overcome local obstacles by practicable means.

The following matter is appended here as of suggestive and historical interest:

AFFILIATION OF LOCAL CENTERS.

By a statute approved by the Queen in Council June 26, 1886, the University of Cambridge acquired the power of affiliating to the university a local lectures center. The privileges conferred upon affiliated students at such a center are that they can describe themselves as "Students affiliated to the University of Cambridge," and, if they enter as students at the university, are excused the previous examination and can obtain the degree of Bachelor of Arts in 6 terms instead of 9, but only if they pass in a tripos examination. In the case of women, if they enter at Girton or Newnham College they are excused the previous examination and can be admitted to tripos examinations three terms earlier than those who are not affiliated students.

The following are the early regulations:

1. That the local examinations and lectures syndicate shall present to the senate for approval by grace a report on each application for the affiliation of a center.

2. Students at an affiliated center who desire to be admitted to the privileges of affiliation shall be required—

(*a*) To have passed at some time an examination in (1) arithmetic; (2) Euclid, Books i, ii, iii; (3) algebra to quadratic equations inclusive; and (4) Latin and one of the following languages: Greek, French, German. A certificate of having satisfied the examiners in these subjects in the junior, senior, or higher local examinations of the University of Cambridge or the corresponding examination of the University of Oxford or the matriculation examination of the University of London,

shall suffice; but in the case of the junior local examinations no certificate shall be recognized which does not certify distinction in mathematics and in one of the four languages mentioned. The syndicate may from time to time consider and report upon the propriety of recognizing the certificates of other examining bodies.

(*b*) To have attended a series of courses of lectures and classes for six terms, extending over such period of years as may be approved by the syndicate in one of the two following groups.

A. Natural, physical, and mathematical science.

B. History, political economy, mental science, literature, art.

(*c*) To have attended in each of 2 terms a course of lectures in the other of the groups A, B.

(*d*) To have satisfied the examiners in the examination held after each course of lectures.

3. The selection and sequence of the subjects of the courses of lectures shall in each case have been approved by the syndicate before delivery of the lectures.

4. The lecturers and examiners shall in all cases have been appointed by grace of the senate on the nomination of the local examinations and lectures syndicate.

5. Those who have done all that is required to enable them to claim the full privilege of affiliation shall be recognized as "Students affiliated to the University of Cambridge."

6. Those who have before the affiliation of the center by the senate obtained certificates of having satisfied the examiners in the examination held after a course of lectures may use such certificates toward satisfying the requirement 2 (*c*), but not toward satisfying the requirement 2 (*b*).

DR. WESTCOTT ON "AFFILIATION."

Dr. Westcott, formerly regius professor of divinity, said in a Cambridge conference on affiliation:

If I felt that the subject which I have been asked to introduce to you depended upon anything I can say for exciting interest, my anxiety would be indeed great, for my anxiety would be only measured by my own interest in the subject. But I am quite sure that the subject itself, as you find it brought before you in the papers which are distributed in the room, will at once command your sympathy. You find there a clear description of what affiliation is from our point of view; and I shall be obliged to speak of the subject simply from the university aspect. I shall speak as if there were no financial difficulty. I shall speak of it simply in its educational aspect. Viewed in this way, affiliation means that the university is prepared to recognize any student who has passed through a course of study in accordance with its spirit, without any distinction of class or place, as having a vital connection with itself. It means that an artisan or one engaged in business may, by attending certain classes and following out certain conditions which are wisely and generously laid down by the university, come among us at once not as a stranger, but as a son, taking his place as a student in his second year. Now, when affiliation is interpreted in this sense you will see that it marks an epoch in the history of higher education, that it affirms a principle as to the character of higher education, and that it lays, I will venture to say, an adequate foundation for a national system of higher education.

Allow me to say a few words on each of these points. I say, then, that affiliation represents a distinct epoch in the history of higher education. Affiliation as I have described it would not have been possible ten years ago. At that time the university was not in possession of sufficient evidence as to the demand for education or as to the supply of teachers to justify such a step. A great university is possessed of a rich heritage and of precious traditions which it is forced to guard jealously. It must not change its methods hastily. But the system of University Extension was begun wisely and vigorously and it has progressed steadily. It has won its way from small beginnings. The University Extension which began here about fourteen years ago, has now found acceptance in every other English university. It is already discussed, I believe, if not begun, in the Scotch universities. It has been adopted in the University of Sydney. The 20,000 hearers of the University Extension lectures last year show the extent of interest which has been excited. The 2,000 candidates for examination show, I think, the loyalty of the students' spirit. Great and solid educational results have been achieved by the system; and they have called out singular sympathy in the great towns. We are inclined to believe that the noble local colleges at Nottingham, Sheffield, Liverpool, owe something to the stimulus which university lectures gave to higher education. When these results, therefore, were presented to

the university, it was felt that it must welcome them; that it must show by some definite act the value which it attached to them. And so when our new statutes were framed the power was granted to the university of giving the important privilege of a year's residence to those who had passed through a specified course in colleges affiliated to the university. At once three colleges, I think, Nottingham, Lampeter, and Sheffield, availed themselves of the privilege. It was, however, soon felt that even so the university has not extended its educational influence far enough. It was felt that there were many students who could not belong to these privileged colleges; and so two years ago further deliberations were entered into. The existence of classes of students outside large towns, zealous and earnest students, was sufficiently proved, and a revised statute was obtained by which the university was empowered to grant the privilege of affiliation to students, solitary students, who had carried out a system of education prescribed by the university. And thus, absolutely for the first time in the history of education, an old university, by offering this privilege, recognizes as its own work in a practical sense that higher education which has been conducted anywhere under its responsible superintendence and in accordance with its own spirit. It recognizes a student of any class and of any place as having a true and living connection with itself if only he has satisfied the reasonable conditions which express what we hold to be the true ideas of a liberal education.

And that brings me to my second point. I say that this affiliation affirms a distinct principle as to higher education. It gives us a view of what higher education should be. We can easily conceive three different aspects in which university lectures may be regarded. They may be regarded, we know, simply as a recreation. They may be regarded, again, as a means of technical equipment. Or they may be regarded as a power not only of communicating knowledge, but of stimulating that passion for knowledge which is really the spirit of a fuller life. The university, I need hardly say, without disparaging the two other objects of lectures, has always regarded this last and higher object of lectures as the only one which it could set before itself. From the very first the lectures of the University Extension scheme have aimed at conveying serious education. They have aimed at thoroughness, at breadth, at continuity, and at personal intercourse between teachers and taught. From time to time, no doubt, short courses of lectures and single lectures have been given in order to stimulate a desire for something more and something better. But the normal courses of lectures have always been of substantial length. They have been supplemented by classes. They have been tested by papers. The teacher has come into living contact with the class that has gathered round him. And I venture to say that no object short of this could rightly have engaged the anxious attention of the university. It is not the business of the university, pressed by its own urgent duties, either to amuse or to train craftsmen. Its business is to inspire men; to give them that passion for higher knowledge which can ennoble every form of life. It is not the business of the university to teach mere bread-winning knowledge, but to communicate that which is, in words familiar to many, not the source of their livelihood but the real inspiration of life. And now you will see why the university welcomes each request for affiliation as tending to organize and to consolidate the policy which it has always kept steadily before it. If you will examine the scheme of education which is proposed for students who seek affiliation, you will see that it satisfies those conditions which I have ventured to indicate as marking the university idea of education. There is first of all an adequate foundation of preliminary knowledge. This school knowledge the university tests but does not give. Then provision is made for breadth, for continuity, for personal influence in the higher teaching. Provision is made for breadth. The student must not only take up one principal subject; he must also take up a secondary subject in some distinct group. His attention must not be given solely to science or solely to literature. If he chooses literature as his main subject, he must supplement the ideas which he gains from that study by the characteristic ideas of science. If he takes science as his main subject, he must add to scientific ideas the influence of literature. Provision is made also for continuity. The student must continue the study of his principal subject through two terms of three years; and this study, as you will remember, includes lectures, classes, papers. And all through from the beginning to the end there is the living intercourse of teacher and pupil, satisfying the principle on which the university has always laid the utmost stress, that education consists not only in the mere acquisition of knowledge, but even more in the manner by which that knowledge is acquired through the intercourse of man with man. So it is, then, that affiliation affirms, I say, a principle as to higher education.

You will say, and say naturally, that the demand which it makes is a great one. It

is a great one, and when we find the desire to satisfy it existing I think you will agree with me that those who do satisfy it are worthy of being welcomed among us as true brothers, not strangers, when they come here. Affiliation in this way, I repeat, marks an epoch and affirms a principle. I venture to add also that it offers an adequate foundation for a national system of higher education. And I am thankful especially that my own university, acting in close sympathy with the other universities, has shown its readiness to undertake, if need be, responsibility in this great work. It is a pressing work, and I can not but think that it will be disastrous if the universities have not a large share in carrying it out. They have received a most precious inheritance. They have a striking hold upon the feeling of the country. Those of us who ever have to speak in the name of a university are touched beyond expression by the confidence which they find reposed in its counsels. And such action on the part of the universities is thoroughly in accordance with the traditions of their founders. We have been reminded that the statutes of Clare College provide that those who share in the benefits of the college are not to be mere solitary students, but men who shall carry elsewhere the light which they had received. The work, then, is such as benefits the universities by their actual constitution and by their old traditions. An organization for fulfilling it exists, tried by wide experience. Teachers are ready to devote themselves to it who have proved their efficiency. Our university offers responsible superintendence; and surely we feel that the work is one which is deeply needed among us now. We feel that we do, indeed, want, both in thought and in work, that which an education, conducted on such principles as I have endeavored to indicate, would supply; we do, indeed, want that patience which comes from continuous labor; we do, indeed, want that sympathy which comes from a wide range of study; and I can not help thinking that this scheme of affiliation contains an answer to some of the difficulties which we heard discussed this morning.

It will meet the wants of the small places. They will be grouped, as we trust, round some responsible teacher, who will be the permanent adviser of education in an educational province, and who will gather round him younger lecturers who need his guidance while learning to continue his work in after time. He will form, as it were, what has been called "a floating college." And I venture even to look further than that. I seem to see hostels rising up in which young men, artisans, and tradesmen, full of enthusiasm, full of the passion for work, will be gathered to support one another in a simple, laborious life, living together in new colleges which correspond to the circumstances of our new life. Thus, I hope that this idea of affiliation will really be not an unimportant factor in solving some of our most serious moral problems. Let a worthy idea of higher education, a power of self-reliant, sympathetic, reverent work and thought, once be realized, and we shall not be far from seeing that the end of life is not material enjoyment, which never can be shared in equal degree by all, but the joy of what I will venture to call spiritual effort, the joy of spiritual service, a joy which grows intenser as it grows wider, supported by a force which increases even as it is used.

Let me, then, endeavor to sum up in the fewest words what I have tried to say. The idea of affiliation, as we understand it here, marks an epoch in the history of education, for by it the university concedes a great and a new privilege. It represents a distinct theory of higher education as being thorough, broad, and human. It marks out the lines on which I believe sooner or later a national system of higher education may be molded. I ask you, then—I ask you with some confidence—to realize the importance of what the university has done. I ask you to affirm the principle which it lays down. I ask you, as occasion may be given, to use the opportunity for establishing a wide system of higher education. I know how imperfectly I have expressed what at least I feel most deeply. When I came back to Cambridge sixteen years ago (if I may touch on one personal recollection), I came back with some dim, vague hope that the Cambridge in which I should work would become in due time a true spiritual power for England. I had not been there long when I found that our friend Professor Stuart had already in a great measure solved the problem. We have seen the solution progressing to completeness through a double apprenticeship of fourteen years. Is it too much to hope that to-day we see at last the beginning of the end?

It does seem to me to be a memorable day when we are gathered in this center of our university life, under the presidency of our natural head, while we have been just assured that our venerable chancellor himself would have been with us if his health had allowed him, not so much to discuss as to welcome a scheme which makes university education practically coextensive with the country. And though I believe that few students, comparatively, will use the privileges of affiliation so as

to come among us as our own students, yet I do believe that there will be not a few who will win the title of affiliated students, not a few who will bear it with honor to themselves and with no less honor to us. So it will be that miners in Northumbrian coal fields, artisans in Midland factories, toilers in the country and toilers in the cities, will repeat with glad pride what is not our motto only but their motto also, "Hinc lucem et pocula sacra," when they find their lives enlightened and purified, I will venture to say ennobled and hallowed, by the conception of higher education which it has been the privilege of this university to bring home to them. They will feel that it is indeed from that source the light comes; and when the light comes such a vision of eternal truth as men can gain will not tarry long.

XII. STUDENT ASSOCIATIONS.

University Extension students in England in their student associations have developed, in a natural and independent way, an institution which reminds an American of the Chautauqua literary and scientific circles, or local class conferences, and also of the so-called "Round table," or public class conferences, at the Chautauqua Summer School. The English student associations are simply voluntary local unions of students who are attempting to study according to some definite plan, usually in connection with University Extension lectures. The origin and character of the Plymouth Students' Association is thus described in the University Extension Journal for July, 1890:

Our association started at the close of a series of University Extension lectures, when the local committee was not in a position to organize another series. Largely through the enthusiasm and agency of the Students' Association a Cambridge University Extension Society was revived, and the affiliation scheme, a boon to all earnest workers, was started.

During the term before the adoption of the scheme the Students' Association worked independently of lectures. Mr. Moulton, to whose warm sympathy students' associations owe an incalculable debt, kindly sent some syllabuses of lectures and offered to correct one paper each week. This was done, the students writing the papers; and one, being selected by ballot, was forwarded to Mr. Moulton, with a summary of important points in other papers. The comments on this were read at the next meeting. Thus, good work was done without the stimulus of lectures.

Between the lecture sessions the committee organized lectures by leading local men, which served the double object of aiding students and keeping up in the town the interest which is so apt to flag after a course of lectures is concluded.

The benefit of students' associations is not merely intellectual. There is a kindly feeling promoted among members, and the working together for a common object broadens their views and leads to greater toleration and sympathy.

Instead of "classes" and "masses" mixing, we have no "classes," in the somewhat supercilious social sense of the word, for in intellectual work these distinctions vanish, and we do not consider the work which each contributes to the social fabric, but the value of the ideas which each presents, and we are all learners and all teachers, more or less. * * *

Our comradeship is perhaps aided by our social gatherings. Plymouth is, in summer, devoted to picnics, and we always have our annual excursion by road, or river, or sea, and in the winter our lecture session is inaugurated by a conversazione, which introduces the lecturer to the students. We all acknowledge with gratitude the great and practical interest which every lecturer has shown in our work, and it is a pleasure to welcome them in a social meeting.

We are contemplating the formation of a library, and hope to be provided before the winter, for though the Cambridge Traveling Library is invaluable we hope to supplement it by books of our own.

I ought to add that we have two secretaries, a lady and a gentleman, which I think is a wise arrangement, as it divides the work and perhaps makes it better.[1]

It is particularly urged by the friends of University Extension in England that local groups of extension students should unite together in students' associations. These societies meet frequently for systematic reading and for the discussion of topics in connection with a course of local lectures. Such organizations have been found

[1] For further illustrations of "students' associations," see University Extension Journal, October, 1890, and later issues, on this topic.

of great service by extension lecturers, who always encourage the formation of such voluntary classes among their hearers. It is urged that such associations should be formed after conference with the local committee. An organized body always affords a nucleus of real students and is, therefore, the best ally of a local committee in providing for future extension courses. Such students are the persons whom the local committee usually consults in choosing subjects and lecturers.

An Oxford circular upon this subject says:

A students' association can generally be established most easily before the conclusion of a course, when the help of a lecturer can be obtained in its arrangement and inauguration. Local committees, by kindly taking the lead in the formation of students' associations, can often be of great service in promoting systematic study, the encouragement of which is one of the chief aims of University Extension teaching. A committee should be formed: A president, and vice-president, treasurer and secretary elected; the rules of the society drawn up and a plan of work arranged for the ensuing months. If practicable, suggestions can be obtained from the lecturer, who is to deliver the next course, as to the best course of preparatory reading. An opening meeting is advisable, and, at this meeting it may be found best to arrange for an inaugural address by some resident in the neighborhood interested in University Extension or other educational work. There should be a small subscription to cover necessary expenses. The number of members varies; it is rarely less than 20 or more than 100. A small ticket of membership, with a programme of the meetings printed on it, is convenient. A suitable place of meeting should be fixed; members asked in advance to contribute papers to be followed by discussion; and, during the session, one or two meetings set apart for social gatherings, or, if in the summer, for excursions. The meetings are conveniently fixed at fortnightly intervals; a prize is sometimes offered to encourage essay writing from members. Access to local collections of scientific or artistic interest can often be obtained for the students' associations. It is particularly urged that students' associations should seek to obtain the assistance of university graduates, fellows of learned societies, etc., resident in their neighborhood.

A good plan is to draw up a series of topics to guide the reading of the members, and to hold these topics among the members as subjects for essays to be read and discussed at successive meetings. A good chairman should be found for each meeting to open the discussion. The members sometimes find it advantageous to instruct one of their number to embody the result of the discussion in a brief paper, which a lecturer can be invited to look over and report upon. In discussing a scientific subject, a member will often undertake to write out a brief but complete chain of proof of a selected thesis, appending in the margin the exact evidence (with reference) for each link. This chain of proof is subsequently discussed by the meeting, and in a corrected, condensed, or expanded form, sent to the lecturer for criticism. The lecturer's report is read at the next meeting.

Students' associations may be advantageously combined with a book club, by means of which the students can obtain cheaply all books they have decided to read. When possible, the delegates will lend a small collection of books at a small charge. Existing essay societies, mutual improvement societies, and reading societies, can affiliate themselves to the University Extension movement by forming themselves into students' associations.

MODEL RULES (OXFORD).

1. This association shall be called the "——— University Students' Association."
2. The object of the association shall be to encourage and maintain an interest in the University Extension lectures and home reading circles.
3. The management of the association shall be vested in a committee, consisting of a president, vice-president, treasurer, secretary, and 12 other members of the association. Five to form a quorum.
4. The annual general meeting of the association shall be held in the month of March, when the officers and other members of the committee shall be elected.
5. A report of the state of the association shall be presented by the committee to each annual general meeting.
6. The secretary shall conduct the correspondence, keep the minutes of the proceedings of the meetings of the committee, and of the association, and these minutes shall be read and confirmed at the next meeting.
7. The treasurer shall have charge of the funds of the association, and his account shall be audited by the committee, who shall have control of the expenditure.
8. Any past or present member of the University Extension classes, or anyone over the age of 15 shall be eligible for election.

9. Candidates for election shall be proposed and seconded by members of the association; the election of members shall be vested in the hands of the committee and shall take place at such intervals as the committee may find convenient.

10. Members shall pay an annual subscription of ——s., in advance, due the first day of April in each year.

11. Honorary members of the association may be elected by the committee, from the past and present lecturers and other university graduates resident in the town, or from persons subscribing not less than 5s. per annum to the funds of the association; such members shall have all the privileges of membership.

12. At ordinary meetings of the association any member will be allowed to introduce a friend, who shall not have power to vote.

13. The ordinary meetings of the association shall be held at such times and places as the committee may appoint.

14. No rule shall be altered or rescinded, nor shall any additional rules be made, without the consent of two-thirds of the members present at the annual general meeting, or at a special general meeting. Due notice of any proposed alteration shall be given to the members seven days before the meeting.

15. Members not paying their subscription on their election, or within the first three months of any current year, shall, ipso facto, cease to be members of the association.

DISTRICT ASSOCIATIONS.

There early developed a tendency in England to organize local centers of University Extension into what are called district associations, which are composed of contiguous or neighboring towns and parishes. The purposes of such organization are clearly indicated in the by-laws of the Yorkshire Association: (1) The organization and extension of university teaching; (2) the suggestion of subjects and lectures and the grouping of centers for lectures; (3) the organization of lectures and systematic work in vacation; (4) the formation of students' associations and the lending of books; (5) the promotion of higher education generally. It will be readily seen that such district associations will tend toward strengthening the foundations of the University Extension system, for in the union of interests there is often greater strength. The good example of one town is communicated to another and the general demand for extension courses is increased. Circuits for the lecturers can be instituted and the expense of lecture courses can thereby be greatly diminished. A kind of itinerant university system may be instituted and supported within a single county. This system would present certain analogies to the earlier ecclesiastical system of associated parish churches, under the general supervision of an itinerant bishop. Indeed the whole University Extension system affords a striking parallel to Episcopal administration methods in primitive and modern churches.

In the University Extension Journal for July, 1890, there were the following suggestions upon the subject of State aid to district associations:

State aid, or some form of endowment, will assuredly come in the near future to give permanence to the national system of higher education, into which the University Extension movement is rapidly growing. Meanwhile, however, the important thing is to perfect the machinery of organization and press on the educational efficiency of the work by promoting still greater sequence and continuity of study. One of the chief practical difficulties in dealing with the question of State aid is that of its wise and profitable distribution, and to frame some definite scheme for this purpose is the first step toward its solution. If, as has been suggested, a public grant were to be intrusted to district associations, which are now established in different parts of the country, it is clearly of the first importance so to develop and strengthen their organization that they may come to be recognized as the natural channels through which State aid might advantageously be given to the University Extension system. Each association might become, as it were, a floating local college, having, like the existing institutions, a permanent organization and a representative council, but unlike them, drawing from the universities its staff of lecturers from session to session, and including in its field of work not merely a single town, but the numerous centers in a wide district.

All this helps to explain the remarkable growth of local and university extension colleges in England.

XIII. UNIVERSITY EXTENSION IN SCOTLAND.

It should never be forgotten that the educational germ of University Extension in England was the Scottish lecture system, with its syllabus of dictated heads. This system was a survival of the old scholastic method of university teaching, and was simply adapted to a popular purpose by Prof. James Stuart, of Cambridge, who admits that he got the idea from one of his Scotch instructors, Professor Ferrier, of St. Andrews. Prof. Patrick Geddes, in the abstract of his evidence given to the Scotch Universities Commission, says: "The Scottish lecture system has directly given rise to the University Extension movement, and ultimately to the English university colleges, and has profoundly modified Oxford and Cambridge themselves."

Part I.—West Scotland.

The beginnings of the university movement in Scotland have usually been associated with the University of St. Andrews and the town of Dundee (1874); but Prof. R. M. Wenley, in his authoritative study of "The University Extension movement in Scotland," 1895, calls attention to the fact that as early as 1845 Prof. Hutton Balfour, then of Glasgow University, gave a course of lectures to women, and that similar extramural courses by Glasgow University professors, notably by Edward Caird, were continued from 1868 down to 1877, when the Glasgow Association for the Higher Education of Women was instituted. At that time women were not admitted to academic classes.

It is significant of the University Extension movement in Scotland, as well as in England, that one of the permanent historic results was the founding of a college for women. Queen Margaret College, founded in 1883, and named in honor of the best woman in Scotch history, was the direct institutional outgrowth of the work of the above association, which for six years had furnished academic lectures to women in Glasgow. Those individual professors, Young, Veitch, and Caird, and the ladies who supported them, were truly "pioneers of what was tantamount to a University Extension movement, of that form of it too which has achieved by far the most important practical results in Scotland."

It is noteworthy that the first attempts to extend university instruction from Glasgow to other towns in the west of Scotland were made under the auspices of the Queen Margaret Guild, a social union of students of Queen Margaret College and of former members of the Glasgow Association for the Higher Education of Women. The guild undertook to provide lectures for factory girls and to other female workers in the vicinity of Glasgow. In 1886 local educational centers were formed at Ayr and Helensburgh, where afternoon lecture courses (ten each) on English literature and the French Revolution were given to women. The following year three other centers were established: Kilmarnock, Paisley, and Hamilton, with lectures on history, political economy, English literature, and physiology.

The next step was the formal constitution of an extension board by the University of Glasgow. Queen Margaret's Guild promptly transferred its extension scheme to this newly-constituted extension board and paid over the surplus funds from local lectures towards the further endowment of Queen Margaret College, which soon became an organic part of Glasgow University.

Glasgow University Extension.

Lectures on literature, philosophy, and scientific subjects had been given in the East End of Glasgow by various graduates of that university as early as 1884. In April, 1886, the question was discussed in the general council of the University of Glasgow whether the university should not place itself at the head of this movement. The general council favored the adoption of University Extension and represented the matter to the university court. With the approval of this body the Senate

organized in 1887 a scheme resembling that of the English universities for the extension of university teaching. For the sake of placing the work on a broad foundation, and securing further cooperation, the Senate appointed "a Glasgow University Extension Board" of over 70 ladies and gentlemen in the city, with the honorable Sir Thomas King, Lord Provost of Glasgow, as chairman, and Robert Gourlay, manager of the Bank of Scotland, as honorary treasurer. The first meeting of this board was held February 1, 1888, when a constitution framed by the university court and the Senate was adopted and an executive committee was appointed to prepare a detailed plan for extension work. Such a plan was duly drawn up and was printed at Glasgow by the university publishers in 1888 under the title of "Extension of university teaching by local lectures and classes—An account of the scheme and the mode of working it."

The purpose of the scheme was to extend the advantages of university education to those whose circumstances do not permit them to attend the university. The proposed teaching was designed to meet the wants of (1) ladies, (2) clerks and other persons engaged in business, and (3) artisans of all classes. Day lectures in the larger towns were organized for ladies and evening classes for clerks, shopmen, and artisans. The method of instruction was to be by courses of lectures, one lecture each week for a period of three months. Before each lecture there was to be a tutorial class conducted by the lecturer. For this class weekly exercises were set and criticised. At the end of each course a written examination on the subject was conducted by a special examiner appointed by the extension board. To this examination only those who had attended the tutorial class were admitted. Candidates passing a satisfactory examination received a joint certificate from the lecturer and the examiner. But regard was shown for the work done in the weekly exercises as well as in the final examination. The cost of a course of 12 lectures, extending through a period of three months, was fixed at £32. The lecturer's expenses and the cost of hall, lighting, heating, advertising, and local management were to be defrayed by the local committee. The total expenses were estimated at £50.

Attention was called in the prospectus to the importance of forming a good local committee, with an efficient secretary. It was recommended that the work of local organization be undertaken under the auspices of the provost or chief local authority in a given town. The extension board promised to send upon invitation a proper representative of University Extension to explain the details of the work. It was urged that the local committees should be fairly representative of the locality, so as to secure freedom from political or sectarian bias. Local committees were advised to obtain subscriptions, or promises to take tickets, rather than depend on the plan of covering deficiencies by a guarantee fund. The importance of personal effort and personal canvassing was urged upon local committees by the extension board. It was suggested that "in a locality in which several small towns or villages are contiguous a combined local association may be formed, and it may be arranged that the lectures be delivered alternately in the different villages." The extension board expressed a desire to avoid all conflict with local arrangements for teaching, and made it a condition "that no boys or girls shall be allowed to attend the class for tutorial instruction except with the consent of their teachers."

Among the academic leaders of University Extension in the west of Scotland have been Prof. Edward Caird (afterwards called to Balliol College, Oxford), Professor M'Kendrick, Mr. Archibald Craig, and Professor Wenley, for some time honorary secretary of the Glasgow University Extension board, but now professor of philosophy in the University of Michigan. His report, printed at the Glasgow University press, is altogether the best source of information upon "The University Extension movement in Scotland." He tells us that, in the academic year of 1888–89, 17 extension courses were delivered, with a total attendance of over 1,450. The following season there were 10 established centers in the Glasgow district and two Glasgow

lecturers were invited into the districts assigned to St. Andrews and Edinburgh universities. The number of courses increased to 19 and the total attendance to over 1,500. However, this meant an average audience of less than 100, which was not very encouraging.

The disappointment of this period [says Professor Wenley], strangely enough, was the attempt to attract sufficient audiences to lectures within the city of Glasgow. Two courses were supplied [in 1888–89] at the Mechanics' Institute in the Calton district, upon which some 130 students attended, while three were held in the evening within the university buildings. These, however, for some unexplained reason (I am quite satisfied that the fault lay neither with the lecturers nor with the management), were a total failure, and the effort to spread the movement in the city was abandoned for some years.

This is very remarkable testimony for a university man in such a liberal and progressive town as Glasgow.

Of course with such poor financial returns as came from the small audiences already indicated, a deficit quickly arose, but it was cleared off by liberally minded ladies and gentlemen who believed in the spirit of the movement and were either members or supporters of the Glasgow Extension board. It is hardly to be expected that any form of higher education should pay financially. Colleges, universities, foreign and home missions never have paid expenses in a strictly mercantile way and never will. But for all that, and all that, they will continue to be supported.

In spite of continued discouragement and financial depression, the missionary movement in Glasgow for the higher education of the people was faithfully kept up and has achieved very considerable success in connection with that remarkable local institution, the Glasgow Athenæum.

To sum up [says Dr. Wenley], the operations of the Glasgow board, making due allowance for the drop of 1890–91, have been steady to a gratifying extent. But, till financial arrangements are somewhat altered, and the board's certificate receives a certain academic value, little expansion need be expected. During the seven sessions over which the work has extended there have been, on the average, 8 centers, taking 11 courses, and drawing as nearly as may be 1,000 students; while, in addition, during the past four years, the board's lecturers have given some 14 courses at the Glasgow Athenæum and elsewhere. Taking these into account the annual average of courses is 13, and the attendance may be stated at between 1,100 and 1,200. Compared with the splendid English results, this seems a meager achievement; but, ere it can be properly estimated, a calculation, based on relative probability, must be made. Were the Scotch movement at the four universities as successful as the English it would now have some 55 centers in operation, drawing about 6,000. Our Glasgow results are, therefore, precisely one-third of what they ought to be, judged by the English standard. Our area includes nearly one-half of the population of Scotland. Accordingly, were we keeping in line with Oxford, Cambridge, and London, we should have not less than 20 centers, and from 2,500 to 3,000 students.

But there are in the Scotch situation, as in the American, some compensating advantages as compared with England's apparent superiority in the matter of University Extension. Both Scotland and America enjoy better education for the whole people. Both have some superior institutions. For example, the Glasgow Athenæum impressed the present writer, when he saw it in the fall of 1896, as a veritable people's club, combining all the essential features of a well-appointed clubhouse, cuisine, billiard rooms, conservatory of music, library, reading rooms, lecture hall, and theater, all for the most modest charges. It is no wonder that Glasgow young men and young women do not care much for University Extension, per se, if the Glasgow Athenæum is a fair type of what citizens can do for themselves. That People's Club and People's University, with all its rambling architecture and extreme simplicity of interior arrangements, outclasses, for popular educational usefulness and social attractions, almost anything else that an American observer can find in Scotland or in all England, outside of Birmingham and London.

Glasgow is one of the municipal and educational leaders of the world. Her university, public schools, libraries, and town hall are models of their kind. American cities may well study Glasgow examples, as Dr. Albert Shaw has done in his excellent book on Municipal Government in Great Britain; but a glimpse of that Glasgow Athenæum convinced me that there is "a more excellent way," even in America, than University Extension. That way lies through people's clubs, public libraries, city and town institutes, or people's universities. In America we are gradually getting our Cooper, Drexel, and Pratt institutes, our Boston, New York, Philadelphia, Baltimore, and Chicago public libraries,[1] our National Museum and our Library of Congress at Washington. Our American people will some day arrive at a Federal or National University without waiting for local university extension.

Part II.—East Scotland.

We now turn from the west coast of Scotland to the east, from the permanent institutional results of Scotch University Extension in the union of Queen Margaret College and Glasgow University, to other no less remarkable fruits of pioneer planting.

University College, Dundee.

In the year 1874, five courses of lectures were given in Dundee by professors from the University of St. Andrews. There were three courses of 20 lectures, on chemistry, natural history, and physiology, and two shorter courses on the poetic interpretation of nature and on comparative religion. These latter were given by the two principals of the University. The citizens of Dundee had generously subscribed a guaranty fund for the payment of expenses and the high school of Dundee was utilized for class rooms. This extension work was carried on with success for two years and resulted in the establishment of the University College of Dundee.

Inter-University Committee.

The beginnings of University Extension in the east of Scotland were due to the pioneer influence of individual university men who, in 1887, formed a kind of provisional general committee representing professors in the three eastern universities, St. Andrews, Aberdeen, and Edinburgh, and other public-spirited friends of education. Public meetings were held. Circulars and specimen syllabuses or outlines of proposed extension lectures were prepared and distributed. Local societies were organized for the promotion of the cause. Courses of lectures on botany and zoology were given in 1887 at Dunfermline. At Dumfries a course on geology was attended by an audience of about seventy. At Perth four different courses were attemped in one winter season, two before and two after Christmas: (1) English literature, with 146 students; (2) physiographical geography, 237; (3) political economy, 113; (4) Greek life and thought, 114; a total of 610.

University of St. Andrews.

In 1888, a lecture extension association was organized by professors in this university. Professors Knight and Geddes were the secretaries and most active promoters.

[1] Andrew Carnegie has given altogether over $9,000,000 for the establishment of 84 libraries or institutions in the United States and Great Britain. His conditional offers now outstanding, which will probably be accepted, will amount to $2,000,000. The list of his gifts shows that $5,810,000 was expended in founding the institutes and libraries at Pittsburg, Allegheny, Braddock, Homestead, Duquesne, and Johnstown (the cities or towns in Pennsylvania where his former employees live). When American capital and Scotch or Puritan character continue to be combined in such institutions as public libraries and people's institutes, we may look hopefully toward the future triumph of popular educational and enlightened labor. Mr. Carnegie has lately given $3,600,000 for extending his public library, art gallery, museum, and music hall in Pittsburg.

Thirteen different centers were quickly established and 21 courses of local lectures were given, with a total attendance of over 1,800. Of this number Perth contributed 520.

One of the best accounts of "The University Extension Lecture Scheme in Scotland" is an address upon that subject delivered by Professor Knight, of St. Andrews, to the University Education Society at Perth in the spring of 1889. The following extracts from Professor Knight's address are of historical and educational value. Regarding the origin of the movement he said:

It sprang neither from jealousy of, nor from antagonism to, the universities. On the contrary, while it has been so far due to the unconscious and ever-increasing purpose of the ages, it has also been the product of a true missionary zeal, born within the universities themselves. It has been the outcome of a desire to give back to the masses something of what past generations, by means of our historic university system, had already given to those who started the movement. * * * The universities of the country exist for the sake of the people of the country; and our Scottish universities are popular in a sense in which those of England never have been and can not possibly be. It is well to remember in this connection that there exists in Scotland through the munificence of past benefactors the means of giving a full university training to every boy who proves himself worthy of it at the primary schools of the country. A bursary or scholarship system has been established at all our university seats—through the donations of many in the distant past and by some in recent years—by which the sons of the very poorest in the land can get to the university, if they give evidence at school of ability to profit by it; and there are special county bursaries connecting particular localities with the universities. You in Perth have a notable instance of this in the Macdougall benefaction—a legacy quite recently left by a lady who used to reside in your city—by means of which the cleverest boys from the schools of the city or county can get up for three years either to Edinburgh, Glasgow, or St. Andrews.

Professor Knight endeavored to make the fact quite clear that University Extension lectures were no adequate substitute for study in residence at the university itself. He said:

Depend upon it, much as may be gained in this city of Perth, and elsewhere, from these Extension lectures, * * * you can not possibly receive from them what residence at a university gives to the young men (and let us hope in the near future, the young women) who come up to us as regular university students. One of my own expectations is (as a result of these lectures) that many a father and mother, who have benefited by them, will feel so much the better for the initiation gained, that they will resolve, if possible, to send one of their children to a university, to obtain the larger culture, the fuller and richer knowledge, to which these courses of lectures have only opened the door.

Speaking of the education of the people Professor Knight said:

This whole movement for the education of the people by means of University Extension lectures has originated in a new perception by the universities themselves of what they owe to the nation. It is the outcome of a desire on their part to bring something of what they possess (and have long possessed exclusively) to bear upon the masses. It has been a purely missionary movement. * * * University men have felt that, since additional power has been intrusted to these classes, the question of the best way of educating them so that they may use that power intelligently is a pressing one. The belief is spread, and has become almost universal, that it will make them better citizens and better politicians, as well as better operatives, and better men and women, if they are educated as thoroughly, as systematically, and as continuously as possible—if they know something of the history of the human race, and of the history of literature, of the nature of the universe in which they live, of the laws that govern it, which are embodied in the sciences, and of the many social forces that surround them; and, further, if they get to know this, not in a haphazard way, from the accidental reading even of the best books which a local library can supply, but by the authoritative exposition of particular branches of literature, by men competent to teach them.

Upon the best means of high popular education Professor Knight said:

An educational system must have a personal element connected with it, and it must gather its inspiration from that personal element. It must, therefore, include within it

oral teaching. It must have the influence of the lecturer superadded to that of his lecture, the influence of the teacher added to that of his teaching. Then it must be education by one who, if not an expert, is at least thoroughly acquainted with the details of his subject; and, further, it must be imparted by one who has the gift of teaching, that rare addition to the gift of knowledge. * * * I heard lately of an interesting classification of persons known to her by a lady who divided them all into two classes—persons who can kindle and persons who can not. She meant those who had this gift of rousing to enthusiasm, of exciting interest, of stimulating, and leaving a fresh, breezy influence behind them; and those, on the other hand, who, however learned or able, lacked this delightful gift, this charm of personality. Now, I take it that the best University Extension lecturers belong to the first of these two classes, persons who can kindle, who can fire their audiences with new interests and new ambitions. Well, then, the universities of Scotland, as well as those of England, have devised the plan of licensing or registering their more accomplished graduates for this purpose. Those persons whom they select and license are either (1) those who hold or have held the office of professors' assistants, or (2) graduates in arts who have taken first-class honors in the department in which they desire to lecture, or (3) doctors of science, or (4) graduates who have given evidence of distinct eminence in the subjects on which they propose to lecture; or, finally, distinguished experts in any branch of knowledge who are known to be competent lecturers.

The criticism is often made that University Extension courses of 12 lectures must necessarily be superficial. Upon this point Professor Knight remarked that, while every regular course upon university premises consisted of 100 lectures, it was quite possible in a course of 12 lectures, given by a competent teacher, "to lay foundations of thorough, systematic, and orderly knowledge in any of the sciences. One of the charges brought against the movement is that such a course must of necessity result in superficiality and the conceit of knowledge rather than its possession; and we are reminded of the stale proverb about a little knowledge being a dangerous thing. But really all of our knowledge, at the very best, is little. It is all a question of degree, of a little more, or a little less, and I think there are very few possessors of knowledge who are in a position to speak of the danger of possessing less than they themselves have. What we all need is some knowledge, be it great or little, and more knowledge and an ever-increasing knowledge, and above all the ability to carry on its acquisition by sound methods of research."

Professor Knight mentions the interesting fact that in both Glasgow and St. Andrews University Extension lectures were delivered within the precincts of the university buildings, not to the regular students but to popular audiences. "In other words local University Extension societies have been formed by the university seats themselves." In conclusion, Professor Knight emphasized the gain which would result to the whole country from the formation of university lecture societies in every town of importance:

It is not only that intellectual life will be combined with enjoyment, education with recreation, the serious pursuit of knowledge with the delights and fascinations of acquiring it; it is not only that social barriers will be broken down, and all classes united in the pursuit of an elevated purpose; it is also that lessons will be taught and habits formed within each community of incalculable value to every one—habits of thoughtfulness and thoroughness, of intellectual ambition, of patient study, of calm judgment, of the reiterated pondering of problems in the pursuit of truth; lessons, too, of humility in investigation, of acquiescence in the limits of our faculties, and modesty in the expression of those convictions in which the results of knowledge are summed up. There is no doubt that attendance at these lectures, and taking part in the work that follows them, has already given a new sense of the dignity and the value of life to thousands. It has opened up fresh horizons of hope and of endeavor to the masses. It has dispelled the life weariness of routine workers and day laborers. It has cheered the lives of artisans and shopkeepers, of young men and maidens, of old men and women. It has checked the gravitation of interest toward the selfish side of life, to which so many are exposed in the hard struggle for existence, and has proved to the onlooker and the critic that the best way to meet any ignoble tendency of human nature is to foster and to stimulate a noble one.

Representatives of the four universities of Scotland, St. Andrews, Aberdeen, Glasgow, and Edinburgh, early apportioned to their own institutions the adjacent or neighboring counties. To St. Andrews were assigned Perth, Fife, Forfar, and Clackmannan. In Perth was established in 1887 a university education society, and by far the most successful and continuous work was done in that city. It furnished a large proportion of the entire attendance on subsequent lectures in the St. Andrews district. Perth alone of all towns in the district remained faithful to the extension cause, and in 1893 declared the local independence of its education society. Henceforth the town went its own way and made its own arrangements for local lectures.

The leaders of the University Extension movement in the east of Scotland have been Professor Knight, of St. Andrews, and Professor Geddes, of the University College of Dundee. Professor Knight is well known in America by reason of his writings and lectures on Wordsworth. Professor Geddes is also distinguished for his remarkable book on the Evolution of Sex and for his suggestive lectures in Boston and elsewhere on sociology and historic evolution. He has been for many years the virtual head of the International Summer School at Edinburgh, described by the present writer in the Report of the United States Commissioner of Education, 1897–98. He is also the founder and promoter of that noble effort toward the architectural renaissance on Edinburgh Castle Hill, where the so-called "University Hall" and the "Outlook Tower" are living monuments to his educational and social genius.

EDINBURGH UNIVERSITY EXTENSION.

In 1888 the senate of the University of Edinburgh, with friends of higher education in Scotland, instituted a lecture extension association. Following the example set by Cambridge, Oxford, and London, and encouraged by the success of the experiments in Scotland already made, this association offered to provide a course of 12 lectures on academic subjects by distinguished specialists from the university. The proposed style of treatment, while strict and scientific rather than popular in the ordinary sense, was made attractive to all who were desirous of carrying their education beyond high-school limits. The same methods of local organization as those prevailing in England were recommended. The fee charged by the university for a course of 12 lectures was £32. The burden of local expenses and of the railway fares of the lecturers was thrown upon local committees. It was required that a sufficient sum be subscribed locally before the association would consent to send a lecturer. The regulation of the sale of tickets was put in the hands of the local committee. Two terms of public instruction were provided for, one before and the other after Christmas.

To Edinburgh were assigned by university agreement the counties of Edinburgh, Berwick, Haddington, Linlithgow, Peebles, Roxburgh, Selkirk, and Stirling.

The practical results of the first year's work were 9 courses of extension lectures given at as many local centers, with a total attendance of about 1,000. The only two centers which fell properly within the Edinburgh district were Stirling and the Philosophical Institute of Edinburgh. The remaining 7 courses were given by special request under the auspices of St. Andrew's University Extension. Edinburgh lecturers continued to be invited into fields belonging to other universities, but made comparatively little headway in Edinburgh territory. There was no attempt at rivalry or interference, but the Edinburgh association had more available lecturers than did St. Andrew's or Aberdeen and was, therefore, able to supply local demands. The attendance upon Edinburgh Extension lectures was not large, either at home or abroad. Many courses attracted less than 100 hearers. In one year there were 14 courses, with an aggregate attendance of only 1,190. Of course there could be no permanent success for the Edinburgh Association with such meager and inadequate support. Gradually public interest and academic enthusiasm died

out. Dr. Wenley says: "The ease of access to the universities, the elaborate system of lectures in connection with local societies and churches, and the low rate of admission to the lectures of several trusts, may partly explain the apathy of the people of Scotland."

UNIVERSITY OF ABERDEEN.

In the distribution of county territory to the four Scotch universities there fell to Aberdeen the county of Aberdeen, Banff, Caithness, Elgin, Nairn, Inverness, Kincardine, Orkney and Shetland, Ross, and Cromarty, with Sutherland. This region is good for summer visitors and for the cultivation of the Scotch game of golf, but the north of Scotland is not altogether favorable to University Extension. In 1889 the local examination board of the University of Aberdeen offered winter courses of local lectures, but there was no response to the offer. Only one attempt is on record, and that was in 1889, viz, the individual enterprise of Mr. Bruce, rector of the Royal Academy of Inverness.

OBSTACLES TO SUCCESS.

The University Extension movement in Scotland has undoubtedly quickened public interest in the higher education of women, adults, and the people at large. Queen Margaret College at Glasgow and the University College at Dundee are signal examples of the historic triumph of this movement, but it must be admitted that there are certain obstacles in the way of continued and lasting success. To some extent, the same conditions which Dr. Wenley describes as militating against the scheme in Scotland have been encountered in America.

For example, the general diffusion of popular education in both Scotland and America makes University Extension virtually a luxury. Both countries are devoted to public schools, libraries, institutes, and literary societies, which meet the present needs for public instruction and the diffusion of knowledge. In both countries there are in practical operation certain endowed systems of public lectures. In both, save in large towns, population is too scattered and the distances are too great for successful extension courses. The physical obstacles are enormous. Moreover, it is not easy to find and retain vigorous young men who are really fitted for public teaching over wide areas. The work requires not only extraordinary endurance, but very peculiar intellectual and social gifts. In both Scotland and America there are but few college and university professors with any surplus time or energy for extension work. All regular instructors are overburdened with routine duties.

For these and many other good reasons, University Extension has not been such a decided success in Scotland and America as it has been in England; but enough has been accomplished to show the merits and methods of the system and to demonstrate the necessity of cultivating more favorable conditions. Dr. Wenley believes, as the writer has long maintained, that there must be a specially trained staff, a flying column of University Extension lecturers, quite distinct from the regular college faculty or university staff. Professors can not leave their academic posts for frontier work. It is impossible to do justice to regular classes on academic premises and at the same time meet classes at vast distances from home.

The Scotch reviewer of the experience of his own country in University Extension quotes, in conclusion, and with entire approval, the general principles and conditions of success as laid down by Dr. Roberts, for many years an acknowledged leader of and still an authority on University Extension in England:

1. The teaching should be given in the evening, in order to supply the needs of those engaged in business occupations.

2. The subjects should be mainly those possessing a general interest by reason of their bearing upon ordinary life, notably the various branches of natural science,

political economy, industrial and commercial history, geography, literature, and art (in the sense of art appreciation, not art production).

3. The method of teaching should be designed to give a thorough grasp of principles and a real mental training; to that end there should be opportunities of personal intercourse between the lecturer and students and regular home work for him. In the scientific subjects there should be practical laboratory work in addition to the theoretical lectures.

4. A curriculum of study should be arranged, extending over a period of years and covering a range of subjects sufficiently wide to give a broad and liberal higher education.

5. Students passing through the complete course of prescribed study should at the close receive some university stamp and recognition, such as certificates, and a degree for work done in residence.

UNIVERSITY EDUCATION FOR WOMEN IN SCOTLAND.

The institution of local examinations by the university in 1864 was the first practical and academic encouragement of the higher education of women in Scotland. But for them these examinations were only a test of individual work done at home and in purely private ways. There was as yet no provision for giving women advanced instruction in the various arts and sciences. In 1866 Miss Mary McLean (now Mrs. Crudelius), of Edinburgh, began to interest herself in securing for her sex better educational advantages. She had heard of the local lecture courses given by Professor Stuart to the ladies of the north of England, and she determined to obtain equal if not better opportunities for women in the university town of Edinburgh. Assisted by her friends, Mrs. Daniell and Mrs. Rankin, she organized in 1867 "The Edinburgh Association for the Higher Education of Women." She arranged for an opening course of lectures on English literature by Prof. David Masson, upon much the same plan of instruction as that employed by him in his university classes. A ladies' class of 265 members successfully followed the Edinburgh professor through his course of instruction. This was the result of the first season's work.

Beginning at the opening of the next academic year, in November, 1868, three new courses of lectures were organized, in the general field of liberal arts. The first course, in literature, conducted by Professor Masson, was followed by 129 ladies. The second course was in natural science, taught by Professor Tait. The special subject was experimental physics, and it attracted 141 lady students. A third course was that in logic and psychology. Lectures upon these subjects were given by Professor Fraser. It is said to have been the first course of the kind for ladies in the educational history of the British Islands. There were 65 students in this class, and we are told that the average work of the ladies "was higher than the average of the university students, while some of the best women were better than the best men."

The next step was the transformation of the ladies' society into the "Edinburgh Association for the University Education of Women." New courses of instruction were added, and a varied curriculum extending through successive years was instituted. The first sign of university recognition was in 1873, when a certificate was given to lady students who had satisfied the examiners in three subjects. In 1875 a higher certificate, or so-called diploma, was given to women who had passed in seven subjects, with honors in at least one, and with the same standard as that required for the M. A. With this stimulus of honors before it, the association rapidly developed courses in Greek, Latin, chemistry, geology, physiology, zoology, economics, education, biblical criticism, art, and music. Altogether over 6,000 class tickets were issued to ladies in Edinburgh. It is most remarkable that this Edinburgh movement has not been guided by lady teachers or especially followed at first by ladies desiring to become teachers. "It was essentially a fashionable movement

among the leisurely and cultured classes." Pedagogical and preparatory classes were, however, developed. Instruction by correspondence was instituted for the benefit of "lonely workers all over the country."

From such beginnings the friends of the academic training of women in Scotland have gradually advanced until at last, in the year 1892, the arts curriculum of the old university in Edinburgh was thrown open to lady students.[1]

XIV. ARNOLD TOYNBEE AND TOYNBEE HALL.

I. ARNOLD TOYNBEE.

Thomas Arnold, the headmaster of Rugby, died in 1842. Ten years later was born Arnold Toynbee, the Oxford student reformer. I was first led by a fancied resemblance between the ideas and popular teachings of these two men to conjecture a possible connection between their names. This conjecture was verified upon inquiry made in England. Mrs. Toynbee, the widow of the lamented Oxford reformer, said the name Arnold was given him by his father in memory of Dr. Arnold, for whom Dr. Toynbee had a great admiration. Dr. Toynbee, the father, appears, like Dr. Arnold, to have engaged in popular educational work for the improvement of workingmen. He often employed the services of his young son, Arnold Toynbee, in the conduct of scientific experiments. In this way the youth probably acquired that interest in the elevation of the masses so characteristic of his later work in the East End of London.

Toynbee's early dreams were not in the direction of philanthropy, but of a military education, and afterwards of training for the civil service. He studied for a time in King's College, London, but afterwards retired to a seacoast town in Dorsetshire, for quiet and uninterrupted study. A letter written from this town in 1871, when he was 19 years of age, clearly indicates his character of mind and heart:

> For myself I have, since the beginning of April, with the exception of a short interval in July, been reading alone at this quiet little village near the seacoast, ostensibly with a view to a university career; but determined to devote my life and such power as I possess to the study of the philosophy of history. With this object in view, I have no inclination to enter any profession; nor do I think it probable that I will compete for a scholarship at the university. To these pursuits I wish to give my whole life. The small means at my disposal, and those which without the expenditure of much time I hope to be able to add to them, will be sufficient for my maintenance. I do not care to spend my life in acquiring material benefits which might have an evil, and at any rate could not have a good, effect upon me. These ideas may appear ridiculous in one so young and of powers so immature, but they are not the result of mere ambition, or of an empty desire for fame in itself, or for the rewards with which it is accompanied. My sole, and so far as it can be so, unalloyed motive is the pursuit of truth; and for truth I feel I would willingly sacrifice prospects of the most dazzling renown. I do not even think myself capable of accomplishing any work of importance. If my labors merely serve to assist another in the great cause, I shall be satisfied.

Here we clearly see the highest ideal of modern science and of modern scholarship. Truth for its own sake and truth for the service of others. That is the best which modern culture can possibly reach.

At the age of 21 Toynbee proceeded to the university and became a member, first of Pembroke and afterwards of Balliol College. He attempted to compete for a scholarship in modern history at Balliol College, but was unsuccessful. He had studied by himself without much assistance from tutors and was unable to satisfy the

[1] An interesting historical sketch of the Admission of Women to the Scotch Universities has been written by Mrs. Charlotte Carmichael Stopes for the Boston Evening Transcript, December 9, 1892, upon which article the above account is based.

A history of the struggle in Edinburgh for the medical education of women, and how they were driven to Paris, is given by Dr. Frances Hoggan in a book entitled The Woman Question in Europe, edited by Mr. Stanton.

demands of regular examiners; his fault, however, appears to have been the possession of too much originality. One of his examiners said to him, "You have been accustomed to talk brilliantly in society, and you have written your papers just as you would talk, with a view to effect." For a man who had deliberately shunned society for the sake of independent and profound study, such a criticism was extremely unjust, but it undoubtedly served, in Toynbee's case, a good purpose; for whatever may be the defects of college tutors and college examinations, there is a great advantage to be derived by every student from the experience and methods of regular teachers.

At Oxford Arnold Toynbee, who had lived more or less in seclusion, came into the current of social life in a great university, and that life was for him the best of educators. English universities have always excelled the German universities in the cultivation of the social instinct and of the humanities. Toynbee's impressions of Oxford are well described in the following extract from a letter dated at Balliol College, October 20, 1875:

> The garden quadrangle at Balliol is where one walks at night, and listens to the wind in the trees, and weaves the stars into the web of one's thoughts; where one gazes from the pale inhuman moon to the ruddy light of the windows, and hears broken notes of music and laughter, and the complaining murmur of the railroad in the distance. The life here is very sweet and full of joy; at Oxford, after all, one's ideal of happy life is nearer being realized than anywhere else; I mean the ideal of gentle, equable, intellectual intercourse, with something of a prophetic glow about it, glancing brightly into the future, yet always embalming itself in the memory as a resting-place for the soul in a future that may be dark and troubled after all, with little in it but disastrous failure. The master [Dr. Benjamin Jowett] is very kind; he does not want me to work more than a few hours daily. I am reading Aristotle's Ethics, and shall read Thucydides as well, and I hope a little political economy; that is all this term. With care I may be able to do this, but even this will require great care.

Toynbee's health was extremely delicate and he was forced to spend most of his time in social intercourse with his friends rather than in the study of books. To this fact, perhaps, is due his strong inclination to those subjects affecting real life and the interests of his fellow-men. He early turned his attention to the subject of political economy and social science; and yet the historical spirit survived, giving character and direction to his studies.

Arnold Toynbee was by nature and previous training peculiarly suited to become an academic champion of what is now called the historical school of political economy. Originating in Germany through the teachings of Knies, of Heidelberg, and Roscher, of Leipsic, this new school found in England a few ardent exponents, notably Cliffe Leslie and Arnold Toynbee, through whom it has become known to the rising generation in the English universities. These men have set themselves against the old system of economic thought in England, or what is ordinarily called the orthodox school of political economy. This may be briefly characterized as the dismal science of human selfishness, or the science of wealth, based upon certain abstract laws, popularly known as the laws of competition, the laws of demand and supply, the doctrine of rent, etc. The whole system is based upon certain assumed principles, which are supposed to regulate all economic life, regardless of varying historic conditions and reckless of all interests save those that are bought and sold. Over against this mercantile view of economics the historical school has taken the impregnable position that men are not and should not be absolutely selfish in their economic relations; that there is and always has been a moral element in the business world, in the relations of capital and labor, master and servant; and that this ethical factor must be recognized in any true science of political economy. In other words, the dismal science is being humanized. Doctrines of selfishness and individualism are supplemented by conceptions of generosity and public spirit, which

coexist in human nature and modify economic action, according to the stage of moral development which society has reached in the different nations.

Toynbee well describes the significance of the new school in his chapter on Ricardo and the Old Political Economy. He says:

The historical method has revolutionized political economy, not by showing its laws to be false, but by proving that they are relative for the most part to a particular stage of civilization. This destroys their character as eternal laws, and strips them of much of their force and all their sanctity. In this way the historical method has rescued us from intellectual superstitions. The earlier economists, like Adam Smith, were concerned with production, but when they came to the more delicate task of distribution, they failed. A more equitable distribution of wealth is now demanded and required. But this end can only be attained coincidently with moral progress, for such an end a gospel life is needed, and the old political economy had none. This was its great fault, a fault which, now that its work is done, has become glaring in the extreme. Such a gospel must now be put forward, or all that work will fail. Morality must be united with economics as a practical science.

This characterizes precisely the difference between the new and old schools of political economy. The distinction can be made clear in the commonplace language of the shop and the street. The old economy says, "Business is business, and that is all there is about it." This is the language of the usurer, the extortioner, the "sweater," the human animal grasping all that he can hold and greedy for more. The new economy says, "Business is fairness; business is economy touched with honor and morality." This distinction makes all the difference in the world. It tends to civilize and humanize the struggle for existence.

Through Toynbee's influence, the views of the historical or ethical school of political economy have taken deep hold upon the consciousness of the university men in England, who will reshape the political economy of this generation. Indeed, the article on political economy in the Encyclopædia Britannica, by J. K. Ingram, librarian of the Trinity College, Dublin, is written in the spirit of the new school. The writer speaks thus of Toynbee:

Arnold Toynbee (1852–1883), who left behind him a beautiful memory, filled as he was with the love of truth and an ardent and active zeal for the public good, was author of some fragmentary or unfinished pieces, which yet well deserve attention, both for their intrinsic merit and as indicating the present drift of all the highest natures, especially amongst our young men, in the treatment of economic questions. He saw that our great help in the future must come, as much had already come, from the historical method, to which in his own researches he gave preponderant weight. Its true character, too, he understood better than many even of those who have commended it; for he perceived that it not only explains the action of special local or temporary conditions on economic phenomena, but seeks by comparing the stages of social development in different countries and times to discover laws of universal application. If, as we are told, there exists at Oxford a rising group of men who occupy a position in regard to economic thought substantially identical with that of Toynbee, the fact is one of good omen for the future of the science.

Toynbee's interest in real life and in the social condition of the poorer classes led him to spend one of his long vacations in the East End of London, the workingmen's quarter. Here he took lodgings in a common house on Commercial Road, Whitechapel, and lived in the simplest possible way among the people whose condition and needs he wished to study. He put himself into connection with existing institutions, such as the Charity Organization Society, and certain mission schools, supported by the church. Toynbee always recognized the importance of utilizing social forces already at hand. He even joined the Tower Hamlets' Radical Club in the East End of London, and there, in an atmosphere of bad whisky and bad tobacco, took part in workingmen's discussions of economic and social questions. Such experience gave him considerable popularity and influence with the laboring classes. Although untrained in public speaking, Toynbee found himself able to command popular attention upon serious subjects. Writing from Whitechapel to a friend he

said: "I spoke last night for forty minutes, with hardly a pause, and without hesitating for a word. My friend, who was with me, was warm in his congratulations; the audience were impressed, very friendly, and attentive. I feel as if I had discovered a new power to do God's work with, though I am still doubtful naturally about it; it drains my energy; I must use it sparingly, but I hope always in God's service."

Toynbee was graduated from the university in 1878 at the age of 26. He was engaged by Balliol College as a tutor to prepare young men for the East India civil service. This engagement left him considerable leisure time for the prosecution of economic and social studies. He continued to be an active spirit in university life, and interested himself in the organization of a society of students for the promotion of scientific politics at Oxford. He deplored the fact that university men are so powerless in practical life, and attributed this fact to their lack of organization. He said, "Every one is organized, from licensed victualers to priests of the Roman Catholic Church. The men of wide thought and sympathies alone are scattered and helpless." In the student society formed by Toynbee each member took some important political or economic subject for investigation and report to the entire company. These reports furnished the basis for social discussion.

While giving new life and activity to university thought, Toynbee served as a bursar for Balliol College, collecting its rents and coming into close relation with its tenants, whom he deeply impressed with his generous traits of character. He also took an active part in the work of the Oxford Charity Organization Society, and in all social and municipal reforms which were undertaken in that city. He contributed articles to the Oxford Cooperative Record, and was deeply interested in cooperative experiments.

The most remarkable phase of Arnold Toynbee's work was his lectures to the workingmen of England. His student experience in the Tower Hamlets' Radical Club prepared him for this larger experiment in popular education. He developed great talent for the clear and intelligent presentation of economic and social questions. Indeed, public speaking was easier for him than formal writing. The excitement lent by a large audience inspired him to the noblest effort. He addressed various audiences of workingmen in the years 1880 and 1881 upon such subjects as industry and democracy, free trade, the land question, the law of wages, etc. Everywhere he awakenened remarkable interest and popular enthusiasm. The writings of Henry George, particularly his Progress and Poverty, were at this time beginning to attract great attention in England. Toynbee felt it his duty to refute some of the extravagant doctrines of that brilliant agitator, who himself visited England and excited great furore among the workingmen. Indeed, Toynbee may be said to have lost his life in a campaign against the doctrines of Henry George. In January, 1883, Toynbee gave a lecture on Progress and Poverty at St. Andrew's Hall, London, and found his audience strongly opposed to his views of Henry George. He determined to conquer opposition, and threw himself so powerfully into the discussion that, after the victory was won, he found himself completely prostrated from nervous exhaustion. Always delicate and now overwrought by public work of various kinds, Toynbee was unable to rally. He suffered from constant sleeplessness, which brought on inflammation of the brain, from which he died on the 9th of March, 1883, at the age of 31.

One of his friends, Mr. F. C. Montague, fellow of Oriel College, in an article in the Oxford Magazine, April 18, 1883, soon after Toynbee's death, said:

> No words can bring back even the faint image of a beautiful life. No words can tell what we lose in losing our comrade and our guide. Deafened by the din of the importunate world without and distracted by insatiable cravings within, few of us can ever listen to the voice of reason, lead our true life, or fulfill our proper destiny. How many soever our harassed and baffled years, how few soever the years of the wise and brave, it is they who have lived, not we. Yet in the thought of such lives

we may find our strength. The memory of an Oxford student who freely gave up his life to help his fellow-citizens will long live in the hearts of all Oxford men, to silence a cynical despair and to shame an epicurean indifference. His example will perpetually remind us of the service which a great university might render to a great nation.

II. TOYNBEE HALL.[1]

Since Toynbee's death his Oxford friends and student admirers have built to his memory a noble monument upon the site of his early labors among the workingmen of East London. Toynbee Hall is a living monument, and not a mausoleum. It is a building which might not improperly be called a university club in the workingmen's quarter of London. It is a very different institution from those comfortable and attractive places of social resort, the West End clubs of London, although the so-called university settlement in Whitechapel is not without its material and social attractions. Oxford and Cambridge men live there in Toynbee Hall like civilized young Englishmen, with all the appliances for health and creature comfort that modern art can suggest; but Toynbee Hall is something more than a well-appointed city club. It is a beacon light of intelligence and moral culture in a dark and uncultivated district. Toynbee Hall is the educational center for the workingmen of East London and for their families.

In the building there are class rooms where men and women, boys and girls, are gathered for evening instruction. Lectures and lessons are given upon practical subjects, such as the laws of health, improved modes of living, food, cooking, eating, and drinking; upon books, art, music, morals, and the best things that human beings can learn and do. Concerts, debates, talks, instruction in political economy, English history and English politics, etc., are given in Toynbee Hall.

The best talent of our mother country has been called into requisition for the benefit of the workingmen of London. Samuel Rawson Gardiner, author of the best history of modern England, lectures in Toynbee Hall upon his chosen specialty. Into the dark alleys and dusky courts of the tenement-house quarter of London have come such glimpses of the great outer world of historic life and of the higher mountain ranges of human thought and action as were never before seen from the low plane of human existence in that workingmen's district. The people of the East End look with favor upon those young enthusiasts of Oxford and Cambridge, who teach and lecture in those pleasant class rooms of Toynbee Hall. Gentle manners, kindly natures, and social good will to men are here seen by the laboring classes in concrete, visible form. Good morals, religious life, art, education, and refinement are here seen as object lessons. Toynbee Hall men do not often preach; they practice certain principles which have been talked about in England for many hundred years.

The influence of Toynbee Hall upon the university men who spend useful vacations there is also remarkable. One of these earnest workers, in response to a question concerning his part of the work of Toynbee Hall, said:

> I would rather not say what Toynbee has done for me, it has done so much for every side of me. And I think that we are now well known and accepted among the workingmen of the outer hamlets. I find them not only glad but proud to come and visit us and be associated with us. *They set us thinking about them, and I suppose we set them thinking about us.* I only hope they find it as interesting and edifying as we do. The chief practical lesson they have taught me is that of sticking to whatever they take up with; their greatest drawback is, I think, a want of background. Politically they have little background of history; morally they are wanting in background of character. * * * If we do anything for them at all, I think we give them a greater knowledge and a better belief in human kind.

[1] On "The Work of Toynbee Hall," see an article by Philip Lyttelton Gell in the Johns Hopkins University Studies, Vol. VII, pp. 57-64. A little magazine called The Toynbee Hall Record is authoritative on the current work of this institution.

Another student replied:

What do we do at Toynbee? I should say this: We see life under varying conditions and new aspects and attempt to partake in the life we see. We learn much; we unlearn more. We have, too—and this is the most important of all—we have the opportunity not only of enlarging our culture and our sympathies, of gaining broader views and a more catholic standpoint, but of building up a new system of relationship side by side with our old, of forming around the hall a new world of student friends, and guest friends, acting and reacting on one another.

The example of educated young men carrying seeds of culture from university storehouses to the common people of England was quickly followed by the educated young women of Girton and Newnham colleges. An establishment similar to that of Toynbee Hall was formed in Southwark by young lady students who spend portions of their vacations in educational and social work among the women and children of this lowly district. It is possible that this and other social experiments in England were partly suggested to the college women by those powerful novels of Walter Besant: All Sorts and Conditions of Men, and The Children of Gibeon; but the pioneer influence of Edward Denison and Arnold Toynbee will always be cordially recognized by university men and women. The time is not far distant when philanthropic undertakings like Toynbee Hall and Southwark will be seen in all the large towns and cities of America. Indeed, such foundations are already laid in the cities of Boston, New York, Philadelphia, Baltimore, Chicago, and many other towns.

In connection with Toynbee hall, in East London, is carried on one branch of that larger work called "University Extension." The London Society for the Extension of University Teaching has already dozens of educational centers in the great metropolis, and during the past year has reached thousands of students in that city alone. One of these educational centers is Toynbee Hall, where, at evening hours, various extension courses are given to workingmen upon subjects of natural science, English history and English literature. The published fragments of Toynbee's remarkable lectures on "The Industrial Revolution" show what kind of economic thought was developed by one of Oxford's University Extension lecturers as early as 1882. If the blood of martyrs was the seed of the Church, the ideas of Arnold Toynbee and of Dr. Arnold, for whom he was named, will yet be the salvation of "Darkest England." An interesting perpetuation of Arnold Toynbee's scientific work may be seen in the "Toynbee trust lectures," given in such places as Newcastle, Truro, Camborne, Redruth, Falmouth, Bradford, Halifax, Huddersfield, and Bolton by economic specialists like L. L. F. R. Price, H. L. Smith, and that devoted friend of University Extension and Oxford summer schools, W. A. S. Hewins. The Toynbee trust lecturers are appointed not merely to give local lectures, but to study and report upon economic and social questions which have been locally studied in industrial centers.

III. TOYNBEE HALLS IN AMERICA.

The Neighborhood Guild[1] in Forsyth street, New York, was founded in 1887 by Dr. Stanton Coit, a graduate of Amherst College, who first among Americans made a careful study of Toynbee Hall in London. The New York experiment differed from the English establishment in that the leaders of the guild did not live in their own clubhouse, but took lodgings in a respectable tenement house and devoted their energies to the improvement of the surrounding neighborhood. Although the work was started by Dr. Coit single-handed, he was soon joined by other college graduates, some of whom were theological students. Their work was largely educational and social. They formed boys' clubs upon this simple constitution: "Order is our

[1] See article on "The Neighborhood Guild in New York," by Charles B. Stover, Johns Hopkins University Studies, Vol. VII, pp. 65-70.

basis, friendship our principle, and improvement our aim." The clubs met on appointed evenings in places rented by the guild and they were supported, like all clubs, by membership fees and special contributions. Many people in New York gave practical assistance to the guild. Young ladies lent a helping hand in the organization of girls' clubs, where evening classes were instituted upon a plan similar to that adopted for the boys. Occasionally the clubs were brought together for a social evening party, so that newly acquired habits of civility and good order, rare qualities among young barbarians, could be put into practice.

Out of the experience of the Neighborhood Guild grew a still more interesting experiment, very similar, in fact, to that undertaken by the college women of England among the working girls of Southwark. A graduate of Smith College, class of 1883, Miss Fine, was the secretary of the Neighborhood Guild, and at the same time a teacher of mathematics in a fashionable uptown school. She volunteered to undertake the management of a woman's college mission or college settlement for practical social work among the poorer people of a particular neighborhood in New York City. From the start, the project was strongly supported by graduates and students representing American colleges for women. An old-fashioned house was rented in Rivington street, once a fashionable but now a poorer part of the city, and there under the protection of a matron, and with Dr. Robbins, a resident lady physician, Miss Fine organized her social and educational mission. She associated with herself competent graduates from American colleges, women with money, leisure, and sense for serious work. These ladies came into residence for definite periods, paid their own expenses, and engaged in such educational classes or neighborhood visitations as seemed expedient. Opportunity was thus afforded, under skillful direction and prudent conditions, for young women to acquire by observation and practical work some real knowledge of the actual life of the poorer classes and of the economic problems connected with their social and moral improvement. With the exception of the managers, the young lady workers came only for a short period of two months or a few weeks, and then gave place to others, who came and paid their own expenses, precisely as girls do at a boarding school for the privileges of education in French, music, art, history, and literature. The Rivington Street Settlement was simply a kind of graduate school in economics and sociology, with practical lessons in a tenement-house district—a kind of sociological laboratory.

With the development and further extension of this college settlement work in America, we are not here concerned. The psychological connection of the original experiment in Rivington street, New York, with the historic examples set by Toynbee Hall and the Neighborhood Guild is indicated by the following "Appeal for a New Work," issued February 12, 1889, by Miss Katharine Lee Bates, of Wellesley College, and Miss Vida D. Scudder, of Boston:

> Nearly everyone knows something about the work done and the idea embodied in the Universities Settlement in East London which goes by the name of Toynbee Hall. Here the young men of Oxford and Cambridge live among the working people, teaching them, amusing them, meeting them freely, showing them from day to day and hour to hour the possibility of beautiful, simple, well-ordered lives.
>
> Such work as this answers to a need not national but universal; the need of escaping from the class isolation produced by the mechanical laws of modern society, into a normal, simple, wholesome fellowship with our fellowmen. Educated Englishmen have felt this necessity summon them with imperative voice. If Englishmen, why not Americans? * * * It is hoped that there may be established among the poorer working people of one of our great cities a settlement of college women, analogous in spirit and aim to that at Toynbee Hall. * * * The plan is not new; for over a year it has been quietly taking shape. But it could not be carried out unless a head could be found for the work, who should organize and direct our scattered forces. She must be a college woman of wisdom, experience, and devotion, and there are not many such. * * * Miss Fine is at present at the head of the Neighborhood Guild in Forsyth street, New York; a work among the poor, which has been carried on by means of clubs and classes with success for two years.

Arnold Toynbee died March 9, 1883, but the soul which he embodied and the ideals which he transmitted from an historic predecessor, Edward Denison, and from those spiritual teachers, Profs. T. H. Green[1] and Benjamin Jowett,[2] will live and grow forever. Toynbee Hall is an institution in which risen souls continue to live a larger, more abundant life. "Good, the more communicated, more abundant grows." Toynbee's Christian gospel of educational and social service is visibly extending throughout England and the United States.[3] It is impossible to mention here the living institutions, the men and women, that have been inspired by Toynbee's example. The many college and social settlements[4] that have sprung up in the Anglo-American world since the planting of Toynbee Hall show the multiplying and ever-widening spheres of influence created by a single human life divinely spent.

American college graduates, young men and young women, sometimes become discouraged at the vastness and hopelessness of popular ignorance. They sit down in despair before the monster wrongs and iniquities of American economic and political life. They forget that the only possibility for uplifting the masses, and for any social and political regeneration whatever, lies in work that is nearest home. It is from constant improvements of the local situation, from the establishment of local connections in our towns and cities with the great moral, social, and educational ideas of our time that general reform is to proceed.

To all Americans who are willing to do something for the elevation of society by modern methods of educational extension, I would recommend a thoughtful consideration of these words of Arnold Toynbee: "Languor can only be conquered by enthusiasm, and enthusiasm can only be kindled by two things: An ideal which takes the imagination by storm, and a definite, intelligent plan for carrying out that ideal into practice."

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[1] The Witness of God and Faith. Two lay sermons by the late T. H. Green. Edited with an introductory notice by the late Arnold Toynbee, M. A., tutor of Balliol College, Oxford. London, Longmans, Green & Co., 1886. For a further study of Thomas Hill Green's philosophy, see his Prolegomena to Ethics, edited by A. C. Bradley. Oxford, 1884.

[2] See Jowett's College Sermons.

[3] The American extension of the life and theories of Arnold Toynbee was partly due to F. C. Montague's biography of the man in the Johns Hopkins University Studies in Historical and Political Science, Vol. VII, and Jowett's sketch of his pupil in Toynbee's Lectures on the Industrial Revolution in England, London, 1884. A portrait of Arnold Toynbee, copied from a photograph sent me from Oxford by Mrs. Toynbee, now hangs in the historical lecture room at the Johns Hopkins University. Another copy may be seen in the frontispiece to Mr. Montague's biography of Toynbee in the University Studies above mentioned. An English pen portrait describes Toynbee as having "an oval face, a high forehead crowned with masses of soft brown hair, features very clearly cut, a straight nose, and a rather large, full-lipped mouth, only needing more color to produce the impression of beauty."

Articles on Arnold Toynbee by H. B. Adams appeared in the Chautauqua Assembly Herald, August 4, 1888, and in The Charities Review, November, 1891. The present chapter is a revision and expansion of the articles named. In Gunton's Magazine, January, 1896, was published a paper on Toynbee and his work by Dr. M. McG. Dana.

[4] There is a published Bibliography of College, Social, and University Settlements, compiled by M. Katharine Jones, of the College Settlements Association. The number, variety, and growing activities of these academic settlements will impress the observer with the vast possibilities of this interesting social work by college graduates. It is a form of laboratory work in social science and ought to be fostered by every church, college, or university which desires to be in touch with the living age.

APPENDIX.—*List of free libraries and other educational benefactions founded by Andrew Carnegie.*

Dec., 1886.	Carnegie Institute, and branches, Pittsburg	$3,870,000
Feb., 1899.	Carnegie Library, Washington, D. C	350,000
Dec., 1886.	Allegheny, Pa	530,000
Dec., 1886.	Braddock, Pa	500,000
Dec., 1896.	Homestead, Pa	500,000
——, 1899.	Duquesne, Pa	350,000
Dec., 1886.	Public Library, Edinburgh, Scotland	250,000
Apr., 1898.	Carnegie Library, Carnegie, Pa	230,000
Oct., 1899.	Louisville, Ky	125,000
Jan., 1899.	Atlanta, Ga	100,000
Nov., 1899.	Atlanta, Ga	25,000
——, 1885.	Dunfermline, Scotland	100,000
Dec., 1898.	Pennsylvania State College, Bellefonte, Pa	100,000
Dec., 1899.	Carnegie Library, Lincoln, Nebr	75,000
May, 1890.	Cambria Library Association, Johnstown, Pa	60,000
Jan., 1899.	Carnegie Library, Oil City, Pa	40,000
June, 1899.	Steubenville, Ohio	50,000
June, 1899.	East Liverpool, Ohio	50,000
Dec., 1899.	Uniontown, Pa	50,000
Dec., 1899.	Davenport, Iowa	50,000
Oct., 1899.	Houston, Tex	50,000
Oct., 1899.	Sedalia, Mo	50,000
Oct., 1899.	Sandusky, Ohio	50,000
Aug., 1899.	Dallas, Tex	50,000
Apr., 1899.	McKeesport, Pa	50,000
Oct., 1899.	Tyrone, Pa	50,000
Oct., 1899.	Duluth, Minn	50,000
Apr., 1899.	Connellsville, Pa	50,000
June, 1899.	Fort Worth, Tex	50,000
July, 1899.	San Diego, Cal	50,000
Aug., 1899.	Oakland, Cal	50,000
Oct., 1899.	Beaver, Pa	50,000
Oct., 1899.	Beaver Falls, Pa	50,000
June, 1899.	Greensburg, Pa	50,000
Dec., 1890.	Ayr, Scotland	50,000
Feb., 1890.	Aberdeen, Scotland	54,800
Aug., 1898.	Dumfries, Scotland	50,000
Sept., 1899.	Keighley, England	50,000
Feb., 1900.	Grove City, Pa	30,000
Dec., 1899.	Clarion, Pa	10,000
Dec., 1899.	Cheyenne, Wyo	50,000
Jan., 1900.	Ottumwa, Iowa	50,000
Jan., 1900.	York, Pa	50,000
Jan., 1900.	East Orange, N. J	50,000
Apr., 1892.	Library, Farfield, Iowa	40,000
Jan., 1900.	Carnegie Library, Covington, Ky	40,000
Jan., 1900.	Stirling, Scotland	30,000
Jan., 1900.	Leavenworth, Kans	25,000
Jan., 1900.	Emporia, Kans	30,000
Apr., 1899.	Oakmont, Pa	25,000
Oct., 1899.	Oklahoma City, Okla	25,000
Jan., 1900.	Chillicothe, Mo	25,000
Oct., 1899.	Newport, Ky	20,000
Oct., 1899.	Denison, Tex., Library	1,700
Oct., 1899.	Carnegie Library, Tucson, Ariz	25,000
Apr., 1899.	Wick, Scotland	19,615
——, ——.	Inverness Public Library, Inverness, Scotland	8,750
June, 1899.	Carnegie Library, Blairsville, Pa	15,000
Oct., 1899.	Alameda, Cal	10,000
June, 1897.	Jedburgh, Scotland	10,000
Oct., 1893.	Linlithgow, Scotland	9,000
Oct., 1897.	Public Library, Bonar Bridge, and branches, Scotland	7,500

Oct., 1898.	Public Library, Erie, Pa	$7,000
——, ——.	Butler, Pa	5,000
——, ——.	Greenwich, Conn	5,000
July, 1898.	Pittsburg, Tex	5,000
June, 1899.	Bandridge, Ireland	5,000
May, 1899.	Tain, Scotland	5,000
——, ——.	Grangemouth, Scotland	5,500
——, ——.	Peterhead, Scotland	5,000
June, 1899.	Banff, Scotland	5,000
Dec., 1899.	New York Free Circulating Library	6,000
Oct., 1898.	Public Library, Portmahamock, Scotland	3,000
Feb., 1899.	Falkirk, Scotland	2,500
Dec., 1897.	Gardiner, Me	2,500
June, 1899.	Seaboard Air Line Library	1,000
——, 1898.	Cuba—Matanzas (books)	2,000
June, 1899.	Manassas, Va.	1,000
Mar., 1899.	Hazelwood, Pa	4,000
Jan., 1900.	San Antonio, Tex	50,000
July, 1899.	Prescott, Ariz	4,000
——, ——.	Waco, Tex	2,000
Nov., 1899.	Caledonian Club Library, New York	2,750
Jan., 1900.	Bradford, Pa., Library	25,000
Jan., 1900.	Jefferson City, Mo., Library	25,000

CHAPTER XIX.

BIRD'S-EYE VIEW OF THE ST. LOUIS PUBLIC SCHOOL SYSTEM IN 1880.[1]

By W. T. Harris.

BOARD OF THE PUBLIC SCHOOLS.

Organization.—All powers relating to the management of the St. Louis public schools are vested in a body politic and corporate, styled "The board of president and directors of the St. Louis public schools."

1. This board consists of 28 members—one from each ward.

2. The officers of the board are: First, a president and vice-president; second, a secretary; third, a superintendent; fourth, two assistant superintendents, one of whom must speak German; sixth, attorney; seventh, bailiff; eighth, treasurer; ninth, architect; tenth, supply agent.

3. The board and its officers are all the persons who have any official connection with the public schools.

4. The members of the board are elected by the people for a term of three years—one-third go out of office each year.

5. No member of the board can hold his seat if interested in any kind of contract touching the schools.

6. An important feature in the organization of the board is its standing committees, consisting of one member from each district (composed of two wards). These committees, thus made up of members from different parts of the city, have in charge the business of recommending teachers, regulating the course of study, selecting plans for buildings and supervising their erection, leasing the real estate, etc. The advantage of this arrangement in protecting local interests from local influences is obvious.

REMARKS.

I. Relation of public schools to the State.—The principle on which the Government in this country is based requires that there shall be no authority exercised by the General Government in matters of merely local interest. The National Government shall not interfere unless in national interests; each State only in what interests that State. To the municipal authority shall be left all purely local affairs. Hitherto in the history of the nation, education has not been deemed a subject for national legislation, except in so far as to make grants of land for the support of schools and colleges, and to appoint a national commissioner of education, whose duty it is to collect statistics and disseminate information. While it assumes the authority to legislate for education, it does not assume the local management, but only furnishes material

[1] From the St. Louis School Report for 1878–79, pp. 252-264.

aid. The individual States, however, have recognized education as a matter of legislation, and have constitutional and statutory provisions to provide funds, and to enjoin upon municipalities the duty of establishing schools.

The general participation of all the people in the functions of electors makes it a matter of concern to each and every man what the educational qualifications of all his fellow-citizens are. The fact that local self-government is the rule makes universal education necessary. The National Government and the State and municipal governments regard education as a public necessity; therefore, on the ground that the people are not only to be law-abiding citizens, who are intelligent enough to read and understand the laws which they are expected to obey, but are also to be the lawmakers, and who should therefore be intelligent enough to perceive the social and historical conditions that make occasion for new laws, and have the ability to shape their provisions.

Productive industry makes no less demands on educated intelligence for the directive power to manage its machinery and control its combinations. If the laborer is not educated, and his productive capacity thereby increased, he can not accumulate the wealth necessary to afford him the leisure to give sufficient attention to public affairs to comprehend them, nor does he have the intellectual capacity for this purpose.

Thus, democracy is impossible without universal education.

The State therefore enjoins upon its municipalities the duty to establish and maintain schools.

II. Upon the advantages of the St. Louis style of organization for the management of schools.—The powers relating to the management of city schools are often vested in boards, the members of which are appointed by the mayor and confirmed by the city council or aldermen. In such cases the school board is dependent upon the legislative branch of the municipal government for appropriations from the treasury to pay the salaries of teachers and officers and to meet the current expenses of the schools. New buildings and building sites are in that case usually provided by the city government directly, but in some cases by the school board.

The city council is more interested in municipal improvements and in questions of a semipolitical or partisan nature than in schools, and is apt to stint the supply of the school funds at unseasonable times. Moreover, the school buildings which it erects are likely to be ill adapted for school purposes and disproportionately costly, for the reason that school architecture has its peculiar conditioning laws, and ordinary city architects, under building committees appointed in the city council, very rarely know these peculiar conditions or give heed to the statement of them by experts.

Where a cumbrous machinery of auditing and paying bills is in existence it is a well-known result that it adds to the expenses of running the schools. Dealers who trade for cash, and who are too honorable to resort to lobbying or "logrolling," do not undertake jobs in such cases, and there come in their stead a class of "middlemen" who make contracts at extortionate rates or else at ruinously low rates, with the intention to recover extra remuneration through their skill in influencing the members of the board.

A board elected by the people direct, for the special purpose of managing the schools, and vested with limited powers of taxation is sure to look after school interests, at least to the extent of the popular demand in that direction, and is not liable to be diverted from the care of the schools so much as to sacrifice them to other municipal interests.

III. Internal organization of the board.—The St. Louis school board, as before stated, appoints annually a president, vice-president, secretary, bailiff, attorney, treasurer, architect, supply agent, and a superintendent, the president and vice-president being elected from its own body. The president appoints from the board

seven large standing committees, having charge, respectively, (*a*) of the examination and appointment of teachers; (*b*) choice of text-books and course of study; (*c*) erection and repair of buildings and supervision of janitors; (*d*) leasing the property of the board which is held for revenue purposes; (*e*) ways and means; (*f*) public-school library; (*g*) supplies. These important committees are composed in such a way as to represent all sections of the city, each district of four wards being entitled to one member on each of the committees, which are thus, in fact, subboards, consisting of eight members each (the president being member ex officio). These subboards have frequent sittings and digest the details of the administration of the schools, and report the results to the board at its regular monthly meetings. Besides these large committees there are three small committees, having charge of salaries, auditing, and rules, respectively.

It frequently happens that school boards form a loose aggregate of local committees, each charged with the supervision of the schools in its ward or district and exercising the important functions of appointing teachers (and sometimes of examining and deciding upon their qualifications), as well as of visiting and superintending the schools of its district, examining classes, admitting pupils, etc.

Such local authority inevitably leads to great inequalities in the school system, and those districts which need the most enlightened management and the best teachers get the poorest supervision and the poorest instructors by reason of the incompetency of their representatives in the board. Local committees, even when composed of good men, are unable to withstand sudden local gusts of popular feeling or prejudice, while large committees, composed of representatives from all parts of the city, can afford protection to each section against its own extreme tendencies. Not one single locality, but the entire interest of the whole city is consulted in transactions relating to the examination and employment of teachers, regulation of the course of study, selection of building sites, and plans for buildings, supervision of their erection, etc.

REVENUE.

The revenues of the board for school purposes are derived from three sources:

1. From rents: The property owned by the board consists of a large landed property donated by the General Government; value estimated at $1,279,027.93, yielding the past year an income of $50,285.65.

2. A tax levied by the board annually, at a rate not to exceed 5 mills on the dollar of city property, of which only 4 mills can be used for current expenses and the balance collected to pay the bonded debt. Last year the board assessed 4½ mills, which yielded $759,856.98.

3. Other revenues: From the State school fund, including annual interest on the school fund, together with 25 per cent of the State revenue, amounting to $71,268.85 the past year. There is also a considerable sum from fines in criminal cases.

4. Income of the board from sources named, for year ending July 31, 1879:

From 4-mill tax	$759,856.98
From rents	50,285.65
From State school fund	71,268.85
From fines	3,586.61
Total	884,997.09

GRADES OF SCHOOLS, ETC.

1. There are three grades of day schools—the high, normal, and district. The latter includes grammar, intermediate, and primary departments in the same building. The two sexes are educated together. Besides these, there is held, for four months in the year, a system of evening schools.

2. There are two sessions per day, except in the High and Normal. First session commences at 9 a. m. and closes at 12 m.; second session at 1.30 p. m. to 3.45 p. m. In the High and Normal there is one session from 9 to 2.30 o'clock, with one intermission. Evening schools hold from 7 to 9 p. m. on Mondays, Tuesdays, Thursdays, and Fridays.

TEXT-BOOKS AND APPARATUS.

1. The pupils generally purchase their own text-books, which are uniform throughout the city. The board provides them for indigent pupils. The board keeps a stock of all books needed, and furnishes the same, through its teachers, to the pupils at wholesale prices. Ink, pens, and pencils are furnished by the board.

2. Apparatus, maps, charts, globes, and reference books for the teachers' desks are furnished by the board.

TEACHERS.

1. There are comparatively few male teachers in the employ of the board, it being the policy to appoint males as principals of first and second class district schools only. There are a number of male German teachers. The corps of teachers in the Central High School consists of seven males and seven females.

2. Annual salaries of principals in first-class district schools (18 assistants) are fixed at $2,000; of second-class schools, at $1,500, with an annual increase of $100 until a maximum of $1,800 is reached. Principals of third-class schools (10 or 12 assistants) receive $1,200 to $1,500. The class of school is determined chiefly by the number of assistant teachers. Assistants of the ordinary grade, called "third assistants" get $400 the first year, with annual increase until the fifth year, when they receive $550. "Second assistants" get $50 more; first assistants receive $700 per annum; head assistants receive $850. Pains are taken to secure the most skillful teachers for the primary grades, and higher salaries are paid accordingly.

3. The board employs four music teachers. These visit the schools, give special lessons, and supervise the work of their special department.

4. A rule of the board prohibits the teachers "from using a text-book in conducting any recitation, whenever the pupil is expected to recite without the book;" "in lieu thereof, the teachers are recom-

mended to use a syllabus of topics or questions, either written or printed, for the purpose of securing order and method in the treatment of the subject of the recitation."

5. There is no religious instruction or reading of the sacred Scriptures in the public schools of St. Louis. (Before 1840, on the occasion of the opening of the first public school, the question was decided against the introduction of religious exercises by a mass meeting of citizens held at the North Presbyterian Church, Rev. Dr. W. G. Eliot offering the resolutions, which were adopted without dissent.)

6. Corporal punishment is permitted, but discouraged. The reports show that there has been an average of two cases a week for each 500 pupils.

REMARKS.

I. The necessities of discipline in the schools of the United States.—The education of people in schools is not all, but only a portion, of their education. There is education in the family, which antedates the school and continues beyond it. The education in the duties of one's practical vocation in life usually succeeds the school. The school embraces only that portion of education lying between family nurture and the necessary initiation into the specialties of a vocation in practical life. In the United States, the peculiarities of society and the political organization draw the child out of the family earlier than is common in other countries. The frequent separation of the younger branches of the family from the old stock renders the family influence less powerful in molding character. Particularly in the West, and wherever the population is of recent aggregation, there are few old people; and it is the old people who give substance and strength to the family. The consequence of this weakening of the influence of the family is the importance of the school in an ethical point of view.

In order to compensate for a lack of family nurture, the school is obliged to lay more stress upon discipline, and to make far more prominent the moral phase of education. It is obliged to train the pupil into habits of prompt obedience to his teachers, and to practice self-control in its various forms, in order that he may be prepared for a life wherein there is little police restraint on the part of the constituted authorities.

II. Corrective versus retributive punishment.—School discipline, in its phase of substitute for the family discipline, uses corrective punishment, which presupposes a feeble development of the sense of honor in the child. It is mostly corporal punishment. But in the phase wherein the school performs the function of preparing the pupil for the formal government of the State, it uses retributive punishment, and suspends the pupil from some or all of the privileges of the school. In this phase of discipline a sense of honor is presupposed and strengthened.

III. Corporal punishment in city schools and country schools.—In commercial cities and towns the tendency preponderates toward forms of punishment founded on the sense of honor, and toward the entire disuse of corporal punishment. In the country schools, where the agricultural interest prevails, the tendency is toward the family form of punishment—corporal chastisement.

A further difference between the discipline of the city schools and that of the country schools is founded partly on the fact that the former schools are usually quite large assemblies, from 300 to 1,500 pupils in one building, while the latter commonly have less than 50 pupils. The commercial tone prevalent in the city tends to develop in its schools quick, alert habits, and readiness to combine with

others in their tasks. Military precision is required in the maneuvering of classes. Great stress is laid upon (*a*) punctuality, (*b*) regularity, (*c*) attention, and (*d*) silence, as habits of self-control that are necessary through life for successful combination with one's fellowmen in an industrial and commercial civilization.

RECORD BOOKS AND REPORTS.

1. Each principal keeps (*a*) an annual register, in which is entered the name of the pupil, age, date of admission, birthplace, parent's name and occupation, residence, and attendance for each quarter of the year; (*b*) a "per cent" book, in which are entered daily the items of "number belonging," "number absent," "number tardy," and the names of those transferred or received by transfer from other schools, also the attendance record of the teachers of his school; (*c*) a record of supplies received from the office of the board for the school.

2. Each teacher keeps a "roll book" containing the names of all the pupils under her charge and the record of their attendance, absence, and tardiness for each half day. Each pupil's name is accompanied with the number attached to it in the annual register, so that its items may be transferred to that register at the close of each quarter and no difficulty be experienced in finding the same.

3. The principal makes out the pay roll for his teachers at the close of each five weeks in accordance with a printed list, an edition of which is revised at the superintendent's office and furnished to each principal at the date the pay roll is required. These pay rolls are carefully revised in the office of the superintendent and certified to. They are then given to the secretary, who draws separate checks upon the treasurer and delivers them on the receipts of the teachers.

4. An annual report summing up the items of the annual register is made out at the end of the year, also a report of the supplies used or left on hand; a "block report," containing the residences of all the pupils in the school, classified by the blocks wherein they reside. From the latter report a large map is shaded, so as to give a bird's-eye view of the location of the school population. This map is studied to find the proper locality of a new building to relieve a crowded district.

5. A quarterly report of items from the "per cent book" is required, and a quarterly programme showing the time, subject, and length of each recitation of each teacher in the school, and also the grade and quarter of advancement of each of her classes; also a quarterly report of all the cases of corporal punishment, with names, dates, and causes.

SCHOOL BUILDINGS AND FURNITURE.

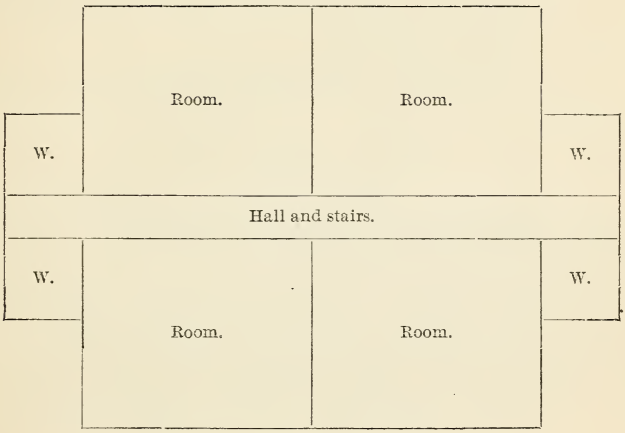
1. It is the policy of the board to build twelve-room buildings, three stories in height, having four rooms to the floor, and each one placed in a corner so as to get light from four large windows, placed two in the rear of the pupils and two on the left side. Of late it has become the

practice to group schools near each other—on the same block, if possible—and place the whole group under one principal, thus giving him charge of twenty or more rooms. The school yards usually contain about 22,000 square feet, of which about 6,000 feet are covered with the buildings.

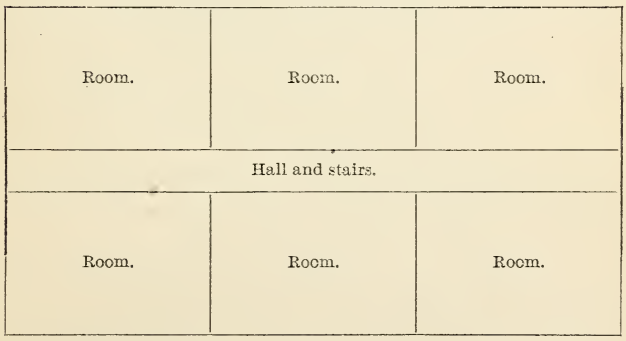
2. These buildings are furnished with "combination furniture," each seat adapted to two pupils. Each room seats about 60 pupils, if in the primary grades; 50, if in the higher grades of the District schools.

3. The two rooms on either side of the hall which runs through the house, dividing it into two parts,[1] are separated by movable partitions, so that they may be united for general exercises, such as singing, etc.

[1] *Plan No. 1.*



Plan No. 2.



Plan No. 1 is preferred, because each room admits light from two sides; while in plan No. 2 the light is admitted to the middle rooms only from one side, and is, therefore, very unequally lighted in its different parts. When the sun is shining directly into its windows, and the protection of curtains or blinds must be used, the pupils are obliged to strain their eyes to see their work, or else sit, without protection, in the glare of full sunlight. "W." indicates the position of the wardrobes or clothes rooms.

4. Each school is furnished with a piano, purchased, in part, by the money raised by the patrons of the school; the board formerly made it a practice to furnish one-half the cost of a piano when the school raised the other half.

5. It is thought that 700 pupils are quite as many as is desirable to bring together in one building. The division of the pupils into classes, and their assignment to rooms containing 50 or 60 pupils each, placed under the special charge of a teacher for instruction and discipline, secures in the maximum degree the personal influence of the teacher upon each pupil.

The old style of school building, in which pupils studied in a large room under the police control of the principal, and repaired to the small recitation room to recite to the assistant teacher, was notably inefficient in securing this penetration of the personal influence of the teacher. The pupils under that system were not humanized as they are under the one now practiced.

6. Smaller buildings than those above mentioned do not furnish pupils enough for a thorough classification, at least in the higher grades of the course of study.

EXAMINATIONS.

1. In the higher grades the teachers hold written reviews at the close of the week on the work of that week.

2. The principal inspects daily the work of his assistants, and examines all classes that are pronounced by the assistant teacher in charge to be ready for promotion to the work of the next quarter in the grade. Pupils in the lower grades are not held back at any time to await a general examination by the superintendent, but are advanced into the work of the next grade by the principal whenever, in his judgment, they have completed the work of the previous grade satisfactorily. Promotion from the seventh to the eighth and from the eighth to the ninth years takes place only at the close of each quarter of ten weeks, and upon examination by the superintendent.

3. The supervising principals inspect the subordinate schools under their charge once a week, note their condition in respect to discipline, instruction, and general management, examine classes reported by the principal for promotion to higher work, and make a weekly report to the superintendent of the results of their visit.

4. The two assistant superintendents use all their time during school hours in visiting the schools and inspecting the work, or conferring with the teachers regarding special matters pertaining to the conduct of the schools. One of the assistants gives special attention to the regulation of the German instruction.

5. A semiannual examination is held, by the superintendent, of all the pupils advanced beyond the third year of the course of study.

6. An examining committee, consisting of the superintendent and his assistants, and the principals of the Normal, High, and Branch High Schools, conduct the examination of candidates for positions as teachers in the schools and report the results of the same to the teachers' committee of the board.

REMARKS.

I. The course of study.—The course of study is laid down with a view to give the pupil the readiest and most thorough practical command of those conventionalities of intelligence—those arts and acquirements which are the means of directive power and of further self-education. These preliminary educational accomplishments open at once to the minds of the pupil two opposite directions: (*a*) the immediate mastery over the world of productive industry—the mathematics and natural sciences; (*b*) the initiation into the means of combination with one's fellow-men, the world of humanity, practically and theoretically—language, literature, and civil history.

The course of study, therefore, includes reading and writing, arithmetic, geography, grammar, history, and Constitution of the United States, drawing, outlines of natural science (including botany, physiology, zoology, natural philosophy, physical geography, astronomy, and chemistry), and outlines of general history.

In the high schools, the languages, ancient and modern, higher mathematics, sciences, and literature are pursued.

In the normal school, specific preparation is given to qualify graduates of the high school for teaching.

In the St. Louis schools, the primary instruction is considered to be of especial importance. By the use of the phonetic system of learning to read (invented by Dr. Edwin Leigh), at least one year is saved in learning to read. The method uses a modified alphabet, so formed that each character has one sound only. Each letter of this alphabet resembles the corresponding letter of the ordinary alphabet so nearly that the general appearance of the words is preserved, and a transition to the ordinary type is found quite easy after half a year's work in the new alphabet.

II. The kindergarten.—The kindergarten grade of instruction has been added in many schools as an introduction to the primary grade.

III. Natural science.—In order to adapt the course of study to the wants of a manufacturing community (an office which the kindergarten also assists in performing), and to the general demands of the age, the study of natural science has been introduced into all grades of the district schools. Oral lessons are given one day in the week, one hour in length, and as the course is a "spiral" one, it is traversed anew once in three years; each pupil has the opportunity of coming to the same topics three times in his course through the district schools.

IV. German instruction.—German instruction is given in all the grades of school as an optional study for pupils of German descent, and for such Anglo-Americans as are able to take the extra work. The object is to carry the German pupil through the necessary steps to enable him to read and write the tongue of his ancestors, and to give him the key to the possession of its literature. Twenty thousand pupils take this study, one-fourth being Anglo-Americans.

V. Classification and grading—Frequent promotions.—An important innovation in the stereotyped organization, as found in the many city schools, has been made in St. Louis, with a view to facilitate proper grading and classification. In order to meet the wants of the pupils, some of whom are slow by temperament or weak in bodily health, and some of whom are strong and of active temperament, frequent reclassification is made, in such a manner as to allow the bright and rapid pupils to advance into the classes above. This promotion and reclassification occurs as often

as once in ten weeks, whereas, according to the old plan, such classification takes place only at the end of the school year, and the consequence is that the difference in ability to do the work of the school grows to be very great between the best and poorest in each class before the reclassification takes place.

VI. Evening schools.—For the benefit of those youths and adults who are deprived of their opportunities for education by employment during the day in some useful occupation, evening schools are established, holding sessions during the fall and winter, for four months, four evenings a week.

VII. Public school library.—A public school library completes the system by furnishing "what to read" and giving unlimited access to the recorded wit and wisdom of the race to those who have learned how to read. It is open to all at merely nominal fees. One dollar paid once in four months entitles one to a temporary membership; or when $25 is paid, it makes one a life member.

CHAPTER XX.

SCHOOL GARDENS.[1]

By E. Gang, Triptis, Thuringia, Germany.

Contents.—Historical Review—Sites and arrangement of School gardens—Different Sections of School gardens—Management—Instruction in School gardens—Educational and Economic Significance of School gardens.

I. HISTORY.

School gardens, in the narrow sense of the term, are a very modern institution; but when considered as including all gardens serving the purpose of instruction, the expression of Ben Akiba may be indorsed, "there is nothing new under the sun," for in a comprehensive sense, school gardens cease to be a modern institution. History teaches that the great Persian King Cyrus the Elder (559–529 B. C.) laid out the first school gardens in Persia, in which the sons of noblemen were instructed in horticulture. King Solomon (1015 B. C.) likewise possessed extensive gardens in which all kinds of plants were kept, probably for purposes of instruction as well as ornament, "from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall."

The botanical gardens of Italian and other universities belong to school gardens in the broader acceptation of the term. The first to establish a garden of this kind was Gaspar de Gabriel, a wealthy Italian nobleman, who, in 1525 A. D., laid out the first one in Tuscany. Many Italian cities, Venice, Milan, and Naples followed this example. Pope Pius V (1566–1572) established one in Bologna, and Duke Francis of Tuscany (1574–1584) one in Florence. At that time, almost every important city in Italy possessed its botanical garden. The renowned educator Amos Comenius (1592–1671), in his Didactica Magna, maintains "that a garden should be connected with every school, where children at times can leisurely gaze on trees, flowers, and herbs, and be taught to enjoy them." In Germany, August Hermann Francke established a school garden at Halle, in 1695, in connection with his orphan asylum. The orphans were occupied with garden work during their leisure. In France, J. J. Rousseau (1712–1778) advanced the school garden idea in his "Émile," published in 1762, in which he pointed out the importance of garden work as an educational factor.

The philanthropists Basedow, Campe, and Salzmann likewise included school gardens among educational agencies. Campe, together with his wards, planted in the neighborhood of 10,000 trees during his lifetime. Salzmann wrote concerning this subject: "School gardens have been laid out neither to draw the attention of passers-by, nor to give great returns, but to instruct." Pestalozzi himself (1746–1827) was a farmer for a long time, and occupied his wards at Neuhof with field and garden work. "I wish," he said, "to make my estate the central point of my agricultural

[1] Articles on this subject were printed in the Annual Report of 1889–90, vol. 1, p. 398; of 1897–98, vol. 1, p. 225, also in volume 2 of same Report, p. 1623 and p. 1632. The following article is translated from Rein's Pedagogical Cyclopedia.

and educational efforts. The orphans are to be kept, and to be instructed at work and through work." The school garden idea was further advanced by Frœbel, who founded the first kindergarten at Blankenburg in Thuringia in 1840, and recommended light gardening for the larger children in connection with the play of the younger ones. Besides kindergartens, the first school gardens were established in the larger German cities at this time. In 1848 one was connected with the advanced school for girls in Worms. Dr. V. Stoy, in Jena, possessed a garden connected with his educational institution, from 1855, that was of the greatest use to him for instruction.

With regard to schools in general, however, these isolated attempts are of little significance, since they affected only private and secondary schools. School gardens entered upon a new stage of development when their establishment, in connection with rural elementary schools especially, was required by law. This first occurred in Austria. The Austrian imperial school law of March 14, 1869, prescribes in section 63 that "where practicable, a garden and a place for agricultural experiments shall be established at every rural school." A supplementary regulation, dated August 20, 1870, furthermore requires that instruction in natural history shall be given in an appropriately arranged school garden. At the Vienna exposition, in 1873, a schoolhouse with a perfectly equipped garden was exhibited. This not only gave expression to the new idea, but stimulated further progress. Prof. Erasmus Schwab may be considered the actual founder of elementary school gardens in Austria, although a few such gardens existed before his time; as, for instance, that of Neunkirchen, laid out as early as 1700. Others deserving of merit in their efforts in behalf of developing the school garden idea are: Prof. Alex. Mell, of Marburg; Dr. Francis Langauer, of Vienna, teacher and editor of "The School Garden" (1885–1891); Francis Susnick, of Vienna, teacher; Frederick Staudinger, of Gratz, teacher. In Austria-Hungary, the classical land of school gardens, there are at present (1898) over 18,000, covering an area of thousands of acres. Most of them are found in the crownlands of Bohemia[1] (4,500), Moravia (2,000), Lower Austria (1,000), Styria (800), Corinthia (300), Silesia (500). The idea is best exemplified in Styria, where there is no school without a garden. The Horticultural Society of Styria, under the presidency of Rector Kristof, deserves special credit for establishing and developing school gardens, which it has always been ready to support. It distributes annually, free of charge, a large supply of cuttings, all kinds of seeds, special varieties of flower and vegetable seeds, and the like. At the exposition held in Gratz in 1880 it exhibited a complete school garden, which received general approval and contributed much toward the spread of this useful institution.

The school garden question has also been alive in Switzerland for about twenty years. The government of the canton Thurgovia first recommended the establishment of model school gardens in 1879. Its example was followed by most of the other cantons, and since June 27, 1884, the Federal Government has taken up the question of school gardens, appropriating a yearly sum of 3,500 francs for their establishment. The agricultural society of Switzerland has recommended such establishments since 1881, and given them powerful support. By awarding prizes and other financial aid, it advanced the cause to an unusually great extent. Model school gardens exist now at the normal schools of Schwyz, Berne, Küssnacht, Zürich, and Chur, and at different elementary schools, as, for instance, in Lichtensteig, Hug, Flamatt, Buchs, Langenau, Lübingen, Zürich, and Berne.

Since the war of 1870–71 France has reorganized, improved, and developed its school system in many ways, supplying deficiencies. Besides improving the education of teachers, the law of March 18, 1882, outlined a course of study for primary

[1] It is reasonable to see a causal nexus between the enormous fruit crops and exports from Bohemia and the school gardens in that country.

schools that places the first instruction in horticulture and agriculture in the school gardens in the middle grades, where pupils acquire the knowledge of kinds of soil, fertilization, and field work. In the higher grades they learn farming, agricultural book keeping, and horticulture. A decree of December 24, 1885, requires that instruction on these subjects be not limited to theory, but be combined with experiments in the school garden. According to another decree of December 11, 1887, no plan of a school building in the country to which the State contributes shall be accepted, unless a garden be attached. Model school gardens are found at several normal schools, as, for instance, at Besançon, Nancy, Limoges, Rennes, Toulon, and Lyons. After the course of study has been completed, many French normal schools send their students to agricultural schools to acquire the practical training in agriculture and horticulture that will fit them for rural schools.

In Belgium the study of horticulture is compulsory. For practical purposes the school law of August 14, 1873, requires that each school shall have a garden of at least 39½ square rods, to be used in connection with instruction in botany, horticulture, and agriculture. A royal decree of January 9, 1897, lays especial stress on vegetable culture, in which female teachers must be sufficiently versed to give theoretical and practical instruction. All public elementary schools in Belgium have gardens; the Government grants 6,000 francs annually as prizes among pupils who have excelled in this department of study.

Naturally the English, with their leaning to the practical, attach great importance to manual labor and agriculture. However, the State government bestows little attention on these things, especially after the pupils have passed the school age (14 years). Private societies receive support from the State for the further instruction of those who have left school. These societies establish so-called continuation or supplementary schools, not only for commercial and industrial but also for agricultural education. Since 1892 some gardens have been laid out in connection with agricultural schools, which serve for theoretical and practical instruction. Besides being present at lessons, the pupils are put in charge of special beds. During the summer their efforts are examined at different times by a commission, and prizes are awarded for the best work. Teachers equip themselves for this department of study by attending lectures that are given free by agricultural societies.

In Sweden an interest in school gardens has been manifested for many years, nearly as early as in Austria. A royal circular of October 15, 1869, required gardens, averaging from 70 to 150 square rods, to be appropriately laid out. In 1876 Sweden had 1,600, in 1881 2,000, and in 1894 as many as 4,670 school gardens. Of late years this number has somewhat diminished, since in the northern parts of Sweden more importance is at present attached to manual training, to which the State likewise contributes a large support. The character of the country, little adapted to agriculture, may be the reason for the lack of attention with respect to school gardens in Norway.

In middle and southern Russia small farms and gardens are beginning to be attached to people's or elementary schools in many villages. As a rule the community or resident landholders give the required amount of land free. The best developed gardens are found in the province of Jekatseinoslaf, in southern Russia, where 257 of the 504 schools possess such small model gardens, divided into sections for grain, vegetables and fruit, kitchen truck, grapes, and mulberry trees for the support of silk worms. In 1895 these schools collectively cultivated 296½ acres of land, including vineyards, and possessed 12,000 fruit trees and over 1,000 beehives.

In Germany school gardens have not as yet been regulated by law; nevertheless the idea struck root twenty years ago. In some German States legislation for schools requires or defines it as desirable that each rural school should have a garden; but this is meant to serve more especially for the maintenance of the teacher. It is not so often arranged for purposes of instruction as may be desirable. The most

is done in the Kingdom of Prussia for the cultivation of fruit trees; nearly every teacher in the country possesses a small orchard. In the cities gardens are occasionally established to furnish the plants required for instruction in natural history. Such gardens, in which only certain kinds of plants are cultivated, are called *partial school gardens*. To provide pupils with plants for instruction in botany presents considerable difficulties in cities, and has occasioned the establishment of large gardens. Such central school gardens, which furnish at stated periods plant material (thousands of cuttings and specimens) to schools, exist in many of the large cities of Germany. The first was established in the Humboldt-Hain, in Berlin, and covers nearly ten acres. Since 1879 the city of Magdeburg possesses a central school garden in the Herrenkrug park, which contains a section of beds of nearly 62 acres; 17 acres are utilized for tree nurseries and 5 acres for the botanical division. Leipsic ranks next in order, with an area of 3 acres in 1888; in 1889 Breslau possessed 5 acres; Mannheim 5 acres in 1889; Dortmund 5 acres in 1890; Cologne 5 acres in 1891; Altona 3 acres in 1891; Karlsruhe nearly 2 acres in 1894; Elberfeld, Kolberg, Stettin, and other cities have gardens of greater or less extent. In many cases plants are arranged according to families. In the central school garden at Berlin the plants are arranged according to geographical zones.

Besides these, numerous smaller gardens have been established in connection with high schools and elementary schools. In Prussia school gardens have existed at the Wilhelm's Gymnasium, in Berlin, since 1875 (1.24 acres); at the Joachimsthaler Gymnasium, in Berlin, since 1884 (0.37 acre); at the Friedrich Wilhelm's Gymnasium since 1891 (0.11 acre); at the gymnasium at Wollin since 1888 (0.74 acre); at Bromberg since 1892 (0.2 acre); at Oldesloe since 1892 (0.21 acre); at the gymnasium in Witten on the Ruhr since 1891 (0.14 acre); at the high school in Giessen since 1891 (0.37 acre); at the normal school in Weissenfels since 1837 (0.86 acre); besides these various normal and agricultural winter schools are provided with gardens. Gardens are connected with elementary schools in Hamburg, Wiesbaden, Dortmund, Magdeburg, the suburban towns Oedenburg and Neustadt (0.07 to 0.21 acre); in Frankfort on the Maine, Gerderath in Rhenish Prussia since 1881, and in many rural places.

In the Kingdom of Bavaria gardens are especially numerous in the Upper Palatinate; a ministerial decree requires them to be at least 0.12 acre in size. Special attention is given to the culture of fruit trees. The city schools of Munich are provided with plants for purposes of instruction from the botanical garden of the university. In the Kingdom of Saxony nearly all normal schools have gardens. Most of the elementary, or people's schools, are provided with gardens, even in large cities like Leipsic and Dresden. At the second international agricultural exposition in Dresden, 1896, the Teachers' Association of Saxony for nature study exhibited a complete school garden, which received both the gold and the State medals.

The Kingdom of Wurttemberg has proportionately few school gardens, for the reason that horticulture has flourished there for centuries. The normal school at Nürtingen has a garden of half an acre in size. In the Grand Duchy of Baden the conditons are similar to those in the neighboring State, Wurttemberg. The city of Carlsruhe has three small gardens connected with elementary schools, and the normal school at Meersburg has also a garden of insignificant size. In the Grand Duchy of Hessia gardens have been connected with the normal schools at Alzey and Friedberg since 1886, as also with several elementary schools. The schools of the Thuringian States are better provided. The normal school of Coburg has possessed a garden since 1875, that at Weimar since 1878, and Schleiz since 1890. The normal schools at Eisenach, Gotha, Rudolstadt, and Greiz have all gardens, but the date of their establishment is not known to the writer. The gardens connected with people's, or elementary, schools are mostly only partial school gardens; the one at Coburg with an area of 0.15 acre has existed since 1887; that at Neustadt, near Coburg,

0.62 acre, since 1885; that at Triptis, 0.50 acre, since 1890; that at Altenburg since 1892; that at Pössneck, 0.82 acre, since 1895. Gardens are connected with the burgher schools of Jena, Eisenach, Greiz, Schmölln, Rönneburg, Neustadt and Weida, and with the Luther-school at Gera. School gardens are also found here and there in the other German States. However, if they are to make further progress for the common benefit, they must be regulated by law and receive support from the State.

II. SITES AND ARRANGEMENT OF SCHOOL GARDENS.

For gardens to fulfill their purpose, they must be located either at, or near, the school building. In the construction of new school buildings this fact must be taken into consideration. With old buildings it is not always practicable to combine the two. However, a garden attached directly to the schoolhouse is of much greater value for educational purposes than one at a distance. If there be a choice of ground, soft, sandy loam of sufficient depth is to be preferred as best adapted for gardening. Moderately sandy or clayey soil possesses sufficiently favorable physical quality to be transformed into garden soil if it is properly improved and carefully worked. The presence or absence of water plays an important part in the selection of a garden site. No garden can thrive without water. Therefore, it is best to have an adequate supply, a stream or a pond, in or near the garden. To bring water from a distance entails too much labor and expense. Furthermore, the garden, as well as the building, should have proper exposure that air and light may have free access. The morning and midday sun should be able to exercise its warming and vivifying influence. All places exposed to violent draughts must be avoided or protected by appropriate planting, since such locations frequently retard garden labor, and many plants suffer from the cold winds to which they are exposed. On the other hand, when a garden is altogether inclosed, there is danger of making the plants too tender; this is especially disadvantageous with young fruit trees, as they are thus more sensitive to frost, and will not thrive as readily when transplanted to less sheltered locations. As school gardens are to exercise a broader influence and serve for the instruction of others, they should be so situated that at least one part faces the street or roadway, so that a survey of the whole can be made from that side.

The size depends upon local conditions, the number of pupils, and the number of sections which it shall contain. If the garden is to serve only for the purpose of instruction, it should cover about one-sixth of an acre. If it includes the kitchen garden for the teacher it must be at least one-fifth of an acre in size. But if grounds for play and gymnastics are likewise to be included, and this is an advantage, it must cover at least one-fourth of an acre. The gardens in Austria average about one-fifth of an acre. The ground for gardens must be donated by the community, and be placed at the disposal of teachers free.

After the site of the garden has been determined the fencing is to be next considered. The height of the fence should be above 5 feet, and the laths or pickets nailed about 1½ to 2 inches apart, to make it secure against rabbits. Live hedges are never secure against rabbits; many, too—as, for instance, the white thorn—shelter destructive vermin. If for special reasons a hedge is to be desired, it should be of yoke elm or briars, or of privet closely trimmed and planted on either side of the lath fence. Generally it is more advantageous to make use of the fence for wall fruit, which is likewise trained over any neighboring wall or the sides of the school building. After the garden has been inclosed, the next step is its surface arrangement. When the ground has been portioned off, the teacher should make a design, laying off the walks and distributing the squares. The chief walk should not be too narrow—about 5 feet or a little over—as a great number of pupils must pass over it. The other walks may be only 3 to 4 feet wide. If the schoolhouse stands in the middle of the garden, its position must be taken into consideration in mapping out the

walks, as well as the sections. The walks near the schoolhouse, the main walks, and those of the vegetable section, must, one and all, be laid off in straight lines for the sake of symmetry and order. In larger gardens the scenic effect is heightened by laying off in curves the walks in the flower and ornamental plant section. Large city gardens may be arranged like parks, especially those parts that contain the shrubbery and grove sections, and the grounds for play and gymnastics. After the plan has been designed and drafted it should, by way of precaution, be examined by one who understands the subject before being carried into effect, as an impartial critic judges more clearly than one interested in the case. Moreover, the plan must be submitted to the school board for approval.

As soon as the plan is approved the arrangement of the garden may be begun. The walks and squares are first staked off. When the walks are dug to the depth of 15 to 20 inches the earth dug up may be used for leveling or for the manure pile. The walks are then filled in with broken stone, gravel, or cinders, and covered with sand. As firm and clean walks are an important factor in every garden, nothing should be neglected when making them. The squares, according to the plants to be raised, should be dug over to the depth of about 18 to 24 inches. The soil for trees should be furrowed to the depth of about 30 inches. As a matter of course, all large stones must be removed; they are best disposed of in filling up the walks. After the squares have been thoroughly spaded over and leveled, the required fertilizers are spread and worked in. The best fertilizer is stable manure, to which chemicals, guano, superphospate, kainite, and bone dust have been added. To every 10 square feet of ground about 10 pounds of half-rotten manure, 5 pounds of guano, 5 pounds of artificial fertilizer (containing the required lime and other substances), or 3 pounds of bone dust, and 3 of kainite are required. If stable manure, combined with liquid manure, is freely used, chemical fertilizers containing nitrogen, as guano and saltpeter, may be dispensed with. All the heavy labor that is required to arrange the garden must be done by adults at the expense of the community, as it is not adapted for children. The best season for this work is late autumn.

III. THE DIFFERENT SECTIONS.

The contents of school gardens must be adapted to given conditions, the same as their size depends on local conditions. The requirements of a rural school are altogether different from those of a city school. Gardens for boys' schools are arranged unlike those for girls' schools, and those connected with normal schools, or other secondary institutions of learning, have not the same appearance as those of country schools, as gardens of private schools are distinguished from those of orphan asylums.

A complete school garden that is to include all important products, must contain a tree section, a vegetable garden with beds cared for by pupils, a botanical division, an agricultural experiment field, a flower garden, a beehive, and different ornamental plants. The given conditions, however, and the governing local necessities must decide which of them is absolutely necessary, desirable, or superfluous at any one place; the selection must be made accordingly. With respect to local necessities three different kinds of gardens may be accepted as standard: (1) the garden of a rural school; (2) the garden of a town school; (3) the garden of a large city serving a school system.

In gardens of rural schools the important sections are the tree section, the vegetable garden, the agricultural experiment field, the botanical division with commercial, textile, medicinal, and poisonous plants, and the beehive. Flowers, dwarf and berry fruits need take up very little space, and can under some circumstances be planted in borders. Where a forest is near, forest trees and shrubs need not be raised in the nursery. According to demand, grapevines, hops, and willows can be raised in the tree nursery.

Gardens in a small town require a tree nursery, a vegetable garden with beds cared for by pupils, a botanical division with commercial, medicinal, and poisonous plants, a small flower garden, and a beehive. The agricultural experiment field may be replaced by a few experiment beds. If woods are far distant, the planting of the most useful forest trees is desirable, as is also a willow section, if willow weaving is an industry of the locality.

Gardens of a large city, as well as those established for secondary and higher schools, consist preeminently of a richly planted botanical division containing the most important types of native flora that will serve as specimens for instruction in natural history and biology. They should also include the most familiar forest trees and shrubs, ornamental trees and shrubs, and poisonous, medicinal, and commercial plants. The tree section should be conducted only on a limited scale, including principally dwarf and tub fruit trees, and might be confined to boys' schools. For girls' schools a number of vegetable and flower beds is desirable, as also a few experiment and pupils' beds. No one expects to find an apiary in a city garden. The grounds for play and gymnastics should be in a close proximity to the school—if possible, within the limits of the garden.

(*a*) *The tree section or tree nursery.*—The great economic significance of fruit culture in Germany and all other civilized countries requires every school garden, especially those in rural districts, to contain a tree section. Boys must learn how to cultivate fruit trees. In rural gardens the tree section should form one-third of the whole; the second third should be arranged for vegetables, and the remaining third apportioned for the other subdivisions. The ground set aside for the tree section should be trench-plowed to the depth of about 30 inches and be then laid out in squares subdivided into beds 4 feet broad. A portion of the beds should in the beginning be planted with purchased saplings. The others should be annually supplied with seed. The sowing, in rows, should take place in the fall or spring. During the summer the seed beds must be frequently watered and weeded. In the following year the saplings may be transplanted to another bed, at a distance of from about 8 to 10 inches apart, and improved later on. There are three principal methods of improvement: Grafting, budding, and inoculating. A year after improvement the young trees are again transplanted, three rows to the bed, each tree 2 feet from the other. Frequent transplanting makes them take stronger root. The training of the trunk takes place in the next four or five years. Every fall or spring the branches are clipped about 2 inches, and the trunk is allowed to increase naturally in height, provided it develops properly in circumference. If the growth in both directions is insufficient, the head of the trunk branch is clipped annually about one-third of its last year's growth, so that the branches may get thicker and stronger. Specimens that have weak and ill-grown trunks can be utilized to advantage for hybrid improvement. When the healthy young trees have attained a height of about 6 feet, the head of the trunk and all branches are cut off, leaving only the upper five nodes from which the crown, namely the head of the trunk and four branches, are developed at a height of 5 feet. One year after the trimming of the crown the young tree is developed, and can be taken up for permanent transplanting. The cultivation of dwarf trees must likewise be taught. Dwarf varieties presuppose a proper weakly growing stock. Dwarf apples are grafted on what the Germans call "Splittapfel" (French, "doucin"), or the paradise apple; dwarf pears, most frequently on the quince. The improvement must take place as deep down as possible near the root by means of inoculation or budding.

The most familiar dwarf forms are the pyramid, the palmetto, and the cordon. To train a pyramid a one-year-old scion on a dwarf stock should be cut off to 1½ feet. From the upper nodes in the same year the head of the trunk and four or five branches should be trained. If the tree is of vigorous growth, the second series of branches may be trained 9 to 11 inches above the first by pruning at this height. If the growth is weak, the head of the trunk should be cut back two or three nodes the

following year, and a strong year's growth be permitted to a height of from 9 to 11 inches. The new branch series can be formed the following spring. In this way the pyramid gradually develops. Pyramidal trees are planted either in borders or in special beds. A great variety of apples are specially adapted for that form. The palmetto form is chiefly used near walls and fences. It is raised by taking a one-year-old grafted tree, cutting it down to from 11 to 15 inches, and allowing only the three highest buds to develop. The uppermost bud forms the head of the trunk; the two others directed to the side form the branches of the first stage. In the following spring the head of the trunk is cut again at the height of 9 to 11 inches, so that the second stage is formed at this distance. A new stage of side branches is thus formed every year, until the wall is covered. The branches are tied to laths or wire, and are trained as nearly horizontal as possible. A great variety of apples and pears are suitable for this kind of treatment. Horizontal cordons are trained from one-year-old grafted trees by bending them over at the height of about a foot, and training them along a wire stretched horizontally. This form is especially adapted for edging walks or beds. Perpendicular cordons are trained on wires; they are specially adapted for high gable walls. For this form also certain species of fruit are recommended. In city gardens tub fruit trees may be added to the pyramid, palmetto, and cordon. Two or three year old apple or pear pyramids grafted respectively on paradise and quince are planted in tubs or buckets set in the ground in borders or beds. In winter they are protected from frost by being covered with earth or removed to a warm spot. There are special kinds of fruit better adapted than others for this treatment.

Besides large and dwarf trees, the tree section should contain several beds of berry fruits, more important at present since improved methods of transportation have made this summer fruit easily salable in cities. Preference should be given to the larger fruits, currants, and gooseberries. With limited space, they may be planted in the borders. Raspberries should be planted in a somewhat remote corner on account of their spreading roots.[1]

In city school gardens a part of the tree section is devoted to the most familiar forest trees and shrubs and to some ornamental trees and shrubs. If willow weaving is a flourishing industry in any one locality, attention is likewise given to the cultivation of osiers. In vine-growing districts a small vineyard is a requisite, and in hop raising districts a part of the garden should be planted in hops. In suitable districts an impulse might be given to raising silkworms by planting of mulberry trees and scorzonera.

(*b*) *The vegetable or kitchen garden.*—The vegetable garden ranks next in importance to the tree nursery, as the immediate utilization of vegetables in the household teaches their usefulness. Girls show the greatest interest in this division, and plant the beds with all kinds of vegetables of their own accord. This section should be laid out in several subdivisions. A comparatively large portion is required to show the complete management of vegetable culture. In school gardens which include the teacher's kitchen garden the latter may be used to exemplify the proper management. The portion chosen for the regular management is best utilized by the "three-field system." After laying out the permanent beds, such as asparagus, the remaining surface is divided into three parts. In the first, plentifully supplied with fresh manure, perishable vegetables, such as kale, turnip-cabbage, celery, gherkins, spinach, leeks, lettuce, and the like, should be planted. The second division is not freshly manured and is planted in better keeping vegetables, such as potatoes, carrots, turnips, and radishes. In the third, which likewise receives no fresh manure, but only a light covering of soot or compost, long keeping vegetables, as pease and

[1] The author states the species best adapted in each case (tree fruit and berry fruit), but he gives them German and French names, different from those they are known by in this country. Hence the translator omits them.

beans, all kinds of onions, shallots, cibols, etc., should be planted. The division in which the perishable vegetables were planted the first year receives the moderately keeping the second, and the long keeping the third year. The fourth year it is again plentifully manured, and the rotation begins anew. By applying the "three-field system" good results are obtained from moderate fertilization, and the regular change prevents any one bed from becoming easily exhausted. That part of the garden used to teach the regular management must distinctly bring to view the best utilization of soil in one and the same bed by rotation crops, as well as the value of interplanting with some kinds of vegetables. If the teacher cares to take the trouble, the plants to be set out in the beds can be raised in hotbeds in the garden. Many kinds can be raised by early sowing in flat cases under glass cover, and setting out later. In this way early vegetables can be had in advance of the season. The best adapted for early growth are pease, dwarf beans, cucumbers, lettuce, and potatoes. Of course the species that grow quickly and mature early should be selected.

The kitchen garden must furthermore contain the required beds for pupils, which are much more necessary in the city than in the country, where most children are actively employed in their own home gardens. These beds should border on one side of the main walk, so as to be of easy access. Each should measure about 10 feet square, and they should be planted by the children according to their own measurements. The number depends upon the number of children that report themselves willing to take charge of them. A few beds must be reserved for experimental purposes, either for trial of new kinds of vegetables or for comparison. A few appropriately situated reserve beds should be planted to obtain seeds. The kitchen garden receives the greatest attention in so-called housekeeping, cooking, or domestic-science schools for girls.

(*c*) *The botanical division.*—In a garden of a large city in which the botanical section furnishes the specimens for instruction in botany and biology, the greatest attention should be given to the most important native plants. These should be arranged and grouped according to the natural system of classification. Only the most important and characteristic representatives of the various families should be considered. The following families deserve a place: Papilionaceæ, Cruciferæ, Gramineæ, Lynantheræ, Labiatæ, Umbelliferæ, Liliaceæ, Orchidallæ, Campanulaceæ, Ranunculaceæ, Papaveraceæ, Caryophyllaceæ, Violaceæ, Malvaceæ, Geraniaceæ, Prinulaceæ, Valerianaceæ, Hypericaceæ, Linaceæ, Saxifragaceæ, and a few others. Ornamental shrubs and trees might be arranged in groups without distinct limits. According to space the following may be considered: Elder, snowball, honeysuckle, cornel, spiræa, white and red thorn, Japanese quince, lilac, hedge cherry, snowberry, hazelnut, juniper, etc. In sufficiently large gardens, especially when grounds for play and gymnastics are included, groups of trees may be planted. The most familiar foliage trees should be selected, and must be planted in such a manner that the higher trees do not injure the lower. The botanical division must contain special beds of the most important commercial and textile plants, such as flax, hemp, hops, tobacco, chicory, colza, maize, millet, sugar cane, etc. The following medicinal plants can be grown and united into one group: Camomile, mullein, fennel, anise, arnica, centaury, peppermint, sage, balm mint, and wormwood.

A somewhat remote, well-inclosed space should be reserved for the poisonous plants, and warning notices be posted in the beds. The most important specimens should be represented, as nightshade, belladonna, thorn apple, wolfsbane, henbane, digitalis, petty spurge, bittersweet, purge flax, hemlock, fool's parsley, oneberry, poisonous crowfoot, and meadow saffron. The special soil and locality required by some medicinal and poisonous plants must be given, as far as possible, by appropriate soil mixture and grouping. It is advisable to label all the plants, as well as the groups in the botanical division, with small placards of wood, tin, or porcelain, giving the names in the vernacular and also in Latin; but if the plants are

to be first defined and analyzed during instruction in botany, as is often the case in high schools, it is advisable to designate the plants by numbers.

If a small pond can be dug in the garden,[1] it should not be left undone. The banks should be planted with a few characteristic marsh and water plants, as rushes, mace reeds, calamus, water violets, water trefoil, snakeweed, arrowhead, and iris; white and yellow nymphæa should cover the surface of the water. The pond should be stocked with all kinds of small aquatic animals, as frogs, salamanders, newts, water beetles, pond muscles, smerlins, sticklebacks, goldfish, etc. A rockery built of the most important native rocks and some crystallized minerals ornamented with creeping plants, ferns, and sweet broom adds a great deal to the beauty of the garden. In rural gardens only textile, commercial, medicinal, and poisonous plants need be cultivated. Cereals, fodder plants, and grasses are reserved for the agricultural experiment field.

(*d*) *The agricultural experiment field.*—This section is found only in rural gardens and, as the name indicates, serves for practical experiments. It contains the most useful cereals, fodder plants, and grasses. Cereals should include wheat, rye, barley, and oats; for experimental purposes, maize, spelt, and buckwheat. Special varieties of these grains must be represented. The following forage plants should be planted: Red, white, carnation, and yellow clover, lucerne, sainfoin, serradilla, lupine, white mustard, fodder, sand and bird vetch, beets, cabbage, turnips, and a few kinds of potatoes. The following fodder grasses deserve attention: Sweet-scented grass, couch grass, fescue grass, herds' grass, cat's tail, English and Italian ray grass, hairy reed, millet, yellow oat-grass. These plants should be so grouped as to form small grain and clover fields, beds to be hoed, and meadows. Meadow flowers may be added to the grasses. The weeds will sow themselves; the hurtful properties of each and the means for their destruction must be spoken of during instruction. Finally the agricultural experiment field must contain a few experiment beds in which new kinds of clover and grain and crops to be hoed may be tested. The comparative trials made on these fields refer to the different ways of working the ground, to fertilization, seedtime, sowing, size of seeds, etc. The agricultural experiment field is of the greatest importance to agricultural and continuation schools.

(*e*) *The flower garden.*—Flowers are favorites with children, especially with girls. This fact is best observed in a walk through fields and meadows. How active the children are in gathering the blue cornflowers, the red poppy, and the brownish cockle, to tie them into bouquets mixed with daisies and forget-me-nots. Joyfully they take their flowers home to mother for her to arrange them about the house. This love for flowers should not be disregarded in the education of children; it must be strengthened in school, directed to a noble purpose and applied to instruction. The culture of flowers, therefore, deserves special attention in school gardens. The very smallest gardens should contain these favorites in the borders: Roses, pinks, pansies, asters, wallflowers, lobelia, phlox, mignonette, fuchsias, primroses, begonias, geraniums, gillyflowers, hyacinths, and others. Larger gardens may include whole groups of magnificent and perhaps more fashionable flowers; carpet beds of various forms and combinations of color may be laid out. In girls' schools, especially, pupils' beds should be laid out, devoted entirely to flowers. A number of flowers and leafy plants in pots should ornament every schoolroom. During intervals of recess the larger girls can attend to them, and so an interest in flower culture may be awakened and fostered. Horticultural societies undertake a gratifying task when they distribute plants in pots among children free, awarding prizes to those who take the best care of their plants. The care of flowers develops a taste for what is beautiful, attractive, and comfortable in a home. It preaches order, cleanliness, and punctu-

[1] That is, if the configuration of the surface facilitates it, and a spring can be led to it to supply the water.

ality; therefore it is an indispensable means for the education of women. Flowers are often the only friendly sight in a small, gloomy dwelling; they are in fact often the only ornament that lends a charm of home to the dwellings of the poor; sometimes they are the only light in a troubled existence! Therefore it is a duty to cultivate the love of flowers as far as it lies within our power. Girls should feel the ennobling power awakened by contact with flowers, and enjoy the pure pleasure, quiet happiness, and contentment derived from it. Even among the wandering tribes of gypsies and rope dancers tender hands are sometimes found that show love of flowers enough to raise a few geraniums or fuchsias on the window sills of their ambulatory home. Considering their uncertain whereabouts and more than modest dwelling, this certainly deserves recognition and rejoices the heart of all who love flowers. The more we cultivate the love of flowers, gardens, and the beauties of nature in children, the surer we lay the foundation for esthetic culture and a contented disposition. The care of flowers also leads to a regard for other creations in nature. The more this is developed the less often trees and all kinds of plants will suffer injury from rude hands; useful animals will not be so frequently persecuted and tormented.

(*f*) *The apiary.*—The industrious bee plays an important part in the economy of nature. It is almost indispensable for the fructification of some flowers. Bee culture, likewise, brings in material gain through the much-prized products of honey and wax. The observation of these useful insects also affords many pleasures. The attentive observation of their virtues, as industry, sense of order, obedience, and readiness to render mutual assistance, excites many an impulse in the thoughtful student, and exercises a beneficial influence on disposition and character. Unfortunately, bee culture has not received the general attention which its importance deserves. Therefore gardens in rural districts and small towns should give the required impulse and awaken a new interest in these useful insects by accustoming boys to contact with them. That the bees may not be troublesome to the children in the garden, the hive should be located in a remote, dry, quiet place; the direction of flight should be toward the southeast. Four to six swarms are sufficient. The system of movable combs is generally preferred to the antiquated stationary structure. It must be left to the decision of the teacher what system is to be adopted; much depends upon his experience. Plants that furnish food for bees should be raised near the hive and in the space before it. The following can be recommended: Shamrock, mignonette, thyme, sage, borage, sunflower, gooseberry, currant, snowberry, and others.

(*g*) *Ornamentation of the school garden.*—To combine the attractive with the useful, school gardens should be beautified within their limitation. For this purpose arbors may be constructed in which pupils and teacher can take shelter in a storm, or where lessons may be conducted. They are specially indispensable where gardens do not adjoin the schoolhouse. When location and ground are favorable, a fountain with a roomy basin should not be omitted. The basin can at the same time be arranged as an aquarium, stocked with water plants, goldfish, smerlins, water beetles, and other small aquatic animals and ornamental fish. Small waterfalls, artificial rockeries and grottoes likewise add to the beauty of the garden. Bird houses of various kinds should be provided, and food be scattered in winter, as such arrangements teach and insure the protection of birds. An easily accessible place to procure water, well or tanks for watering the plants is very essential.

(*h*) *Garden implements.*—In planning a garden the necessary implements and a store or tool house must not be forgotten. The following are required: Several spades, hoes, iron rakes, a shovel, a grafting saw, several rose shears, a sufficient number of scythes or sickles, grafting or pruning knives, several ladders of different length, and a goodly number of watering cans, a hatchet, a hammer, pincers, and a supply of cords, pegs, etc. These implements are to be furnished by the community like all other school appliances, and must be kept in good condition.

IV. MANAGEMENT.

The management of a school garden requires not only a proper understanding and full command of the subjects to be taught, but a broad view of the work to be done. This can be gained only by an exhaustive plan of work which the teacher must arrange and follow. The plan must cover the work for the whole year from spring to autumn, and define what is to be done each week. Each year the work must be planned anew, changed or supplemented. Two or three hours a week in the afternoon, after school hours, must be reserved for gardening. In urgent cases the hour for gymnastics may be taken up by gardening. In rural schools with a small attendance all the pupils may be occupied with this kind of work, according to their ability. In city schools the intermediate and upper grades only need take part. Applicants for work in the garden are, of course, accepted at any time. If the number of pupils is large, it is desirable and necessary to arrange them in different divisions, ten to twelve in a group, and appoint a foreman. In the tree section the work is done by older boys. Early in the spring the seed beds are dug over and leveled when the seed is sown. They are then covered lightly with moss or brush, to keep the ground damp, and are frequently watered. One-year-old saplings and one-year-old grafted trees are transplanted to beds that have been dug over and otherwise properly prepared for them. Young fruit trees are to be taken up and planted anew. Older fruit trees and berry shrubs must be pruned, if it has not been done in the fall. The ground around the trees is freshly loosened and manured. Single branches of specimen and test trees are again grafted, for which the scions were already cut in January. Strong saplings are improved by budding or grafting. The preparation of mummy is at the same time discussed. Strong stocks are pruned to the crown, while the growth in height of weaker ones is retarded.

After this spring work is done the beds are hoed for the first time and weeded. During the summer the thriving scions are fastened to poles and the wall and dwarf trees are repeatedly nipped and supplied with liquid manure, and, when necessary, watered. In July and August the young saplings are grafted and the bandages of the spring grafting loosened so far as the cord tightens. Injurious influences on fruit are to be counteracted. In the course of the summer the beds are hoed for the second time, leveled with the rake, and the clumps broken and smoothed with the spade. The compost pile is repeatedly spaded. In the fall the branches of saplings and stocks are clipped and cut off smooth, the graft bandages are loosened, and the beds are again roughly hoed. After the harvest the older fruit trees are brushed off, cleaned with moss, straw, and broom, whitewashed, and provided with sticky girdles. The tops of the trees are pruned, the ground around their roots is loosened and fertilized with lime and compost, and the holes for winter or spring planting are dug. Varieties are studied from the ripe fruit. Crops and the preservation of fruit receive theoretical and practical attention. Young trees are freshly tied up and protected for the winter against game by being wrapped in straw or thorns.

The work in vegetable and flower gardens is done by girls, since they, as future housewives, will assume the care and management of the home garden. The borders and beds are dug over and leveled in the spring. The teacher shows the girls how to manage the garden implements and teaches them how the work is to be done. Flower and vegetable seeds are sown and a few early beds are planted. The sprouting seed is weeded and frequently watered. In the course of the summer vegetable beds are frequently weeded, hoed, and watered. The walks are also cleaned and kept in good condition. The beds are staked off by the teacher with the help of some of the boys, and are arranged, as far as practicable, equal in size. They are then distributed among those children who are willing to undertake their care and management. Each child works its own bed independently and plants it ad libitum at

individual expense. It is also entitled to the crops, provided it cares for the plants in its bed during summer. The best pupils' beds are commended in the fall, and those in charge may be rewarded with premiums. A notice giving the name of the child in charge must be attached to each bed. Although the beds are planted according to pleasure, a certain uniformity should be aimed at for the sake of appearance. Vegetable, flower, and kitchen-garden beds should be at some distance apart. Several experimental beds, serving for comparison and the test of new varieties or seeds, are cared for in common.

The work in the agricultural experiment field and in the botanical division takes up very little time; it is confined mostly to weeding and hoeing and is undertaken in common. Boys alone are to be engaged in bee culture. Before they apply themselves to the study of the living insects they are instructed in the most important facts concerning their existence, habits, and characteristics. The three different kinds of bees in a hive are discussed with reference to their outward appearance, and the structures of the cells and the internal arrangement of the hive are explained from an empty hive. In order to show the life in a hive clearly, it is desirable to have a so-called hive for observation, which the teacher can arrange in the following manner: A very small hive with only six frames should have glass walls lengthwise, covered on the outside with wooden doors. The frames are set two by two in three rows, one above the other, so that each comb may be observed from without on both sides. The entrance is at one of the shorter sides. In May the hive is stocked with the necessary material and placed in a somewhat isolated position. The old queen is taken from a populous hive and placed in the lowest section of the hive, together with a brooding comb; next to it is placed a comb with a hatching brood. Above these two frames two empty combs are set with workers' and drone cells, and above these two combs with honey supplies. In this observation hive the teacher can show the three kinds of bees in their occupation, draw the pupils' attention to the laying of the eggs by the queen, and explain the purpose of the structure for workers and drones. Then the queen may be removed and a new one brought up. Now it will be observed how a tribe acts without the queen bee, how the queen cells are arranged and built, and how the bees raise workers' larvæ to queens, how the first queen slips from the egg, the subsequent hatching of the others, which are, as a rule, stung to death by her, and, finally, the time required to hatch a worker, a drone, and a queen (sixteen, twenty, and twenty-four days). If the work during the summer has been favored by fine weather and plentiful crop of honey flowers, the hive may be increased by two frames of artificial combs, whose building may be noticed, together with the storing of the honey, from which the queen is excluded by means of a grate partition. In the fall the killing of the drones may be observed, and, finally, a young reserve queen may be kept on hand during the winter.

The teacher should keep a simple daybook, recording receipts and expenses and notes on the experiments undertaken. The care and supervision of a garden in connection with a school require much time and trouble. The community should therefore pay a small sum annually for the teacher's services as head school gardener. An appropriation should also be made for the purchase of seed, seedlings, props, labels, cord, etc. The produce belongs in part to the teacher, namely, fruit, berries, honey, and vegetables. A great deal, of course, is divided among the children; and seeds, cuttings, fruit, etc., are given free to any one interested. The produce of the pupils' beds belongs entirely to the children. The returns from the tree nursery go toward the school fund, but the commendable custom of presenting exemplary boys with a fruit tree at the time of their graduation deserves to be continued.

V. INSTRUCTION IN THE SCHOOL GARDEN.

The laying out of a garden always has a distinct purpose in view. As a rule, this is its economic value. The end and aim of school gardens, however, are different.

They are by no means primarily designed as a source of revenue for teachers and community or for utility in the general sense of the term, but for purposes of instruction and education. It is true that teachers' and pupils' industry is rewarded in a material way. Agriculture in its different branches, especially fruit culture and horticulture, is also promoted, and for this reason, perhaps, school gardens are maintained in some countries. But their chief value consists in their advantage for the education of youth. As schools are institutions of learning and training, so also are school gardens. They bear the mutual relation to each other of egg and shell. Gardens are a necessary part of schools and attain their educational value by being connected with them. "No instruction without observation" is the watchword of our times. By means of gardens this demand can be met. In many cases they furnish numerous specimens for object lessons, or are themselves excellent means for observation; in others they give many points for comparison that have the value of direct observation. Thus they are valuable supports for observation in instruction. Instruction in gardens appears partly as occasional lectures, partly as defined lessons, partly as practical work, and partly as constant nature study. The practical work in gardens affords many opportunities for information of various kinds. In digging the beds the necessity of working the ground is shown, the different kinds of soil may be discussed, the use of implements demonstrated, and the application of the laws of physics in their regard explained. The habits, characteristics, and qualities of insects and small animals which the children find are discussed, and they are made acquainted with the useful and injurious animals, are exhorted to protect those which are of use and to destroy those which are harmful. In sowing, planting, hoeing, weeding, and watering, the teacher can give appropriate hints and show the practical manipulation of the implements. Many natural phenomena give him the opportunity of explaining natural laws and of applying what has been learned. In gathering the crops the attention of the pupils is drawn toward the commercial uses of the different kinds of produce, and the value of each as an article of food is considered.

Besides the occasional instruction the teacher should conduct some of the regular lessons in the garden when the weather permits it. The greater number of lessons in nature study must be given during the summer out of doors, as the garden furnishes the best subjects for direct observation. Thus a lesson in natural history may be given in the garden on the different kinds of soil, their improvement and appropriate working; another on the nutritive organs, growth, and conditions of the life of plants; a third on their transplantation and propagation; besides, a lesson each may be devoted to the different kinds and forms of leaves, flowers, and fruit, useful animals, the destruction of enemies to fruits, the practical protection of birds, etc. In speaking of the tests of comparison which the teacher has appointed the lesson should be conducted at the experiment bed after its examination. For instance, first experiment: In a bed one half of the cabbage plants have been manured with fertilizers rich in nitrogen, while the other half have not been fertilized at all or have received no extra amount of nitrogen; result, the former have attained a luxuriant growth; rule, fertilizers rich in nitrogen promote the growth of leaves. Second experiment: Plant beets, radishes, and the like in one bed; nip all but two heart leaves of one half of them and let the others grow undisturbed; result, plants that have been deprived of their leaves develop small, insignificant roots; rule, loss of foliage is harmful, as it weakens the plant. Third experiment: Plant a bed in carrots; sow one half thick and the other half sparse; plant another bed similarly in cabbage or celery; result, where the plants are close together their development is poor; the others are much better; rule, setting plants too close together injures their growth and consequently diminishes the crop.

Similar experiments can be made with planting deep, with the choice of seeds, the rotation of crops, etc. All such experiments, however, the teacher must arrange in direct connection with the plan of study. He must note where and when he intends

to make use of the garden for instruction and observation. According to Jung, the noted natural-history teacher in Kiel, very serviceable subjects of instruction can be gained by arranging the objects in the garden in groups "en miniature." Lessons and reviews may include: The plants and animals found in the garden; the most beautiful and useful forest trees in the garden; the useful shrubs; flowers and their forms; the apple tree as a protector; the most beautiful field flowers; the best forage grasses; the three-field system of agriculture and horticulture; the useful garden insects; the destroyers of fruit and useful plants; plants injurious and plants useful to man; plants raised for food, clothing, and building purposes or medicine.

Besides natural history, geometry, physics, and mathematics, in part, may be taught in the garden. Thus, a class of pupils, under the teacher's direction, can measure off the garden and beds and calculate areas. The pitch of the ground can be calculated by means of a leveling instrument or a water level; the height of a tree or a house can be ascertained by the length of its shadow and the area of variously shaped beds and subdivisions can be found, and the value per acre of crops estimated; finally, the calculation of surface and volume may be combined with the classification of all kinds of geometrical figures, as circles, ovals, rhombs, triangles, squares, polygons, columns, cones, spheres, etc.

Countless specimens for other studies are furnished by the school garden; as, for instance, for drawing leaves for the study of their outline, parts of flowers and foliage; furthermore, objects for perspective study, as beehives, arbors, nesting boxes, etc. Many physical laws are exemplified for the study in the class room, as, the construction of a fountain as an example of communicating vessels; the well as an example of the suction pump; ripe fruits fall in consequence of the law of gravitation; water poured into the saucers under flowerpots will rise in obedience to capillary attraction; the temperature is higher underneath the snow than in the open air, because of obstructed radiation; the air is cooler after rain on account of evaporation; the sun's rays exert a stronger influence on slanting hot-bed covers the greater the angle of incidence; dark objects get warmer more quickly than light on account of less reflection, etc.

Abundant material for compositions is likewise furnished. Language lessons are plentifully supplied with subjects of discussion. Subjects for compositions are: The garden in summer and in winter. My flower bed. The life of the honey bee. Why are fruit trees planted? How is a bird cage or a nesting box made? The uses of singing birds. How to fight the enemies of fruit. The gardener's friends among animals. Why is the goat of no use to the gardener? The garden also furnishes much material for the study of home geography and singing.

In schools of more than one division, all can receive outdoor instruction. In rural schools of but one division the small children may be left in the schoolroom under the superintendence of an older pupil while the upper and middle classes, either together or alternately, may be occupied with outdoor lessons. Outdoor instruction is warmly advocated by educators of the present day. The December conference of 1892, held in obedience to a call of Emperor William, recommended it in these words: "Outdoor instruction shall be furthered in every way for the study of the natural sciences as well as for the study of the home geography and home history." The school garden is naturally the best place for such instruction.

Finally, instruction in gardens suggests constant observation of natural phenomena which the children can make under the teacher's direction. They refer to weather conditions, sunrise and sunset at different seasons, winds and clouds, development of plants from germination to fruit formation, the actions of useful and harmful animals, blooming plants, and other things. In order to be able to set such tasks, the teacher himself must be a diligent observer of nature, and must have planned a series of lessons for the seasons, months, and weeks. These observations are a preparation for instruction; they render the senses more acute, exercise thought and judgment, and arouse interest.

VI. EDUCATIONAL AND ECONOMIC SIGNIFICANCE.

The latest efforts of pedagogy have been directed toward harmonizing school instruction with the demands of practical life. Our time demands an education based especially upon a broad knowledge of the natural sciences, by means of which those facts and experiences are acquired by self-observation and self-activity which will benefit the pupil in his later life. As that instruction is best which is based on or derived from actual observation, whose fruits the pupil gains by his own labor, and as the school garden is the richest storehouse for lessons in the natural sciences, it necessarily follows that gardens are a valuable adjunct of the modern school. The reforms in the teaching of natural science, advocated lately, emphasize the grouping of the matter of instruction according to common conditions in life which exemplify the mutual influence of different forms of existence upon one another. This method makes good results justly dependent upon the continued well-directed observation, and that observation on the part of the pupil requires gardens in order to have the means near at hand, under the control of the teacher, and without loss of time. These actual observations awaken intense interest, render the senses very acute and judgment clear. Daily contact with trees, flowers, and other natural objects awaken pleasure in them and love of nature. The knowledge acquired by direct observation necessarily leads to a proper appreciation of the natural forces and their effects, to the admiration of natural beauties manifested in bright colors and lovely forms. A school garden in the full height of its summer glory, moreover, gives to children a proper understanding of poetry; in short, it offers both matter and method to an æsthetic education, such as nothing else can give.

Besides being an invaluable aid for instruction, school gardens are also excellent means of training. Their chief purpose is training for work, a purpose which they have in common with other institutions. All children, large and small, can be occupied according to their capacity, and the very occupation gives them pleasure, develops a liking for labor, and strengthens self-confidence in their own power. Moreover, work in the fresh air is much better for children's health than that in the school workshop. This is to be no reflection on the latter, but merely a statement of fact. Where workshops are a necessity, in industrial districts, they are beneficial and promote national prosperity. They may, in fact, be easily and advantageously connected with gardens. In autumn and winter the boys can benefit by manual training in the school workshop.

Garden work, properly directed, and managed with pleasure and understanding, promotes industry, attention, judgment, skill, and self-reliance; it develops the sense of order, cleanliness, punctuality, beauty, responsibility, and duty, and, consequently, forms the foundation for a firm will and self-reliant action, or, in other words, for a moral character. The free intercourse in the garden gives teachers opportunities of knowing their pupils better in a short time. They are consequently able to direct the education of individuals in the best way and by the most appropriate means. The work in common also arouses public spirit in children, the sense of fellowship, and mutual dependence. It awakens an esteem for all manual labor and a proper judgment and valuation of the work of others. Children learn, above all things, that "in work there is no shame," and that "idleness is the mother of evil." The educational influence of labor is great and lasting. At sight of this or that plant the mature man will, in his own fields and garden, recall the time when he first learned something of it in the school garden. Many things obscure then are clear to him now; however, he does not underrate the early impulse, and will certainly not fall behind the boy in zeal, judgment, accuracy, and activity.

An institution like the school garden, that combines so many educational forces, will hardly be deprecated by prudent educators. Many of them at present maintain a favorable opinion of school gardens and advocate their establishment. M. Vierthaler says: "The example of the ancient Persians deserves to be imitated.

With them a knowledge of agriculture and horticulture was required by law of the King's as well as the slave's son." Kellner, school councillor in Treves, says: "I recommend, above all things, horticulture in all its branches to the teachers of rural schools." "Manual labor, such as gardening, light cabinet-making, and turning, promotes the boy's physical development."—(Sailer.) "The advantages of even the smallest garden are so many and so great that no school should be without one."—(Demeter.) "A school without a garden is like a stag without water."—(Dr. Georgens.) "School gardens are a foundation for the knowledge of nature and its consequent pleasure, and an excellent means of training."—(Professor Schwab.) "Not trees, shrubs, herbs, and grasses alone are what we offer the children in the school garden, but love of nature, labor, and home."—(F. Langauer.) "The question of school gardens in the development of public schools is gaining in importance every day."—(Maresch.) "No public school should be without a garden; every community that resolves to connect a garden with its school is laying up capital whose interest it enjoys in the prosperity of its future members."—(Jablonzy.) "The hour must and will come when the eyes, until now struck with blindness, shall be opened and see that the institution of school gardens has become the greatest blessing for the people."—(Sprenger.)

Finally, school gardens are of paramount economic significance. Franz Langauer, of Vienna, makes the best characterization by calling school gardens the pioneers of agricultural progress. As elementary schools lay the foundation of all subsequent education, so all beginnings of civilization, all progress of industry and agriculture proceed from them. To manage his affairs at all successfully, and be able to enter into competition, even the farmer of the present day must possess a certain amount of knowledge of natural science. The first elements of this he learns in the elementary school. And the shortest and safest way of attaining this end is through his own observation, his own activity, his own experiments in the school garden. What the boy learns he will later on utilize in the management of his property; therefore the impetus and the progress that are observed in agriculture in several countries are mainly the result of school gardens. The pleasing impression left by them on the residents of towns has its unmistakable influence upon home gardens. The teacher's diligence and punctuality are imitated by the people who try to make their gardens excel in cleanliness, beauty, and productiveness. The closer the intercourse is between teacher and people the surer this favorable influence will be. These conditions are soonest realized where gardens are open to the public on Sunday; teacher and neighbors both benefit by a free and easy interchange of thought. The beautiful fruit raised awakens a desire in visitors to possess one or another kind of seed to raise the same varieties at home. Seed can be furnished in abundance, and thus desirable kinds of fruit and vegetables, beautiful flowers, and the like, are spread, to the advantage of the community. Often new varieties of vegetables, fruit, and flowers, or truck-garden specialties, as asparagus, strawberries, vegetables, and roses and other flowers are introduced especially through school gardens near large cities, and in a short time are so generally cultivated that they become a source of income to the population and help to advance prosperity. The shady arbors, the magnificent rose bushes in the borders, the full vines on the walls, and the laden pyramid fruit trees in the beds are admired by many, who resolve also to do something toward beautifying their homes. Many a one, since his visit to a school garden, no longer lives in a thicket of brush, or surrounded by bogs, hemmed in by ungainly willows and alders. Now his vine-covered house stands in the center of a friendly garden and the windows look out upon blooming plants and heavily laden apple trees that shade the broad, level village green. "A good example deserves to be imitated" is justly applicable to the school garden. One that is kept in order serves as a model in many ways. Many a village is indebted to school gardens for its outward attractions.

These gardens also exert an educational influence upon the maturer members of the community, for in them are taught the youth who are beyond school age and attend continuation schools (evening and holiday schools), the most important principles of agriculture, showing by practical experiments how agriculture must be carried on to be profitable, offering productive specimens, and warning against mistakes. School gardens are a preventive against degeneration; they promote excellence of performance. Thus they are pioneers of civilization, promoters of practical progress, and sources of prosperity in communities.

The establishment of a school garden is easy in most places, since nearly all school buildings have some ground that may be reserved for the purpose. Every new school building, however, should be planned with the view to connecting a school garden with it. This should be legally provided for. Not only the State and the community, but agricultural and horticultural societies are interested in the establishment of school gardens, and should give their support in advancing the idea. Special gardens should also multiply in future. At present almost all normal schools in Germany, Austria, Switzerland, Sweden, and Denmark possess gardens in which the future teachers are trained and taught in agriculture and horticulture.

The idea of school gardens is so simple and natural that the coming century will wonder how public educational institutions could ever have existed without them and been true to their purpose.

Literature.—Schwab, "Der Schulgarten," Vienna, Ed. Hölzel, 1876. Mell, "Einrichtung und Bewirtschaftung des Schulgartens," Berlin, P. Parey, 1885. Uiesseu, "Der Schulgarten," Düsseldorf, L. Schwann, 1896. Cronberger, "Der Schulgarten," Frankfurt, 1898.

CHAPTER XXI.

EDUCATION IN FRANCE.

France, Republic: Area, 204,092 square miles; population, 38,517,975 (1896).

PREVIOUS ARTICLES.

The educational system of France. (Report, 1888–89, Vol. 1, pp. 112–149.)

Report of the educational congresses and exhibition held in Paris, 1889. (Report, 1889–90, Vol. 1, pp. 41–186, by W. H. Widgery.)

Brief view of the educational system, with statistics for 1888–89. (Report, 1889–90, Vol. 1, pp. 249–261.)

Elementary education in London and Paris. (Ibid., pp. 263–280.)

Education in France: Statistics, 1890–91; progress of primary schools since Guizot's law, 1833; higher primary and classical schools of France. (Report, 1890–91, Vol. 1, pp. 95–124.)

Education in France: Outline of the system, and statistics for 1892; State faculties; proposed transformations and development of teaching functions. (Report, 1891–92, Vol. 1, pp. 73–95.)

Civil service in France, by W. F. and W. W. Willoughby. (Ibid., pp. 369–412.)

Education in France: Outline view, with current statistics; inspection of infant schools; recent changes in the baccalaureate; reorganization of medical studies and of the scientific course preparatory thereto. (Report, 1892–93, Vol. 1, pp. 219–237.)

Education in France: Statistics for 1891–92–93; recent modifications in the department of secondary education; recent development of the faculties (universities); progress of the system of primary instruction; schools for adults; movements for the admission of American students to the universities of France. (Report, 1894–95, Vol. 1, pp. 289–312.)

Education in France: Statistics for 1894–95; summarized view of primary schools; proposed modifications of secondary institutions; the law of July 10, 1896, transforming the State faculties into universities; status of medical students in France, with special reference to foreigners; Dr. Alcée Fortier on the French lycées. (Report, 1895–96, Vol. 1, pp. 611–639.)

Education in France: Statistics, current and comparative; opening of the universities under the law of July 10, 1896; the new doctorate open to foreigners; state secondary schools vs. church establishments; the law of July, 1893, respecting salaries of teachers of primary schools; the superior primary schools, progress, organization, and scope; M. Boutmy on the reform of the baccalaureate; M. Bréal on the study of Greek. (Report, 1896–97, Vol. 1, pp. 29–70.)

Education in France: Statistics, 1896; the decentralizing movement; the reconstruction of the universities; efforts for strengthening the moral influence of the schools; temperance instruction; manual training and technical schools; report of Mr. Charles Copland Perry on technical education in France; the admission of American students into French universities; review of the career of M. Victor Duruy, minister of public instruction, 1863–1869, by the Duc de Broglie; review of the work of M. Henri Marion, first professor of the science of education at the Sorbonne, by M. F. Buisson. (Report, 1897–98, Vol. 1, pp. 694–788.)

Topical outline.—Brief conspectus of the system of public education in France—Summarized statistics—Current record of the universities organized under the law of 1896—Tabular view, 1887 and 1897—Admission of foreign students to French universities—The University Doctorate created under decree of 1897—Current record of primary schools: Review of the work of the Republic in respect to primary education, by M. Maurice-Faure; relative enrollment in public and parochial schools at specified dates from 1881–82 to 1895–96; number of certificates awarded to pupils at specified dates; teachers, number and classification; school libraries, number and State appropriations for—State appropriations for primary education, 1887, 1892, 1898—Antialcoholic instruction in French schools—Movement for prolonging education—Statistics of illiteracy—Department of secondary education: Interest of the Government in respect to secondary education—Congress of Secondary Professors—Commission of Inquiry appointed by the Chamber of Deputies—First report of Commission: Scope of inquiry as set forth in the introduction; statistics of secondary schools discussed by M. Gréard, vice-rector of the Academy of Paris, by the Abbé Batiffol, and by M. Levasseur—Depositions of M. Berthelot, of M. Lavisse, of M. Michel Bréal—The educational system of the Christian Brothers: Deposition of Brother Justinus, general secretary of the Order of the Brothers of Christian Schools.

BRIEF CONSPECTUS OF THE SYSTEM OF PUBLIC EDUCATION.

The system of public education in France comprises three departments, primary, secondary, and higher under centralized control. The chief of the system is a cabinet officer, the minister of public instruction (at present, M. Leygues).

To the central administration belong the Superior Council of Public Instruction, the chiefs or directors of the three scholastic departments (superior, secondary, primary), the corps of general inspectors, and a large body of clerks or assistants.

The functions of the Superior Council are advisory and in some cases disciplinary and judicial. The council consists of 60 members, one-fourth appointed by the President of the Republic and the remainder elected by their colleagues (professors and teachers). General inspectors, ten for secondary and a large number for primary instruction, are sent out annually from Paris to investigate and report upon the condition of colleges and schools in their respective jurisdictions.

The State educational system (University of France) is organized in 17 academies (including one in Algiers). An academy comprises the university and associated lycées and colleges, and also the public primary schools within its limits. The head of the academy is the rector who is appointed by the President and subordinate only to the minister. The rector is assisted by an academic council composed of professors and officers of education. The chief officer of primary education under the rector is the academic inspector appointed by the minister. Primary inspectors, 450 in number or about one for every 150 schools, are subordinate to the academic inspector; they come into the most intimate relations with the schools and teachers, as their province is the inspection of the individual schools. The 90 departments of France are districts of educational administration within the academies; the prefect or civil chief of the department has certain authority in respect to primary schools. In particular he appoints the full teachers (titulaires), although his choice must be made from lists approved by the academy inspector. The prefect is assisted by a departmental council composed of school inspectors, teachers, and members of the civil council, which gives advice upon matters relating to the primary schools.

The medical inspectors of communes and departments are charged with the sanitary inspection of schools. The only local authorities concerned with education are the communal councils and mayors who select the sites for the school buildings and vote the funds for the expenditures at the charge of the commune, and local school committees (commissions scolaires) formed to encourage school attendance. To the

department of superior instruction (Director, M. Liard) belong the universities and special schools of high order, which are under the minister of education.[1] Paris is the seat of these special schools and also of the principal university. Under the law of 1896 fifteen of the former faculty groups have been organized into independent universities. They registered 28,782 students in 1898, an increase of 11,142 or 63 per cent above the number enrolled in the faculties in 1888.

The professors of the State universities are appointed by the President of the Republic in advice with the minister of public instruction. The choice is made from two lists, one furnished by the University Council, the other by the Superior Council. The salaries of professors are paid by the State and they have right to a pension.

To the department of secondary instruction (Director, M. Rabier) belong the lycées or State classical colleges for boys, the State lycées for girls, and the communal colleges established by the communal or local authorities and aided by the State. In 1897 the lycées for boys numbered 109, of which 18 were in Paris and enrolled 11,005 pupils, and 96 in the departments enrolling 41,422 pupils. The communal colleges numbered 227 with an enrollment of 32,412. This gives a total of 84,839 boys in the public secondary schools. The church secondary schools enrolled the same year 84,569 pupils and private secular secondary establishments 12,818.

The professors of secondary instruction (public) are appointed by the minister of public instruction. Their salaries like those of the professors of superior instruction are paid by the State and they are also borne on the pension list.

To the department of primary instruction belong the infant schools (écoles maternelles), the superior primary and elementary primary schools, and the primary normals.

The primary normal schools, 87 for men and 85 for women, are established by the departments (law of June, 1833). In 1897 they enrolled 7,736 students (3,865 men, 3,871 women).

Every commune must establish at least one public primary school for children of the legal school age, 6–13 (law of 1833 confirmed by later laws). The establishment of schools for children under 6 years of age (écoles maternelles) and of superior primary (high schools) is optional with the communes (see statistics, p. 1086).

Public primary schools of all classes are free (law of June 16, 1881) secular (law of March 28, 1882), and only lay teachers may be employed in them (law of October 30, 1886). Instruction is obligatory for all children (law of March 28, 1882), but parents are free to choose the means. Parochial schools are thus recognized, although they are deprived of State support.

The enrollment in public primary schools (elementary and superior) in 1897 was 4,189,506, a decrease of 5½ per cent below that of 1887.

The enrollment in private primary schools chiefly parochial was 1,341,098, a gain above 1887 of 23 per cent. The total enrollment in primary schools, public and private, in 1897 was, it appears, 5,530,604, equivalent to 14 per cent of the population.

No one is permitted to teach in any capacity in a public primary school unless provided with a State certificate. These certificates are the "brevet élémentaire," secured by examination or graduation from a normal school after a probationary term of service; the brevet supérieur and the "certificat d'aptitude pédagogique," both requiring examination and successful service.

The State pays a fixed annual salary ranging for full teachers in the elementary

[1] Collège de France, Museum of Natural History, Practical School of High Studies (École Pratique des Hautes Études), Superior Normal School, School of Charts (École Nationale des Chartes), School of Oriental Languages, French School of Archæology at Rome, French School at Athens. The remaining special schools, such as the Conservatoire des Arts et Métiers, École Nationale Supérieur des Mines, etc., are under the charge of other ministers.

primaries from $200 to $400 for men, and for women from $200 to $320. In addition to his salary, every teacher must be provided with a residence or with a money equivalent for the same. The law imposes this provision upon the communes and fixes the rates of indemnity for residences. Primary teachers may be retired upon a pension after reaching 60 years of age, if they have been in the service 30 years. The minimum pension is for men $120 and for women $100 annually (law of June 9, 1853).

The total State appropriation for the current expenses of public instruction in 1898 was $39,775,615, of which amount $30,890,707 was for primary instruction. The summarized statistics of the various classes of schools for the latest date of report are as follows:

Summarized statistics of schools and universities, 1897–98.

Classes of institutions.	Date.	Enrollment.		Teachers.		Current expenditure.
		Male.	Female.	Male.	Female.	
Primary schools:						
Écoles maternelles (infant schools), ages 2 to 6	1897	[a] 729,648		.....	.....	.....
Élémentaires, ages 6 to 13, supérieures, ages 13 to 16	1897	[a] 2,781,733	[a] 2,748,891	151,533		[b] $37,890,173
Primary normal schools, ages 16 to 20	1897	[a] 7,736	.....	.....	.....	[c] 1,737,771
Secondary schools:						
Public, ages 8 to 20	1897	[a] 84,839	[a] 14,859	.....	.....	.....
Private, ages 8 to 20	1897	[a] 96,950	.....	.....	.....	.....
Universities:						
Public	1898	[d] 27,911	[d] 871	.....	.....	[d] 2,772,001
Private	1898	[d] 1,407	.....	.....	.....	.....

[a] From report to Chamber of Deputies, by M. Maurice-Faure, chairman of the financial committee (1899), pp. 248, 249.
[b] 1896, for public primaries only which enroll 75 per cent of the pupils in primary schools.
[c] 1895.
[d] Report of M. Maurice-Faure, pp. 37 and 172.

CURRENT RECORD OF THE UNIVERSITIES OF FRANCE.

The most important recent change in the State system of education is the passage of the law of 1896, transforming the "faculties" of higher education into organic universities. The constitution of the faculties had been gradually modified in preparation for this final measure by a series of decrees and laws (in particular, decrees of 1885 instituting a general council of the faculties of each académie with authority in both financial and scholastic affairs. This council becomes the university council under the new law. (Laws of July 18, 1889, and of April 18, 1893, regulating finances).

Before the passage of the law of 1896 higher education was wholly under the control of the ministry of public education, the fifteen universities created under the law (one in each academy having the four faculties of letters, sciences, law, and medicine) have a large measure of independence; their affairs are regulated by their own councils, they have control of their own property and of the fees received from students for registration, matriculation, laboratory and library facilities, etc., and they are authorized to confer a doctor's degree (the university doctorate) which is distinct from the State degrees con-

ferred by the examining bodies designated by the minister for that purpose. This last power greatly enhances the value of the universities for foreign students.[1]

The universities have also to assume responsibilities from which the State faculties were free. The fees which they retain must be applied strictly to increasing the facilities for study and the equipment of laboratories and libraries, the maintenance of new courses, etc. The State no longer makes appropriation for these purposes. Henceforth also the funds for new buildings must come from the private funds of the universities. Thus local pride and local resources must be depended upon for much that is essential to the maintenance of higher education. The outlook for the leading universities is bright, but doubt is expressed as to the ability of the smaller universities to maintain their prestige. In some the tendency is already manifest to concentrate their resources on specialties favored by their location; it is even possible that one or two of the universities will become technical institutions of high grade and attract by this means a new class of students.

Since the passage of the law the University of Paris has effected a loan of $340,000 for the construction of new laboratories for the Faculty of Science, the University of Lyons has borrowed $18,000 for the completion of the chemical institute and $12,000 for the completion of the maritime laboratory of Tamaris and the archæological museum; Poitiers has promised $14,000 for the installation of its university library; Nancy has received $80,000 from local manufacturers for the erection or enlargement of laboratories.

Since the 1st of January, 1898, the date at which the new law went into effect, several universities have increased the number of their chairs and assistant professorships. Paris has added in the Faculty of Law a chair of the history of Roman public law and an auxiliary course in the history of treaties; in the Faculty of Letters an auxiliary course in experimental physiology and three assistant professorships in medicine and pharmacy. Lille has added to the Faculty of Letters a special course in French literature and in French grammar for foreign students, and a course in German philosophy for students of medicine who are candidates for the school of military hygiene. Similar growth has taken place in the universities of Lyons, of Aix-Marseille, of Bordeaux, of Caen, of Montpellier. The development of courses of local interest is also noticeable. Among these are: The History of Provence and of the Provençal language and literature at Aix-Marseille; colonial geography and Spanish at Bordeaux; Norman art, literature, customs, and dialect at Caen; Celtic language and literature at Rennes. These and similar movements in other university

[1] For the requirements for foreign candidates seeking admission to the French universities see p. 1089.

centers, says M. Maurice-Faure, in a report to the Chamber of Deputies, "do not destroy but fortify national amity by disclosing the various phases of the French national spirit and by helping to substitute for the ideas of a vague cosmopolitanism a profound attachment for the native land, an attachment solidly founded in love of country."

The following tables show the status of the universities at the latest date of report (1897) with respect to the number and distribution of students and expenditures, with the corresponding data for the State faculties at the beginning of the decade:

Statistics of State faculties and universities.

Academic districts.	Faculties, 1878–88.			Universities, 1897–98.	
	Number of students.*a*	Income of faculties.*a*	Current expenditures.*a*	Number of students.*b*	Expenditure. *c*
Paris	9,140	$685,316	$663,843	12,047	$1,001,162
Aix	433	95,546	99,604	849	92,266
Besançon	130	43,797	33,754	197	42,698
Bordeaux	1,029	142,064	144,206	2,144	225,656
Caen	531	101,841	71,411	598	80,407
Chambéry	.....	2,600	1,290	.....	.....
Clermont	96	45,492	35,259	257	40,286
Dijon	236	69,884	58,519	604	80,933
Grenoble	318	65,035	54,011	476	77,826
Lille	810	138,357	128,277	1,354	187,202
Lyons	962	175,640	185,537	2,335	262,120
Montpellier	890	156,110	154,177	1,496	196,941
Nancy	454	158,255	159,930	1,001	203,375
Poitiers	391	82,290	58,112	764	71,172
Rennes	659	114,345	61,484	1,063	82,022
Toulouse	1,303	121,014	92,110	1,885	127,934
Algiers	223	98,623	87,435	*d* 763	.....
Schools of medicine and pharmacy not included in the universities	.....	.....	.....	949	.....
Total	17,605	2,256,209	2,088,959	28,782	2,772,001

a Statistique de l'enseignement, 1888.
b Enquêtes et Documents relatifs à l'enseignement supérieur, tome LXXI, pp. 311–338.
c Report of M. Maurice-Faure, 1899, p. 172.
d Superior schools. (Universities not yet organized.)

Distribution of students by faculties.

	1887–88. *a*		January 15, 1897. *b*		January 15, 1898. *b*	
	State faculties.	Private faculties.	State universities.	Private faculties.	State universities.	Private faculties.
Protestant theology	102	.....	101	.....	137	.....
Law	5,152	485	9,134	964	9,371	971
Medicine	4,686	.....	8,450	148	7,426	145
Sciences	1,326	75	3,456	137	3,544	152
Letters	2,358		3,477	126	3,643	122
Pharmacy	1,118	.....	3,188	26	3,326	17
Medicine and pharmacy	2,848	151	.....	.....	1,335	.....
Total	17,590	711	27,806	1,401	*c* 28,782	1,407

a Statistique de l'enseignement supérieur, 1888.
b Enquêtes et Documents relatifs à l'enseignement supérieur.
c Of this total 871 were women and 1,784 were foreigners.

ADMISSION OF FOREIGN STUDENTS TO FRENCH UNIVERSITIES.

The recent efforts that have facilitated the admission of foreign students to the French universities have been fully considered in previous Reports.[1] They are summarized in the following statement addressed to the Commissioner of Education by Prof. H. J. Furber, jr., of Chicago, to whom, in great measure, is due the success that has attended the effort:

During the spring of 1895 the attention of French scholars was called to the partiality shown by Americans for the universities of Germany and the political sympathies which might ultimately attend the schooling of a considerable body of our students in that country. To inquire into the reason for this preference and the measures necessary for advancing the prestige of French learning in the United States, the Comité Franco-Americain was formed in Paris, with an advisory branch in Washington. The French organization numbered among its members the rector of the Academy of Paris, the administrator of the Collège de France, the deans of the different faculties, the heads of the principal special schools, the director of higher instruction, and other prominent men. The American branch included the United States Commissioners of Education and of Labor, the presidents of leading universities, and other men of prominence. (Cf. Report of the United States Commissioner of Education, 1894–95, Vol. 2, p. 305 et seq.)

The first meeting of the Paris committee was held at the Sorbonne the 26th of June, 1895. Others followed, the opinion gaining ground that the discrepancy between the numbers of Americans in the schools of Germany and France was due to the formal regulations affecting foreign students in these respective countries. In Germany the student enjoyed freedom in the election of his courses, in his methods of study, and in the choice of time and place for undergoing his examinations. Admitted to his courses, not always on the highest credentials, he was free from all onerous requirements, until, selecting his own time, he presented himself as a candidate for a degree. In France, also, it is true, he was at liberty to study what and where he pleased, if he did not aim at a diploma; but as a certificate of successful effort is not without value to the student, he would, other things being equal, naturally drift toward the country where the conditions for taking a degree were not unreasonably severe. The licence was in general necessary before the French doctorate was obtainable, and preliminary to the licence the baccalaureate was in certain cases indispensable. To introduce the German method into France in toto was not to be considered. There was an organic difference in the nature of the German and the French degrees. In Germany the doctorate carried with it no professional prerogatives. Not without further qualifications and severe examinations could the student obtain from the State the license permitting him to practice a profession. In France, on the contrary, the degrees were given, not by the university but by the state, and clothed the recipient with special immunities and rights. The licencié en droit could enter on his legal duties. The Doctor of Medicine was already a physician; while the licence of the other faculties opened public careers in various directions. To render degrees more accessible to foreigners was, therefore, to subject the native youth to a sharper competition in acquiring a livelihood,—a competition in which, because of his military duties, the Frenchman was at a disadvantage on his own soil. It was due, in fact, to this consideration that at the very time the friends of a more liberal hospitality were endeavoring to secure the foreign student greater privileges a counter agitation was developed which aimed at curtailing those

[1] See in particular Report for 1897–98, vol. 1, pp. 749–759.

that he already had. To the credit of the Comité Franco-Americain, the arrangement ultimately adopted harmonized the interests of all.

The efforts of the committee were directed along two different lines: First, toward modifying in each particular faculty the conditions affecting the granting of the old degrees; and, secondly, toward establishing degrees of a new order, possessing, as in Germany, full academic value, but conferring no peculiar privileges. Partly through the influence of the committee and partly because of other reasons important changes were made in the faculties of science in January, 1896. The features then adopted—which have, however, in view of recent innovations, since become of less importance to the foreigner—were, briefly, wider latitude in the election of studies, liberty to migrate from one institution to another, and the privilege of taking examinations either singly or en bloc. It was in the summer of 1897 that the committee was, in all except detail, finally successful. The changes then effected tended toward the creation of a new doctorate, similar to that of Germany, and did not aim at modifying the existing system of degrees. The French universities, originally independent, had been consolidated by Napoleon I into one great institution—the Université de France—of which the Sorbonne at Paris and the faculties at Lyons, Bordeaux, Montpellier, etc., were sections, known as academies. The law of July 10, 1896, restored the academies to their old position as independent universities, and a ministerial decree, dated July 21, 1897, clothed them, inter alia, with the following powers:

"ART. 15. Besides the degrees established by the State, the universities are empowered to institute titles of a nature purely scientific.

"These titles shall confer none of the rights and privileges attached by law and regulations to the (State) degrees, and in no case shall be declared a substitute.

"The studies and examinations which shall determine their distribution shall be subject to regulations deliberated by the council of the university and approved by the standing committee of the Superior Council of Public Instruction.

"The diplomas shall be delivered in the name of the university by the president of the council, in forms different from the forms of those delivered by the Government." (Cf. Report of United States Commissioner of Education, 1896–97, vol. 1, p. 33, et seq.)

If there be at present any essential difference between the degrees of Germany and France it lies in the fact that in Germany the university degree may be considered in a sense as leading to the diploma of the State—rarely if ever taken by Americans—whereas the French doctorat universitaire can not be transformed into the doctorat d'état, the latter being dependent upon preliminary qualifications, such as the baccalauréat, licence, etc.

Acting under the authority given by the decree of July, 1897, the University of Paris has since enacted regulations, which were approved by the Minister of Public Instruction April 1, 1898, and became operative at the beginning of the year.

"There is instituted a doctorate of the University of Paris. Candidates for the doctorate of the University of Paris must enter their names upon a special register provided by the secretary of the faculty or school of the university whose courses they intend to follow. They must present, in order to be inscribed, their diplomas or certificates of study or scientific degrees; must fulfill the courses of study prescribed by the present regulations, and must submit to public examination. They are subjected to the academic and disciplinary régime of the university.

"In the Faculty of Letters candidates must, if they are French, present the diploma of licencie ès lettres, the faculty reserving to itself the right of accepting equivalents; if foreigners, they must submit certificates of study, of the value of which the faculty is judge. The term of study is at least two years, which may be spent either at the faculty or at one of the scientific schools of Paris, or, in part, at some other French or foreign university. The time of study may be abbreviated at the discretion of the

faculty. The examinations include, first, the sustaining of a thesis written either in French or in Latin, and, secondly, questions upon subjects chosen by the candidate and approved by the faculty.

"In the Faculty of Science candidates must present two certificates of advanced study, such as differential and integral calculus, rational mechanics, astronomy, higher analytics, geometry, celestial mechanics, mathematical physics, physical and experimental mechanics, general physics, general chemistry, mineralogy, biological chemistry, zoology, botany, geology, general physiology, and physical geography. The faculty reserve the right of admitting equivalents in the case of foreign students. The term of study is one year. The examinations include the sustaining of a thesis indicating personal research and questions upon subjects chosen by the faculty.

"At the Superior School of Pharmacy candidates must, if French, present the diploma of pharmacist of the first class; if foreigners, two certificates of study, the first covering pharmaceutical chemistry and toxicological chemistry, the second covering galenic pharmacy and materia medica. The school reserves the right of accepting equivalents. The term of study is at least one year. The examinations consist in the sustaining of a thesis indicating personal research.

"In the Faculty of Medicine the degree of the University of Paris is given to foreign students who have taken their courses and submitted to the examinations of the medical faculty of Paris, the French degree of Bachelor not being required."

The courses of the French universities are open gratis to both men and women. Fees are, however, payable by candidates for a degree.

Although there is as yet no mention of the university doctorates of divinity and law, it may be confidently stated that these degrees will shortly be available both at Paris and at the other universities of France where the doctorat universitaire is about to be established.

It is unnecessary to say that the reforms described were carried through with no unfriendly sentiment toward Germany. There is in France no disposition to decry the triumphs of the Germans in the field of learning, while to Americans the possibilities which the schools of France afford are most forcibly suggested when contemplating what we have gained from German sources. Nor, in urging the benefits to be derived in France, is there any thought of questioning the excellence of our native institutions. For the vast majority of our students the universities of the United States offer a better preparation for the responsibilities of life than any they could obtain abroad. But there are a few to whom a wider field is necessary; and these should not remain strangers to the resources of France. Nations, too, are subject-matter for investigation; and, in view of our national development and growth, our future welfare as a State demands a more intimate knowledge of the institutions, character, and history of our neighbors than we have hitherto possessed.

The Comité Franco-Americain has been encouraged in the expectation that its friends in the United States would organize in aid of the movement so successfully begun. It is particularly desirable that at each seat of learning the cooperation of some individual or group of persons be obtained who will give publicity to such matter as the committee may from time to time communicate. A means of showing our appreciation of the courtesies the French universities are preparing to extend lies in the establishment of scholarships permitting of a certain residence in France. A further plan, which there is reason to believe would be cordially received in France, is for our universities to invite the attendance of one or more French students every year, offering their hospitality in return, if desired, for services such as it may seem fitting to demand. Under a proper system of selection the students sent from France might become of value not alone within the department of French language. These projects are submitted in the earnest hope that the support necessary for carrying them into execution may be volunteered.

The doctorates created under the decree of 1897, as already announced, are:

University of Paris: Doctorate of letters; sciences; medicine; pharmacy; Protestant theology. The university doctorate has not yet been adopted for law.

University of Besançon: Doctorate of letters and for sciences.

University of Bordeaux: Doctorate of sciences; medicine; pharmacy.

University of Caen: Law (also diploma and certificate of higher literary studies instituted in favor of free students: act November 19, 1886).

University of Grenoble: Doctorate of letters; sciences (also diploma for electro-technical subjects).

University of Lyons: Doctorate of medicine; pharmacy; sciences; letters.

University of Montpellier: Doctorate of pharmacy.

University of Nancy: Doctorate of law; sciences; pharmacy.

The following statement of the expenses to be met by candidates for the doctorate of the University of Paris is furnished by M. Henri Bréal, corresponding secretary of the Franco-American Committee:

Faculty of Protestant theology.

	Francs.
4 inscriptions quarterly of 30 francs[1] each	120
4 quarterly fees of 2.50 francs	10
Examination fees	110
Total	240

Faculty of sciences.

Annual matriculation	20
Annual fees for library	10
4 quarterly fees for laboratory, from 50 to 200 francs	200 or 800
Examination fees	140

The total depends on the fees for laboratories and on the number of years of studies.

Faculties of letters.

2 annual matriculations of 20 francs	40
2 annual fees for library of 10 francs	20
Examination fees	140
Total if the doctorat is taken in one year	200

Faculty of medicine.

16 quarterly inscriptions of 30 francs	480
16 fees for library of 2.50 francs	40
16 fees for practical exercises of 15 francs	240
8 examination fees of 80 francs	640
Total	1,400

[1] A franc is ordinarily reckoned at 20 cents, or 5 francs to $1, but the exact rate of exchange is at present 19.3 cents per franc.

Faculty of pharmacy.

	Francs.
Annual matriculation	20
Annual fees for library	10
4 quarterly fees for laboratories of 150 francs	600
Examination fees	100
Total if the doctorate is taken in one year	730

CURRENT RECORD OF PRIMARY SCHOOLS.

The general development of primary instruction is essentially the work of the Republic. Its spirit and results are thus characterized in a recent report:[1]

> The Republic was from the first justly convinced that France, overcome by misfortunes, ought to find in every citizen a soldier and in every soldier an educated man. Hence at the very time when, as the consequence of a foreign invasion, we were obliged to make the heaviest sacrifices, our republican parliaments did not hesitate to declare war against ignorance, to multiply the number of teachers, and to erect school buildings everywhere. "The future of French democracy," wrote Jules Simon, "is in its schools," and under his orders and those of his successors a vigorous movement was produced. Little by little, thanks to the diverse measures taken to promote it, thanks, above all, to the laws, which, in spite of reactionary efforts, established gratuitous, compulsory, and secular education, the movement has had these results: It has put within the reach of all parents the means of educating their children; by the aid of scholarships it has facilitated for the most worthy pupils access to secondary and superior education, and it has given to the children of the poor, by an equality of culture, the same intellectual equipment for the struggles of life as to the children of the rich.

Of the teachers the same report says: In this work they have been "the indefatigable and devoted colaborers of the Government, one may even say its valiant champions, in view of the struggles which they have already undergone and must still undergo in many places in the effort to carry out the law eliminating clerical teachers." The report urges that it still remains for the Government, in recognition of these services, to improve the condition of the teachers as regards both salary and chance for promotion. To this end measures have already been introduced in the Chambers, but with this single reservation the general situation of primary instruction is declared to be satisfactory.

Enrollment in primary schools.—The following tables present the principal statistics of the several classes of schools included in the department of primary instruction for 1897, with the corresponding data for 1891–92 and 1887.

The relative strength of public and private schools, classified as secular and church schools, for periods from 1881–82 to 1895–96, in-

[1] Report by Maurice-Faure, chairman of the finance committee (commission du budget), Chamber of Deputies, 1899.

clusive, is shown by the distribution of pupils as indicated in the following statistics:[1]

Enrollment.

Schools.	1881–82.	1886–87.	Increase (+) or decrease (−).	1891–92.	Increase (+) or decrease (−) 1886–87 and 1891–92.	1895–96.	Increase (+) or decrease (−) 1891–92 and 1895–96.
SECULAR.							
Public:			*Per cent.*		*Per cent.*		
Boys	2,188,487	2,293,062	+ 4.8	2,274,372	− 0.8	3,768,650	+ 2.29
Girls	1,161,286	1,351,497	+16.4	1,409,716	+ 4.3		
Private:							
Boys	65,997	60,240	− 8.7	53,574	−11	130,156	−11.42
Girls	152,091	114,311	−24.8	93,367	−18.3		
Total	3,567,861	3,819,110	+ 7	3,831,029	+ 0.3	3,898,806	+ 1.76
CHURCH.							
Public:							
Boys	254,094	169,360	−33.3	36,290	−78.5	431,077	−17.63
Girls	755,389	630,649	−16.5	487,050	−22.7		
Private:							
Boys	199,932	267,023	+33.6	393,330	+47.3	1,203,628	+ 7.75
Girls	563,935	640,223	+13.5	723,703	+13		
Total	1,773,350	1,707,255	− 3.8	1,640,373	− 3.9	1,634,705	− .34
Grand total	5,341,211	5,526,365	+ 3.46	5,471,402	− .99	5,533,511	+ 1.13

It will be seen from the foregoing that the decline of enrollment from 1886–87 to 1895–96 was in secular private schools and in public schools having church teachers. The former are probably giving place to public schools; the latter are in many cases losing pupils through the enforcement of the law of 1886, forbidding the employment of members of religious orders in public schools. Of the pupils enrolled in public primary schools 48,180 were in superior primary or high schools and courses, and of those enrolled in the private primaries 8,353, or a total of 56,533 in the high schools and courses (primaire supérieur). In 1886–87 the total was 38,441, and in 1891–92 it had reached 45,599. There was then, in the first half of the decade, a gain of 23.9 per cent in the enrollment in these schools, and for the last half a gain of 18.6 per cent.

Certificate of primary studies and of superior primary studies.—The certificate of primary studies instituted originally by the law of 1836 and revived by the law of 1882 is sought by an ever-increasing number of pupils. This is the case also with the certificate of supérieur primary studies created by decree of December 28, 1882.

Year.	Certificate of primary studies.			Certificate of superior primary studies.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
1887	80,941	64,193	145,134	790	422	1,212
1892	96,412	79,263	175,675	1,132	718	1,850
1896	101,380	86,306	187,486	1,237	767	2,004

[1] Unless otherwise stated, the statistics given in the following pages are from the official reports of the minister of public instruction, viz: Statistique de l'enseignement primaire, 1881–82, 1886–87, 1891–92, and Résumé des états de situation de l'enseignement primaire, 1895–96.

The teaching corps, number and qualifications.—The number of teachers of the primary schools at successive dates was:

	1887–88.			1891–92.			1896.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Public	55,933	44,484	100,417	55,691	46,795	102,486	55,933	48,482	104,415
Private	8,698	31,948	40,646	10,672	33,516	44,188	10,920	35,056	45,976
Total	64,631	76,432	141,063	66,363	80,311	146,674	66,853	83,538	150,391

The classification of the teachers with respect to their qualification as indicated by the diplomas obtained was as follows:

Number of teachers having different grades of diplomas.

Schools.	1891–92.			1896.		
	Inferior diploma (brevet élémentaire).	Superior diploma (brevet supérieur).	No diploma.	Inferior diploma (brevet élémentaire).	Superior diploma (brevet supérieur).	No diploma.
Public:						
Men	41,889	13,456	142	39,469	16,369	95
Women	33,624	9,748	3,261	32,529	13,426	2,527
Total	75,513	23,204	3,403	71,998	29,795	3,622
Grand total	102,120			105,415		
Private:						
Men	9,099	649	924	9,504	667	749
Women	23,269	3,486	6,761	25,581	3,915	5,560
Total	32,368	4,135	7,685	35,085	4,582	6,309
Grand total	44,188			45,976		

From the foregoing statistics it will be seen that in 1891–92, of teachers in the public primary schools, 96.6 per cent had obtained a Government diploma, and of those in the private (parochial) primaries 82.6 per cent; in 1896 these ratios were, respectively, 96.5 per cent and 86.2 per cent. It should be stated, further, that the men teachers in the public schools having no diploma are, as a rule, graduates who have obtained at least the bachelor's degree.

School libraries.—Two classes of libraries, auxiliary to the school work are maintained by public funds, namely, school libraries for the use of the pupils and reference libraries for teachers.

The following statistics show the status of these libraries for successive years:

Year.	School libraries. *a*				Teachers' libraries.	
	Number of public schools.	Number of school libraries.	Number of volumes.	Number loaned.	Number of libraries.	Number of volumes.
1882	62,997	26,251	2,894,440	.....	2,470	685,651
1887	66,708	35,329	4,453,875	5,465,103	2,683	895,367
1892	67,262	39,645	4,858,120	6,862,350	2,681	1,006,421
1897	67,579	41,498	6,190,973	7,219,438	2,748	1,116,523

a Report of M. Maurice-Faure, pp. 255, 256.

The appropriations for the libraries for specified years were:

Year.	School libraries. a	Teachers' libraries. a
1887	$24,000	$6,000
1892	22,000	5,000
1895	19,000	.....
1898	16,600	4,600

a Report of M. Maurice-Faure, p. 247.

Finances.—The State appropriations for primary education were, for the years named, as follows:[1]

1887	$16,948,762
1892	24,972,751
1898	30,890,707

The total current expenditure for primary instruction (1895) was $37,890,173, equivalent to $9.02 per capita of enrollment (public primaries only) and 98 cents per capita of population (census 1896).

The increase of expenditure for the public primary schools from year to year is shown by the following:

Year.	Total expenditure.	Expenditure per capita of enrollment.
1886	$34,051,229	$5.22
1891-92	37,261,215	8.07
1895	37,890,173	9.00

ANTIALCOHOLIC INSTRUCTION IN FRENCH SCHOOLS.

By official decrees of March 9, 1897, the minister of public instruction ordered that instruction in the evil effects of alcoholic liquors should be introduced into all public primary schools and public lycées and colleges. An official circular which accompanied the decrees set forth as a reason for this action the alarming increase in the consumption of liquors and in drunkenness in France, and gave elaborate directions as to the treatment of the new subject of instruction.[2] In this circular the minister also requested the rectors of academies to report to him by the 1st of April, 1898, how his directions had been carried out, in what various ways the teachers had manifested ingenuity in introducing that instruction, and what the results had been. The returns were very full, carefully prepared, and manifested a sincere interest in the movement against alcoholism. A digest of the contents of these returns is as follows:[3]

I. EFFECT OF THE CIRCULAR OF MARCH 9, 1897.

It should be said that the school teachers had for a long time manifested a patriotic uneasiness in view of the progress of alcoholism, and had endeavored to

[1] Report of M. Maurice-Faure, p. 247.

[2] See Bulletin Administratif, March 20, 1897, pp. 382–425.

[3] From summary of the reports by M. Maurice Pelisson, Revue Pédagogique, January, 1899, pp. 22–43.

combat it. The inspector of the Académie of Haute Marne, for example, writes that the teachers in his province, living in the midst of a manufacturing and laboring population, considered it their duty to combat, by precept and example, the cause of the ruin and feebleness which they saw all about them. This disposition on the part of the teachers, however, needed direction and support. Before the date of the decrees few teachers had thought of bringing together the results of the chemical and physiological examinations of the poisonous effects of alcohol upon the organisms of drinkers and their descendants and of the social injury it exerts upon the national wealth, the vitality of the population, and public morals. Nearly all confined themselves to attacking drunkenness and showing the advantages of temperance, and their talks upon the subject, too vague and yet too limited, were also too intermittent, because no place was found for them except in instruction in morals. Many also were timid in their propaganda, because they doubted if they had sufficient authority to take the initiative. The circular and the decrees of March 9, 1897, therefore put an end to this hesitation. With a programme to guide them, the teachers could thenceforward give an extended and topical instruction, and their courage was supported by the consciousness of approval by the minister.

II. ANTIALCOHOLIC INSTRUCTION.

1. *Normal schools.*—By the decree of March 9, 1897, the teachers of normal schools were directed to introduce the new programme into their courses in morals, domestic, social, and political economy, organic chemistry, and hygiene, and they did not confine themselves to the letter of the programme, but endeavored to carry out its spirit, because antialcoholic instruction has a capital importance in normal schools, since it affects the teachers of the future, and it is necessary to impress them fully with the conviction of the greatness of the evil they are to combat. For this reason it was necessary to make this part of the course as complete as possible. Vague exhortations and practical advice for their own individual guidance are not sufficient, but higher ground must be taken, and it must be shown that temperance is an essential condition of human dignity, and that it is the duty of the pupil teachers to propagate the virtue of temperance by precept and example. All the reports show that the antialcoholic instruction was understood in this spirit by all the normal school teachers, and it appeared that they did the work enjoined upon them by the programme not only with intelligence and conscience, but also with fervor. In many departments, after the course of studies was completed, the director would review, or sum up in one view, the scattered or isolated subjects of this programme so as to make a body of doctrine of which the graduates could have an easy grasp, so as to be able to refute the arguments they would have to meet in practice, a method which is calculated to impress the whole matter firmly upon the mind. In other departments, in the pedagogical homilies which are given in the schools and are called "free talks," the teachers incessantly took occasion to call the attention of their pupils to the various points of this complex question, while in still others articles on the subject in journals were pointed out to the pupils and commented upon. Sometimes other teachers than those whose duty it was to give this instruction would give out subjects on the dangers of alcoholism for compositions. This programme was not confined to the normal schools for males, but was carried out also in those for females, the importance being pointed out of having the future mothers of families understand the evil of intemperance, and of acquiring habits of order and economy and the qualities which would keep the father and sons away from the public house.

2. *Elementary schools.*—The teachers of the present have shown as much zeal as those of the future in the normal schools in complying with the spirit of the programme and the ministerial instructions. In order to enable those teachers who

might be slightly at a loss in taking up a subject, in some respects new, to carry out their instructions intelligently, most of the academic inspectors made the question of alcoholism the subject of their pedagogic lectures or talks, and urged the primary inspectors to instruct novices on this question to the best of their ability. In these meetings they discussed the ministerial instructions and scientific reports, pointed out to the teachers the best books or publications on the subject, and indicated the best methods of instruction. In certain meetings of the cantons, too, lessons on the subject were given to a division of scholars. But the teachers did not confine themselves to the strict letter of their instructions, as may be seen from this example where the instruction was given (1) in the lessons on morals; (2) in the scientific lessons; (3) by reading extracts from the works of Steeg, Dupuy, Dr. Galtier-Boissière, and passages from Lamennais, Jules Simon, Loti, Manuel, Souvestre, &c.; (4) by reciting these passages; (5) by dictation; (6) by written exercises, and (7) by exercises in mental arithmetic, such as: "If a glass of brandy costs 20 centimes, and one is taken every day, this would make one franc in five days. How much would brandy at this rate cost in a year?" Such lessons were those of very young children, and the effort on the part of the teachers was not to surpass their understanding. No uniform hour was prescribed for the antialcoholic instruction, but the teachers were allowed to use their discretion; but the primary inspectors were in some cases required to make a report upon the work accomplished in the schools under their charge.

Besides the day schools the evening courses for adults also profited by the antialcoholic instruction, but in them, as the lessons are addressed to mature minds, and as it is not always the prevention of the habit, but a contest with habits already formed, that the teacher has to deal with, the instruction was correspondingly amplified, and assumed the offensive instead of confining itself to the defensive. In girls' schools the character of this instruction was less scientific than in the others, but the teachers impressed upon their pupils the necessity of order and taste in the household, the importance of good cooking, etc., which will tend later on to keep the young men from the public house.

Finally, clearly defined in its programme, supple in its forms, and well adapted for practice as it is, antialcoholic instruction, as it exists in the primary schools, promises much. But with these excellent qualities it must have, above all, delicacy. In saying this the object is to warn teachers against those excesses of zeal which might lead them to raise the voice and emphasize the tone in exposing the dangers of alcoholism. With the best intentions in the world, some of them have endeavored to strike the imagination and, without going so far as to exaggerate, perhaps, have painted the picture in violent and crude colors. This is not desirable, and it is not desirable to strike the imagination; at any rate, it should not be struck with a club, which might crush it, but it should rather be pricked, and so stimulated and put in motion. Here, as in many other cases, to strike hard is wrong; the proper thing is just to touch sufficiently. This is not merely a question of taste. An able teacher would never be willing to darken the youthful imagination by presenting to it pictures of too brutal a reality. In the present case such a course should be especially avoided because of the moral consequences which might result from it, as is shown in the following extract from a report: "The lessons upon the deadly effects of alcoholism make a great impression upon the children. Unfortunately many of them are witnesses of scenes caused by this miserable vice in their own homes. Their embarrassed and constrained attitudes, due, no doubt, to the fear of being looked at or even pointed out by their companions, is painful to see." This shows that unless these lessons are given with great tact and a lively sense of proportion they may sow the seeds of contempt between comrades in the same school, destroy respect for drinking parents on the part of the children, and, while inspiring a horror of the vice of drunkenness, may at the same time kill the sense of pity for

its victims, culpable as they are. So, too, there is another peril in describing the physical deterioration which alcoholism brings with it, and that is that the scholars are in danger of being guided only by selfish motives in guarding themselves against the evil. One report states that the children are mainly influenced by fear of the maladies produced by alcoholism. Finally, account should be taken of the danger of laying too much stress upon alcoholic heredity and of the injurious effect of insistence upon this point without a counterpoise. If, as an inspector remarks, it is essential to explain the consequences of hereditary alcoholism, it is equally important to show that heredity is not invincible, and that, except in the rare cases of advanced degeneracy, the children of dipsomaniacs can, if they will, escape from the paternal curse and overcome the enemy they carry with them. Education should not strengthen the popular belief, already too strong, in irresponsibility and in a fatality which is transmitted from generation to generation.

III. THE ANTIALCOHOLIC PROPAGANDA.

Antialcoholic education carries in itself a kind of propaganda, for it is evident that if we enlighten children on the dangers of intemperance it is with the idea of forming a generation of temperate individuals who, later on, will take care to preserve their relatives, friends, and fellow-citizens from the evil. The question is whether it is enough to have awakened this disposition, and whether it is not necessary to second it by a particular organization which should assemble the isolated wills and combine them into one. In other words, should not the teachers enroll their pupils into school temperance societies? It must be confessed that the appeal which has been made to teachers to form cadet sections of a central temperance society has in general met with little enthusiasm. One objection is that it is premature and even dangerous to impose an engagement upon young people which, often lightly undertaken, may be too easily forgotten and broken. There is also danger that young scholars who have been somewhat solemnly invested with a kind of social mission may become precociously important. Especially troublesome is the article of the regulations which prescribes total abstinence from strong drinks. With the French temperament and national character moderation is not an abstraction as much as the advocates of total abstinence imagine, and we must remember that, at any rate, rigorous austerity is displeasing to our race. On the other hand, it is urged that it is important to habituate children to the idea of opposition to intemperance by association, and form them for that opposition, so that, even if they do not need to preserve themselves, they may learn to preserve their fellow-citizens. These opposing views are entertained by the officials in the different departments. Yet even those teachers who are reluctant to organize their scholars into temperance societies are none the less zealous in using the resources of their schools in propagating temperance among families, and they encourage the children to talk at home about what they have heard at school on the subject, and by means of text-books and lectures, etc., which are carried home, they hope to enforce the temperance views. With the adults of the evening courses they enter into argument, point out passages in journals bearing on the subject, give lectures and draw up statistics, as was done, e. g., in a certain village where the teacher proved from data furnished by his pupils that 15,000 francs ($3,000) were spent in the public house for alcoholic drinks, the commune having a population of only 750 souls, which calculation gave occasion for a lecture on hygiene and economy which was of great effect. The teachers even extend their efforts to the entire population of their neighborhood, and invite attendance to their antialcoholic lectures, and lend the school books—entertaining ones, if possible—which are against alcoholism round about. One teacher used to hang one of his antialcoholic wall maps in the window of his school over Sunday for passers-by to read. A great number of teachers have stopped going into the cafés and public houses for the sake of the example, although they had only

been accustomed to visit them for passing the time. All their sacrifices and efforts, however, would have failed without the aid of tact and prudence. In a village, where everyone knows everyone else, it is extremely difficult to touch upon the evil effects of alcoholism without seeming to allude to some particular case which is known to all, and equal caution is necessary in those places where the principal industry which makes them prosperous is the production of alcoholic drinks. Furthermore, it is not the intention to ask the young or older pupils to drink nothing but water, because such a demand would not be heeded. A moderate use of wine, and especially of brandy, is all that can be urged. The use of absinthe, however, is discountenanced without reserve. It can never be the intention of the ministry to make the French people drinkers of water only.

IV. THE AUXILIARIES OF THE PROPAGANDA.

Among the means the teachers have employed to advance the temperance propaganda are school savings banks, which, in the department of Doubs, are organized in such a way that the funds can not be withdrawn until the depositor is 16 years old. The population is largely composed of iron workers, who are paid by the month, and who spend their earnings as soon as they get them. As boys begin work at 13, the teachers make it a point to see them on pay days and induce them to continue their savings. This serves as an inducement to deposit their money, instead of squandering it in drink. Another means is the encouragement of outdoor sports of various kinds, as in Ardèche. This serves as an offset to the attractions of less desirable amusements. Courses of temperance lectures have been organized in many places by private societies of an economic nature, but including also a society of natural sciences. Gifts of various kinds have also been made to schools by private individuals or associations to encourage the antialcoholic movement. Thus the "League" of Marseilles gave collections of lithographic plates to spread the antialcoholic principles by thousands. Similar presents were made in the departments of the Loire, at St. Chamond, at Montbrison, and in other places. The council of the University of Toulouse appropriated 300 francs ($60) for a similar purpose.

V. THE RESULTS.

As to the results so far obtained both the rectors and inspectors of the académies speak with great reserve. They deem it premature to base any opinion upon the results of a campaign which has only lasted one year, and point out that in educational matters results are postponed for a long time and that we must wait for future statistics on the consumption of alcohol before reaching any sound conclusion. This reticence does not signify that they feel any distrust of the future of the antialcoholic movement, but only shows their desire for accuracy. They do, however, recognize the fact that some progress has been made, and all the reports show some successes. A few facts in this direction are here collected. They are, to be sure, only anecdotes, but still they illustrate the fact of progress. In the elementary school it is evident that certain prejudices in favor of alcohol have been dissipated. The scholars no longer believe that alcohol fortifies or refreshes or that home made liquors are harmless, etc. They have also been led to renounce certain injurious practices. Little girls who used to bring to school bottles of water fortified with some liquor now bring only water. In Finistère children refuse to accompany their parents to the interminable wedding dinners which are a custom of the country, and in Ardennes children of 12 and 13 no longer go to the café, according to local custom, on the occasion of the fête votive. And many other facts of the same kind might be cited. In many parts of France mothers have been accustomed to give their children a piece of bread soaked in brandy for breakfast, in order to save the trouble of cooking. This murderous custom has now nearly disappeared in consequence of the antialcoholic lessons. Moreover, this movement is not confined to the children, the young men, or

their relatives, but has won its way into the general population to such an extent that the public-house keepers have seen their business diminish, and some of them have been compelled to close their places, and commercial travelers for liquor houses have been heard to complain that the schoolmasters have inaugurated a campaign that has injured their trade. All this is purely anecdotal, as before remarked, but it is encouraging for the schoolmasters, because it shows them that their labors have not been in vain.

MOVEMENT FOR PROLONGING THE EDUCATION OF THE PEOPLE.

The obligatory period of primary instruction extends from the sixth to the thirteenth year, but a child who passes the examination for the certificate of primary studies is exempt from the obligation to attend school. Candidates may be admitted to this examination at 11 years of age, and in fact a large proportion of those who seek the certificate do so at that early age. Hence the very means taken to increase the interest of pupils tends to shorten their school term. The majority of the children leave school at an earlier age than 13, and even for those who pass the whole obligatory period in school the wholesome restraints of instruction and constant supervision are too soon removed. It is also true in France, as in other countries, that elementary instruction by its natural limitations does not leave the same lasting effect upon the character or furnish the same intellectual resources as higher education.

The influence of the school [says M. F. Buisson] is fatally limited in two senses: First, it endures for a period too brief; it is only during the years of childhood. Impressions made then are vivid, people are pleased to say, and often ineffaceable, but they are never more than infantile impressions, and other and stronger influences, those of adolescence and youth, efface them. Moral influence, which ceases to be exercised just on the eve of the first communion, can easily fashion the child, but not the man. The child slips away from it at the very hour when should begin, and in fact, for the children of the bourgeois, does begin, the decisive culture whose impression will last through life.

The school is only one factor in the moral education of youth and even of childhood. If only this factor were assured of the cooperation of all the others! But more often than otherwise it can count upon their opposition. Is the school always seconded by the family? Is it so seconded ordinarily by the church? Later, how do other masters seek, and perhaps easily obtain, over the young man more influence than the teacher ever had over the child? The press (and often what a press!), the theater (and this is not the French theater), the street, the shop, the tavern, the public ball or the café concert, the allurement of companions, of example, of fashion, of juvenile fanfaronade, the brutal incentive of passions, afterwards of self-interest, at every age, the successive passions which arise and speak more loudly than reason, in these behold seductions other than those of schools.

The condition of the young people of the laboring classes thrown thus upon the world with meager attainments and without preparation for any particular industry has long excited the serious attention of the Government and of public-spirited, earnest men and women throughout the country. The recent vigorous movement for extend-

ing the provision for adult education is the outcome of this solicitude. Schools or classes for adults have been maintained in France by the Church or by private efforts for nearly two centuries.[1] The responsibility of the State in this respect has also been recognized from time to time by legal enactments and by public appropriations for the work. This went on fitfully and without satisfactory results until 1877, when M. Gréard proposed measures for systematizing the work in Paris. At his suggestion, courses of general instruction were separated from technical courses for apprentices; the former were graded in three classes—elementary, intermediate, and superior. A diploma, or special certificate of primary studies, was created, open to pupils of at least 16 years of age. Finally, an annual gratuity of 600 francs was assured to the teacher in place of a grant calculated upon the average attendance at his class.

In 1884 a decree was issued by the minister of public instruction authorizing every commune to establish a class for adults, the expenses to be borne half by the State and half by the commune. With this assistance, and animated by the example of the capital, adult classes were formed in the principal cities.

The growing sense of public responsibility with respect to the masses has greatly increased interest in this provision, and classes for the benefit of youths above the school age and for adults are multiplying on every hand. The Government has given substantial aid to the cause. In 1895 a special investigation was ordered, with a view to obtaining complete information as to the status of the work and to determining the means for extending and improving it. This commission was intrusted to M. Édouard Petit, a professor in one of the Paris lycées and an indefatigable promoter of the cause of adult education. He found teachers and professors everywhere alive to the importance of the effort and ready to give their aid in establishing and maintaining classes. Numerous private societies entered into the work with great spirit, and in 1895 the Havre society for "Instruction by Objects" (enseignement par l'aspect) celebrated its fifteenth anniversary by calling a congress of all the societies engaged in promoting popular education to consider the subject of the systematic instruction of adults and adolescents. The minister of public instruction presided over the congress and the resolutions of this body have shaped in a measure the subsequent official regulations. These schools and classes, which are held generally in the evening, sometimes on Sunday, offer courses of instruction for illiterates, review courses, and continuation courses. The last named have usually a technical or industrial character and prepare the student, especially in the rural communities, for agriculture and other pursuits. The local adaptation of the courses is carefully studied, and also their relation to the age

[1] See Report of Commissioner for 1894–95, vol. 1, pp. 298–305, and Report for 1896–97, vol. 1, pp. 53–56.

and economic condition of the students. Civic instruction has a large place in the programmes, and the subject is much more thoroughly treated than is possible in the primary schools. The students in general show deep and earnest appreciation of the opportunities thus afforded. The growth of the work is plainly shown by the following statistics:[1]

Number of regular public courses.

Year.	For men.	For women.	Total.
1894-95	7,322	966	8,288
1895-96	13,970	1,808	15,778
1896-97	20,099	4,429	24,528
1897-98	22,939	7,429	30,368
Total	64,330	14,632	78,962

To the total given above should be added 5,000 classes maintained by chambers of commerce and private societies, and also 1,600 "réunions" of young girls held in the schools on Thursdays and Sundays.

Attendance upon the courses.

Year.	Number enrolled.	Number of regular attendants.
1895-96	400,000	270,500
1896-97	700,000	417,481
1897-98	850,000	482,907

These courses are supplemented by popular lectures, illustrated usually by the stereopticon. From Paris, where this feature was introduced by the "Ligue de l'enseignement," it has spread, little by little, through the provinces, and has helped to bring to the attention of the common people the beauties of classic art, picturesque and impressive scenes of nature, or events in history, and even scientific facts.

The number of popular lectures reported year by year is as follows:

1894–95	10,379
1895–96	[2]61,476
1897–98	[3]117,752

The rapid extension of the classes and lectures is due, in great measure, to the support of the Government, but it should be remembered that the first impulse came from private sources and the greater part of the expense is still defrayed from private funds.

The sums expended in this work by private societies, namely, societies for popular instructions, associations of former pupils, chari-

[1] Report of M. Édouard Petit for 1897-98. Revue Pédagogique, December, 1898, pp. 477-484; January 1899, p. 52.

[2] 14,000 illustrated.

[3] 50,052 illustrated.

table associations, is not reported. The subscriptions from individuals amounted, in 1897–98, to $40,824; the receipts from fees to $8,340; municipal grants to $306,748; grants from departmental councils to $10,800; subvention from the State, $30,000.

The State appropriation is used chiefly in providing awards for the public school teachers who give their services to this work. These awards take the form of medals, prizes, increase of vacation, and supplements of the salary.

The effect of public instruction in diminishing illiteracy is shown as follows:

Proportion of illiterates. (*a*)

Year.	Conscripts.	Newly married—	
		Men.	Women.
1870	.....	26.8	39.4
1880	14.4	16.1	24.5
1887	10.2	10.7	17
1892	6.9	8.1	12.2
1895	5.4	6.3	9.4
1896	5.3	.....	.....

a Report of M. Maurice-Faure, 1899, p. 251.

THE DEPARTMENT OF SECONDARY EDUCATION.

The system of State secondary education in France has been the subject of repeated attempts at reform from the downfall of Napoleon to the present time. To the problems that everywhere present themselves in respect to this department of education, there are added in France peculiar complications arising from the central control of the schools and the extreme conservatism of the educated classes.

The purpose of the present Republic to infuse new life into the State lycées and colleges has been shown by successive measures, giving increased freedom to principals and professors with respect to the conduct of studies and the internal discipline of the secondary establishments.

The professors on their part have been stimulated by these measures to a livelier interest in their professional work and relations.

Congresses of secondary professors.—This was particularly shown in 1896 by a movement for bringing about conferences of the professors engaged in this department. A memorial was addressed to the minister asking his authorization for a congress of the professors. This was granted with certain restrictions. It was decided that the deliberations of the congress should be limited to pedagogical and personal questions, with avoidance of those pertaining to the administration, and that the programmes of this and other similar congresses should be submitted in advance to the minister, who reserves the right to eliminate questions of which he disapproves. In accordance with this

authorization, three general congresses of the professors of the lycées and colleges have been held. Full reports of the first and second congresses have been published, from which it is seen that the deliberations were kept strictly within the prescribed limits. The subjects that were uppermost were the organization of societies of professors for mutual support and insurance; university extension, and the means of giving greater recognition to the assistant professors of secondary education. A noticeable feature of the second congress (held in 1898) was the presence, for the first time, of delegates from the lycées for girls. The third congress, held in April of the present year, was organized in three sections. The first considered questions of discipline, of moral education, and of the examinations for the public scholarships offered in the lycées for girls; the second section examined principally proposals with respect to the examinations for the bachelor's degree; the third considered the province of students' associations. This section submitted also proposals respecting university extension and the organization of an international congress to be held in 1900 in connection with the Paris Exposition. The maintenance of the existing baccalaureate was approved by the congress, but it was urged that the composition of the examining jury should be changed. It was originally proposed that the programme should include discussions of the questions entrusted by the Chamber of Deputies to the commission on secondary education, but this subject was eliminated by the minister, who held that the commission itself afforded full opportunity for the professors to be heard on the questions at issue.

Commission on secondary education.—The latest official action with respect to secondary education is the appointment of a commission by the Chamber of Deputies to examine the several measures proposed for the reform of the existing system and the conditions that have given rise to these.

The commission has submitted a voluminous report of the depositions presented before it in its sessions from January to March, which cover every phase of the problem of secondary education as it has developed in France.[1]

In the introduction to this report the commission indicates the scope of its inquiry, the conditions that have called it into existence, and the

[1] A commission appointed by the Senate to examine the project of law for the reform of secondary instruction, submitted by M. Combes, former minister of education, has just issued its report, which bears the name of the secretary, M. Pozzi. The document is received as this goes to press. It appears that the commission recommends the adoption of the bill by a vote of 5 to 4 members. The bill proposes to do away with the baccalaureate and to substitute for this an examination of maturity to be held within the school (lycée or college) whose course the candidate has followed. The examining body is to be composed of secondary professors, but presided over by a university professor appointed by the minister. A similar examination is proposed for private institutions before an examining committee to be formed by the minister of public instruction. The bill and the report of M. Pozzi have already excited intense discussion. The measure proposed, if adopted, would radically change the nature of secondary education as constituted in France.

trend of opinion with respect to the questions at issue. This introduction is here epitomized.

The programmes and time-tables of the secondary schools and the system of examinations have all been examined, it is stated, with reference to certain essential points. On one side there is a demand for the reform of the baccalaureate and the granting of the same sanctions to the modern as to the classical course; hence, the character of the modern course, its purposes, the length of time to be given to it, should be considered. On the other side, there is a question as to the classical course, whether it should be made uniform, at least up to the class of rhetoric (the last but one of the lycée course) for all students, for those who desire the most thorough literary training as well as for those whose preference is for a scientific career. The suppression of the special course (instituted in 1865 by Minister Duruy) is regarded on all sides as having sensibly diminished the number of students seeking to enter the lycées. It is thought that families should be able to choose between the classical course and a course shorter and better adapted to the needs of various regions. The programmes, says the report, are, in general, severely criticised; they tend, it is urged, to crowd the young mind with too many subjects learned superficially, to weaken its inclination for independent effort and its scientific curiosity.

The reforms which have been already introduced in the lycées and the colleges have not settled in any definite manner the questions pertaining to the management of the boarding departments of the lycées, the conduct of physical training, and the relations of the tutors (répétiteurs) which at present are very unsatisfactory. There must be, it seems, some means of uniting and associating more intimately all those who are charged with the duty of forming the mind and the character of the young.

The administration (university) is convinced that the lycées should be freed from that excessive centralization which has destroyed their individuality, paralyzed the personal initiative of principals and professors, and reduced them to the state of mere functionaries, too much isolated from each other and having no close union either with the schools or with the region to which they respectively belong. It is desirable that the lycées and colleges should have a certain autonomy and moral responsibility; that the diverse orders of instruction should cultivate more intimate relations with each other. There is in this respect a general tendency of opinion to which, without doubt, the renaissance of the universities has contributed and which is worthy of serious consideration.

The commission was unanimous in the opinion that the time had come for making the inquiry as to the state of secondary education as comprehensive as possible, and the Chamber of Deputies was pre-

pared to give it full authority in this respect.[1] Such inquiries are, it is urged, extremely useful when they are timely and well conducted.

[1] QUESTIONS SUBMITTED BY THE COMMISSION.

I. *Statistics of secondary instruction.*

Variation in the number of students in the public establishments for the period 1879–1898, the number in the lycées and in the colleges to be given separately, distinction also to be made between the number in the classical course and in the special or modern course and the number of day students and boarders.—Variation during the same period in the number of students in private establishments; giving separately the number in classical courses; in special or modern courses; in schools preparing for the bachelor's degree; in "petits séminaries" (preparatory to divinity schools).—Probable causes of these variations.

II. *Administration of the lycées and colleges.*

Direction of the institution.—Manner of nominating the principals.—Necessity of increasing their authority.—The value of conferences of professors and assistants (répétiteurs) and the disciplinary councils.—Should a certain autonomy be given to the lycées and colleges?—Is it desirable to establish in each lycée and college a council composed of representatives of the professors and former students as a means of strengthening the bonds between the institution and the region to which it belongs?—What should be the functions of that council?

III. *Education.*

Conduct of the boarding department.—By what means may the interest of professors in the work of education be increased?—Status of the tutors (répétiteurs).—Is it possible to give them larger responsibility in respect both to instruction and education?—Physical education.—Liberty and responsibility.—Government of the older students.

IV. *Organization of the teaching corps.*

What measures should be taken for improving the professional preparation of professors?—Competitive examination for fellowship (concours d'agrégation).—Value of a university course.

A. *Classical course.*—Should it be extended or abridged?—To what extent?—What should be the normal duration of the course?—Are the programmes overcrowded?—How should they be lightened?—Should certain subjects be made elective; for example, Greek?—How far should the programmes be adapted to local conditions?—What should be left to the initiative of the professors and of the councils of the respective establishments?

B. *The modern course.*—Is there a place for this course?—What should be the normal duration of the course?—Should the programme be modified?—What is your opinion as to the uniformity in the plan of study and the programmes of this course?—Results thus far accomplished by the course.—For what careers are the students who follow this course destined?—What proportion intend entering upon industry or commerce?—What proportion the public service?—Should the teaching force be distinct from that of the classical force?—How should it be recruited?

C. Relations of secondary instruction to primary instruction and to technical instruction.—Is it desirable that pupils should not enter the lycées or colleges until they have passed through the primary schools?—Should the superior primary course be correlated with the modern secondary?—Is it desirable to modify the programmes of the superior primary schools so that pupils may pass from these to the higher classes of the modern secondary course?—Statistics of technical instruction.—Results accomplished.—Of the competition of the technical schools with the lycées and colleges.—To what extent can technical instruction be given in the lycées and colleges?

D. *Study of the living languages and drawing.*—Would it be possible to give a practical character to the study of the living languages by arranging for pupils to study for a while in foreign countries?—Local adaptations of the courses in foreign languages.—Importance of instruction in drawing reforms needed.

V. *The baccalaureate and examinations.*

Should the baccalaureate be suppressed?—Of the substitution of a certificate of studies and of transition and leaving examinations (examens de passage et de sortie).—Should the method of the examinations be changed?—Should the diploma of the modern course admit one to the faculty of law and the faculty of medicine?—Is it expedient that the scheme of examination for admission to the special schools (i. e., of engineering, electricity, etc.) should be arranged with the concurrence of the university?

VI. *General inspection—scholarships.*

Should the general inspection (that is, the examination by the State officer) extend to the entire secondary school considered as a unit or only to the work of the individual professors?—Means of correcting the defects of the inspectorial service.—Secret notices.—Scholarships (bourses d'études).—How should they be given?—Is it possible to follow the careers of students who have held these scholarships after their studies terminate?—How many intend entering the public service as teachers or other civil officers?

They are not valuable solely for the information collected—they serve further a moral purpose; they prepare the way for reforms by exciting the interest of the entire country, and by obliging those upon whom the success of the reforms depends to give them careful examination.

Under this conviction the commission sought to obtain the testimony and advice of persons experienced in the administration of secondary education or in teaching in this department, and also of those who are best able to judge of its needs and tendencies and competent to suggest practical measures for its improvement. The volume submitted contains the verbatim reports of depositions heard by the commission. A second volume will present the analysis of the written depositions. As to the recommendations of the commission, these will not be submitted until after conference with the Government and ample deliberation. It should be observed that the inquiry thus far relates merely to secondary education for boys; a distinct inquiry will be made into that provided for girls.

The detailed information and the body of opinion collected by this commission are scarcely of interest outside of the country to which the matter pertains, but the existence of the commission and the ultimate outcome of the inquiry are matters of universal interest, since in every country the question of secondary education is uppermost at this moment, and each may gain some light from the experience of others. A survey of the evidence thus far collected gives the impression that the demand for a more elastic course and a broader conception of education than now prevail in the French lycée has become irresistible. Nevertheless, there were not wanting authoritative voices for adherence with very slight modifications to the established system.

The following discussions and depositions from the report of the commission give a full understanding of the existing system of secondary education, of the points to which criticism is chiefly directed, and also the opinion of eminent men as to the reform measures which are desirable or feasible.

It should be remembered that the term secondary education as used in France is not synonymous with the same expression as used in this country. Boys enter the preparatory class of the French lycée about eight years of age, and complete there the full course of liberal or general education. The course covers nine years, excluding the preparatory class, and is completed by the examination for the bachelor's degree conducted by university professors. Superior or university education, which follows secondary in France, is highly specialized.

Variations in the attendance upon secondary schools.—M. Gréard, who in his long service as vice-recteur of the chief académie, that of Paris, covering nearly the entire period of the Republic, has had ample

opportunity for studying the course of events, dwelt particularly upon the variations in the attendance upon the lycées and colleges. Comparing the enrollment in secondary schools for 1896 and 1897, M. Gréard noted in the State lycées a decline of 863 students and an increase of 188 in the local (communal) colleges, or altogether in the State schools a decline of 675 pupils. The private secular schools lost in the same time 786 pupils, while the church schools gained 3,682. He omitted in his consideration the "petits séminares," which are hardly comparable with the other schools because they are intended especially for students who will ultimately prepare for the priesthood.

It will be observed that the gain for the church schools, 3,682, exceeds the combined loss in the State and private schools (1461) by 2,221. It is not probable that all the students who were lost to the State and private schools entered those of the church, but in any case there is the gain of 2,221 to be accounted for. The chief explanation, according to M. Gréard, appears to be this: A certain number of the superior primary (high) schools belonging to the church have been transformed into secondary schools of the modern type. In preparation for the change their principals have passed the necessary examinations and secured the sanctions required by the State. These schools have attracted a large part of the students who have withdrawn from the State schools in which the classical course predominates.

In Paris the decline in attendance upon the lycées and colleges from 1896 to 1897 was very slight; in the following year, 1897–98, it was greater, the loss being altogether 299 pupils. On the other hand, the lycées and colleges of the departments of the Academy of Paris (excluding the capital) gained 251 students; many of these it is known have been drawn from the schools of the city. This leaves a total loss of 48 pupils from the State schools of this academy on a total of 17,550.

The opinion expressed by M. Gréard that the decline in attendance upon the lycées is due to the preference for courses of instruction more closely related to the needs of modern industry is reiterated also by Catholic educators. Brother Justinus, general secretary of the institute of the Christian Brothers, discusses the movement toward modern or practical courses in his evidence which is given in full, farther on. The Abbé Batiffol, rector of the Catholic Institute of Toulouse, shows that in his district, which includes sixteen dioceses of the middle region of France, there has been a great falling off in the attendance upon the church secondary schools. This change he attributes to the following causes:

(1) The tendency of parents to keep their children in day schools or under private teachers until the age of confirmation; that is, 11 or 12 years.

(2) The diminishing birth rate in families in comfortable circumstances.

(3) The economic crisis in the middle region of France caused by the destruction of the vine, a series of poor harvests, etc.

(4) The tendency of rural proprietors to withdraw their children from the secondary schools and place them in boarding schools maintained by the religious orders that devote themselves especially to the work of preparing their pupils for commerce, agriculture, and manufactures.

The statistics cited by M. Gréard are taken from tables submitted to the Chamber of Deputies by the chairman of the financial committee, 1897 and 1898.[1] They have been already published in previous Reports of the Commissioner of Education,[2] and are here reproduced for convenience of reference, together with statistics for 1887.

Enrollment in secondary schools.

Classes of institutions.	1887.	1892.	1893.	1894.	1895.	1896.	1897.
State schools:							
Lycées	a 53,816	52,945	53,974	53,490	53,962	53,290	52,427
Colleges	b 36,086	32,508	32,709	32,421	32,161	32,224	32,412
Total	89,902	85,453	86,683	85,911	86,123	85,514	84,839
Church schools:							
Classical	50,085	51,087	51,377	56,265	57,250	58,506	62,188
Petits séminaires	.....	23,948	23,849	25,354	25,407	21,737	22,381
Total	c 50,085	75,035	75,226	81,619	82,657	80,243	84,569
Private secular schools	c 20,174	16,306	14,028	14,214	12,011	13,599	12,813
Total non-State	70,259	91,341	89,254	95,833	94,668	93,842	97,382
Grand total	160,161	176,794	175,937	181,744	180,791	179,356	182,221

a Statistique de l'enseignement secondaire des garçons, 1887, p. lvi.
b Ibid, p. lxxviii. c Ibid, p. xcviii.

The transfer of pupils from one to the other class of schools is not wholly a movement of the last half decade. M. Levasseur, the eminent statistician of France, cited in his deposition before the commission the data given in the Annuaire Statistique de la France, 1898, which show the movement of students in the lycées and colleges since 1831. According to this information, the attendance upon these schools rose rapidly from 1831 to 1880, being 37,000 at the former date and 85.000 at the latter. Since 1880 it has remained nearly stationary. The lycées, it appears, continued to increase their enrollment from 1840 to 1891, since which time it has fluctuated a little, the number of their students ranging between 52,000 and 53,000 (52,630 in November, 1897).

The local colleges (colléges communaux) reached their maximum attendance in 1880 (40,000 pupils) and declined from that time till

[1] Rapport fait au nom de la commission du budget, etc. Service de l'instruction publique par M. Bouge, député, 1897, pp. 124, 125; Le même 1898, pp. 32, 33.

[2] Report 1896-97, vol. 1, p. 39; 1897-98, vol. 1, p. 703.

1890, since which their attendance has varied but little (in 1897 it is given as 32,740). The latest statistics of private establishments cited by M. Levasseur (viz, for 1897) give their total attendance as 70,136, nearly the same as the number tabulated above.

The discrepancies in the statistics from different sources are not great and would hardly excite attention but for the political interests which seem to depend upon the relative influence of the state and church schools. One measure of this influence is the actual attendance upon the two classes of schools; hence the commission has undertaken to secure the latest and fullest statistics under this head, which will be published in their later report.

[From deposition of M. Berthelot, permanent secretary of the Academy of Sciences; professor in the College of France; former minister of public instruction.]

Defects of the lycées.—As to the lycées and colleges, there are certain questions in respect to which I do not agree with many other eminent members of the teaching profession, and I have repeatedly expressed my opinion in the superior council of public instruction. I consider that our lycées are much too large, they have too many pupils, and this is one of the chief reasons why the principals and directors can not exercise a personal influence either upon the pupils or the professors. I mean that twofold influence, moral and intellectual, which should be the first and the most important of their duties. They are absorbed in the control of the administrative machine. We have constructed lycées to accommodate as many as 1,200 boarders. This is a moral and financial monstrosity.

When a lycée has 1,200 boarders, in addition to hundreds of day pupils, it is encumbered. To maintain order it is necessary to adopt narrow, rigorous rules, as in a barrack. In such a case it is impossible to do anything except to follow blind tradition, keeping at every point close to precedent. Whatever be the ability of the directors, they are powerless to effect any reform or make any real innovation, or to transform the general organization of their establishments.

These evils have been still further aggravated by the institution of the modern course side by side with the classical in the same lycée. This course really required an independent and distinct direction. It is almost impossible to practice in the same establishment several methods of instruction. The result could easily be foreseen: It was simply a similar organization for the classical course and for the modern course. This at once rendered it impossible to do anything for the reform of the classical instruction or for the introduction of new systems which should have been adopted for the modern instruction.

I would insist at the outset that the "effectif" of a secondary school, especially of a lycée, should not exceed 400 or 500 pupils, boarders and day pupils both included. Further, I should desire that each lycée should have a definite purpose; that a lycée intended for classical instruction should have nothing to do with the modern course; otherwise classical instruction is paralyzed and the modern struck with sterility.

[From deposition of M. Lavisse, member of the French Academy; professor of the Faculty of Letters; leader in university reforms.]

Defective administrative system.—If our secondary instruction is not in the midst of a real crisis (the word is perhaps too strong), it suffers from evils of which the causes are, on the one hand, political and administrative, on the other pedagogical.

The political causes are these: Secondary education is no longer governed from above, or, to speak plainly, the minister of public instruction is absent. The ministerial influence is not felt, first because the minister does not retain the office long,

and, further, because that, with the exception of two or three ministers to whom we are greatly indebted, he is wholly occupied with other affairs. The hand that works the springs slips away; the springs work badly and unbend.

Let us illustrate: The general inspectors are agents of transmission and information. It seems that at the moment when they are about to go to their circuits the minister ought to call them together to give them instructions, and to assemble them again on their return to question them and receive their information. I was for twenty years attached to the cabinet of M. Duruy, and he always called the general inspectors together in this way. To-day the general inspectors start out without any general understanding as to the directions they should give. It may happen, and it does happen, that general inspectors of the same order of studies succeeding each other in the same class at the interval of a year give directions absolutely contradictory to each other.

The defects of the general inspection are serious. The inspection is hastily made and rarely extends to an entire institution. When an establishment works either well or ill it is necessary to know the reasons. But the inspectors report only their individual observations, which are just sufficient to discuss the question of giving promotion or the academic palm to this or that person.

The influence of the local authorities, rectors, academic inspectors, is no longer felt in secondary instruction. Since the constitution of the universities the rectors are greatly occupied with higher education; the academic inspectors are almost entirely absorbed in primary education. For my part I should not regret this weakening of authority if we had organized liberty. Now, we have the appearance of this organization—a complete hierarchy of councils; councils of professors in the lycées, academic councils in the chief towns of the academies, and near the minister the superior council of public instruction. But the councils of professors, for reasons to be hereafter considered, have no real life; they are nearly useless. I know, moreover, nothing more useless than the academic councils; these are assemblies before which reports are read. The superior council has many defects. It is too strictly professional. The sessions are too crowded, particularly with disputed and disciplinary matters. They are short; it is necessary to drive, to hurry. Often the council simply records what has been prepared and determined by the administration. Rarely does a member have the satisfaction of feeling that good work has been accomplished. In short, this council has not fulfilled the hopes that it excited at the beginning.

We are, then, afflicted in the University of France with a false parliamentarism. Thus there is neither on the one hand authority, nor on the other liberty. This is a system altogether peculiar, mixed, spurious, and which is of itself sufficient to account for all the evils from which we are suffering.

For these evils what would be the remedies? Greater stability in the ministry; more attention on the part of the minister to our affairs which well deserve this consideration; the reorganization of the councils. I do not insist upon the last point, because propositions for the reform of the councils are to be submitted to Parliament.

[From deposition of M. Michel Bréal, professor in the College of France and member of the Institute.]

One of the first questions in your inquiry is that of the fluctuations in the number of pupils (secondary) and the diminution of the number in the State lycées. I am not sure that there has been a diminution, but it is certain that there has been no such increase as might be expected considering the importance given to education during the last fifteen years and the money spent in the interest of pupils.

I believe that the administration (university) has reason to inquire if it is not itself in part to blame for this condition, if errors have not been committed although in good faith and with the most sincere desire to do the best thing.

The first mistake has been the want of permanence in the programmes.

Upon this point I will dwell for a moment, because I have studied the matter very closely. For sixteen years I was a member of the superior council and of the permanent section of the council. I have seen the different programmes succeed each other and have known the reasons given for each of the changes. In the light of this history it is easy to understand the present conditions.

In education a degree of stability is essential; a bad programme maintained a certain time improves itself, but if changes are too frequent there is not time for improvement. Good programmes may spoil each other by too rapid succession.

This history commences in 1879 with the ministry of Jules Ferry, for whose name I desire to say I cherish great respect. In 1880, at the time the programmes were adopted, M. Ferry and the ministry were advocates of a uniform education—that is to say, of the same single course for all students, or at least for the proportion of students.

This had become a difficult matter, above all for an era like ours, when secondary education is no longer the privilege of a particular class of the people; but it was rendered still more difficult from the fact that the programmes necessarily had to be prepared, discussed, and adopted by the superior council.

The superior council is composed of men all distinguished in their specialty and all moved by the best intentions; but that occurred which was to have been expected; everyone tried his hand at the programmes, each wished to include what he thought best.

In this superior council all ideas were represented from those of members who, like M. Boissier and myself, held that the classical studies (as conducted in the lycées) were too superficial, especially in comparison with Germany, and that they should be made more thorough to those who believed that Latin and Greek had had their day and that it was necessary to replace them by more modern subjects.

The superior council naturally endeavored to please everyone; it adopted a mean; it tried to put into the plan of studies everything that was recommended. In this way the programmes of 1880 were made. These resulted in what has been called surcharge of the programmes and the overpressure of students. The surcharge of the programmes is a reality. As to the overpressure of the students, I do not much believe in it, because the students do not overexert themselves. The subjects have greatly increased, but the pupil finds the way (and, on the whole, this is well) to take only what he is able to master. Here I may mention a circumstance that has greatly increased the overcrowding. I refer to the suppression of two years of Latin. Latin had been commenced in the eighth class, the superior council decided that it should be deferred to the sixth. As a consequence, of the eight years of Latin, two were suppressed. This was a great deal.

As the exercises of the different classes were kept very nearly at the same level as before the suppression, the students who reached the fifth class after one year of Latin were expected to know as much as was formerly acquired in three years. Then they suddenly began the study of Greek. This suppression of two years of classical study is mainly the cause of the overpressure. To this cause also is due the decline in the number of students—for many parents regarded the lycées as the school for Latin—hence the children were entered one or two years later.

I opposed this measure; but, nevertheless, I have been reproached with having supported the very proposal that I resisted with all my force. Such is the curious course of popular justice.

This measure wrought disorder in the classes. Professors of the sixth class found themselves suddenly professors of the former eighth, and so it was through all the classes.

The professors accepted the reform with regret. They saw in it the decline of education. This was beyond doubt one cause of the failure of the reform of 1880.

After the lapse of several years, about 1886–87, the discontent echoed everywhere, by the press, became so evident that changes were demanded. The superior council yielded to the new demand and began the search for another plan.

It was then recalled that during the Empire, under the ministry of M. Duruy, a special course had been created (enseignement spécial) which was intended for a particular class of pupils. This special course still existed nominally, but it had been nearly forgotten, or at least was not mentioned; it had even been said in 1880 that it was destined to disappear.

The discussions that had taken place in 1865 were then recalled and this special instruction examined more carefully.

It must be said that it was admirably planned by M. Duruy. This able minister comprehended that a new course would require a special personnel and he created a special normal school at Cluny. The programmes were excellent. They were arranged for a short term of years, since the pupils intended for commercial and industrial careers could not stay forever at their studies. The course was terminated by a simple examination within the schools which entitled the successful candidate to a certificate. A word should be said respecting the name—special course (enseignement spécial) which has been much criticised. The real name was special course for commerce, industry, and agriculture, but as this title was long common usage shortened it.

So long as the original purpose was kept in view the school of Cluny was maintained, though poorly. But other ideas prevailed in the ministry. Instead of strengthening the special course, they changed its nature. They sought to make a second classical course equal to the first, with the omission of Latin and Greek. To this end the title was changed from special course to modern course (enseignement moderne).

I regret to say that this was not a fortunate endeavor. The result was foreseen because the motive of this reform was not to create a distinct course with its own appropriate character, but rather to set up a rival course to the Latin, drawing off a portion of its students by the hope of an easier course leading to the same end. It was no longer like the course created by M. Duruy, a course intended to form a class of pupils having different habits of mind and a different view of the world; on the contrary it was intended to prepare pupils for the same careers as the classical course. This view is confirmed by the character of the programmes; these have been made to conform as closely as possible to those of the classical course. As there were two languages in the classical course, Latin and Greek, two living languages, German and English were included in the modern course. In the little time allowed in the lycée, who can master two difficult living languages? If one is really acquired it is a great deal. The classes are also named the same as those of the classical course; there is the sixth classical and the sixth modern, and so on. They are made as nearly alike as possible. The school at Cluny has been abolished and professors appointed for both courses who have had the same preparation. It would seem that a professor of classical studies would naturally regard students of the modern course as a little inferior. Moreover, a bachelor's degree was instituted as the crown of the modern course, requiring only one year less of study than that given in the classical course. Thus the character of the special course was completely changed. The modern course, although the younger brother of the classical, very soon assumed to equal, perhaps even to replace it.

You will readily see, Mr. President, from my presentation of the case that I am not in favor of the equality of the diplomas. I believe it was a mistake to create two roads leading to the same end. It does not seem to me that we have too few officeholders. To create a second baccalaureate, less difficult in appearance at least than the others, is merely to open a new road to public office, to double the number of candidates. For what is there to prevent pupils of superior primary (public high)

schools from obtaining this diploma. They also learn the living languages, the best of them know enough of science, so in a few years the flood of candidates will be more than doubled. For young men of ability, who would have no difficulty in learning the little Latin and Greek that is required for the classical diploma, it was not necessary to open a new course which, being shorter by one year and in appearance easier, would naturally attract toward the public service a class of persons who heretofore had no thought of entering it.

On the other hand, the special course suffered a disadvantage which affects the modern course also. In order that any course should develop and prosper, it must have a building of its own, and its own principal, whose ambition and self-interest it absorbs and whose entire time and effort are given to it. M. Duruy wished to establish new schools for the special instruction, but as you well know the Chambers were at that time niggardly in their support of public instruction. It was useless to think of asking them to make sacrifices for the creation of new schools. This was fatal to the new course; it will doubtless be the same in the future. A principal can not devote himself at one and the same time to students who are destined for classical studies and those who have in view agriculture, the sciences, or colonial careers. It was financial difficulties that caused the juxtaposition of the two courses. But there were also two other causes which you well know, but which it is necessary to recall, because they will be felt equally in the future. The first was the boarding department (internat); the cost of this diminishes as the number of scholars increases. It is in the interests of this department that the new courses which have been created from time to time have always been placed in the old establishments. Thus the system of boarding has prevented the development of education in France. The second reason is political. The desire has been to unite all young students, in order that the different classes of the population should know and be associated with each other. This was the idea in the creation of the lycées. Napoleon wished that all the youth, whatever their origin, should be brought in contact with each other in the lycées. The idea could be realized with little difficulty, so long as all received the same instruction. But in proportion as new courses were created, and the population of the lycées became more varied, union became more difficult, and the political end was defeated.

These causes are not strictly educational, but they should be considered by those who have the care and responsibility of the future. To dwell a little longer on this subject, I will say a word on this question. Can the course of the superior primary school be made the vestibule to the modern course? Certainly; if we consider the programmes, the difference between the two seems slight. Both include German, English, and the sciences. But there is a difference in the class of pupils; the superior primary course is gratuitous; in the modern course fees are paid. It follows that different classes of the population follow these two different courses. The difference is found here and not in the programmes. In the ministry of public instruction the tendency is to work upon the programmes; but back of these are to be considered the classes of the population to whom they must be applied.

Still another word on this point. The future of the colonies is much discussed. Very well; if the purpose is to train young people disposed to go to the colonies to promote their prosperity, the effort must be made with those who frequent the lycées. This is evident, since to be a colonist with some chance of success, a certain capital is necessary. The pupils of the superior primary schools will indeed go to the colonies, but they will go as laborers. Hence we see why it was a mistake to give to the special course the literary character which it now has under the name of modern.

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Remedies suggested.—When a mistake has been committed it is not easy to go back and correct it. I believe, however, that something can be done. It would be possi-

ble, for example, to give up a second living language. Then the programme of the sciences should be increased. Although I am not a man of science, but a literary man, I believe that in this modern course it is above all things necessary to develop the sciences. It would be difficult to suppress the baccalaureate of the modern course, since it has been established, but it should have a very practical character, so practical that the thought of making it preparatory to the schools of law and of medicine would never arise. It is necessary to insist upon that knowledge of geography, of chemistry, of natural history, of mechanics, which every good agriculturist, trader, or navigator ought to possess.

Question. (By the PRESIDENT.) You would then return to the original conception of M. Duruy?

M. BRÉAL. Yes, so far as possible, considering that formerly this was a course limited to two or three years, and that to-day it is a longer course, terminated by a bachelor's degree.

Question. You would advise that Latin and Greek should both be retained in the classical course?

M. BRÉAL. Yes; as does M. Boissier.

Question. You would not allow Latin for only a portion of the students, as is done in Germany?

M. BRÉAL. This is the modern course.

The PRESIDENT. Plus Latin.

M. BRÉAL. Our classical course deprived of Greek would become the equivalent of the inferior course in Germany. Once eliminated from certain lycées, Greek would soon disappear everywhere and we should fall to the level of Spain. For one of the peculiarities of Spanish education is this, that while in that country they retain Latin they have dropped Greek. This is not a model for us. We should be careful not to impair our classical studies any further; they have already lost so much that this would be the sign of their final ruin.

The PRESIDENT. But some persons, M. Gréard for example, think that the best means of saving the classics is to reserve them for a small number of students and limit them to certain designated schools. At the same time they would open public careers more freely to students who do not pursue the classics; relieve them of the dead weight which hampers them to-day. This is a view that has been set before us.

M. BRÉAL. This is an illusion that for sixteen years has deceived us in the superior council. Every time that something has been taken out of classical education it has been said that it would be the better for the change.

The PRESIDENT. But it is not proposed to take away subjects, but pupils.

M. BRÉAL. This is what was said when the modern course was created.

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The PRESIDENT. In your books you have discussed the régime of the lycées. You have complained that the principals had too little freedom, even in respect to petty details, and that this was fatal to their initiative. You have said that in Germany the directors of the gymnasiums had much more authority; they determine the books to be used, the hours of work; they may even change the programmes to a certain degree. What should we do in this respect?

M. BRÉAL. We should give more liberty to the principals; but liberty is merely a word. We should allow them the control of a certain part of their funds. Otherwise their best ideas are simply set forth in letters to the ministry where nothing is done beyond classifying them. The principals should be allowed to put the ideas that come to them into practice without waiting for an impulse from the central administration. We ought not to proceed by general measures as we always do. If everything is done by general measures, an innovation is reported immediately. This is the defect of the university; it is a great machine thoroughly organized,

in which all the parts are firmly bound together, but in which it is very difficult to make any reform.

The PRESIDENT. You complain of the uniformity and also the abuse of specialization in the case of the professors. Do you consider this to be a consequence of the excessive centralization?

M. BRÉAL. The examinations are the cause. We have an agrégation (special examination for the diploma of agrégé, a special professor) of letters, those of grammar, of philosophy, of history; to-day one is demanded for geography. Once specialization is introduced, it tends to spread more and more. I think that a professor of history should be allowed to give lessons in literature. I see no reason for confining him to his specialty. This, indeed, is easier for the administration; when a vacancy occurs in a class of history in a lycée an agrégé in history is sent there. The professors are moved like pieces on a checkerboard. A true principal would prefer to select part of his professors in another way. If he discovers a professor of history having a taste for letters he will, when occasion offers, give him the charge of a class in literature for one or two hours.

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The PRESIDENT. With respect to the baccalaureate, did you not think several years ago that it would be possible and even desirable to adopt gradually the German system, at least at Paris, transferring the final examination to the secondary establishments?

M. BRÉAL. I have always doubted the possibility of introducing this system into France. The actual conditions of the country make me doubt it more than ever. We must consider how the examinations of maturity (abiturienten examen or maturitäts prüfung) have been established in Germany; they arose in Prussia. They were established at a time when the nation, it may be said, had no political life, and the control of the State in this matter excited no opposition. The representatives of the Government were received everywhere with deference; no one objected to their decisions. Their presence was even regarded as a favor. It was then easy to institute examinations of this kind. But France, as you know, is actually divided into two camps. Would it be possible to make the students of private schools pass their examinations in the lycées? Endless complaints would arise. If the examinations were conducted by professors of the lycées, the students from the private schools would believe, or would pretend to believe, that they were in the hands of prejudiced judges. In my opinion, it is not to be thought of.

The PRESIDENT. You would be less inclined to try this experiment now than some years ago?

M. BRÉAL. The different parties are too much opposed to each other. The professors of secondary instruction do not wish to attempt it at any price. They do not feel strong enough—independent enough. The professors of higher education can do it, because they are immovable and because that the system has been established for fifty years; but the professors of the lycées are not strong enough to resist the opposition and the criticisms that would be excited. The only thing that might be done would be to include a few professors of secondary education, a number carefully proportioned, in the examining body; but the direction of the examination should be left to the professors of higher education. As to giving every establishment, whether State or private, the right to confer the bachelor's degree, this is a course which, under the circumstances, I can not conceive to be possible. It would be the same as if a country that had a currency received everywhere without opposition should suddenly give it up and permit every district, every city, even every individual to stamp coin on his own account. The pieces would not be taken anywhere. Very soon it would be necessary to find something else to replace the old money of the State.

The PRESIDENT. You were formerly of the opinion, also, that the professors had not adequate preparation. Would it be necessary, as you claimed, to give more attention to this matter, and allow greater freedom to the professors that are better prepared?

M. BRÉAL. There is an institution in Germany which is excellent and which might be established among us. Our professors are weak on the side of pedagogy—the method of teaching. At first they do not know how to adapt their instruction to the age and comprehension of their pupils. In Germany, for the first year the young professor has no class of his own, but he follows the whole series of classes in company with the regular professors; he learns thus by comparing methods, what to follow and what to avoid, since it is true that one may profit as much by the faults of others as by the view of their excellencies.

The PRESIDENT. You have compared the German and French methods with respect to their effectiveness. Do you find that the German methods are more forceful, that they excite the pupils to greater self-activity?

Mr. BRÉAL. In respect to the pupils, the Germans have a special talent which they derive from their primary instruction, for it is in the primary schools that this talent is carried to the highest perfection. The master of a German school knows exactly how to speak to children; this talent is extended then to secondary instruction. In France we do not have this power, and it is difficult for us to have it. This is due to several causes which can not here be considered, but one of which I will indicate. It is this: The intimate relation between the German professor and his pupil is not possible among us; the actual condition of our population forbids it. * * * The German professor is like a member of the family; they receive him in the most familiar way. In France such relations would be impossible.

[Session of Friday, March 24, 1899; M. Ribot, chairman; deposition of Brother Justinus.]

The CHAIRMAN. Are you not the assistant of the superior-general of the order of Christian Brothers (Frères des Ecoles chrétiennes)?

Brother JUSTINUS. I am the secretary-general of the brotherhood, at Paris.

The CHAIRMAN. You are, therefore, well informed as to the regulations and conduct of your establishments. Have you not for some time past, and especially within the last few years, extended the scope of your instruction? Did you not formerly devote yourselves principally to primary instruction?

Brother JUSTINUS. Mr. Chairman, there are certain prejudices upon this subject which I will ask your permission to dispel, because the character of the education given by the brotherhood is not, in some respects at least, sufficiently understood. The following statement which I have the honor to submit to you, I ought to say, is based upon official documents:

I.

To M. Duruy almost exclusively has been attributed the honor of originating and organizing our special secondary instruction, the organic law of which was passed June 21, 1865. It was only by a decree, however, that special secondary instruction was converted into modern secondary instruction. Undoubtedly M. Duruy had a large share in the pedagogical work which was thereby accomplished, but it will by no means diminish his merit to recall the labors of his predecessors in this direction, and the examples which inspired him.

In his various reports to the Chamber of Deputies M. Duruy has himself described with impartiality the genesis of special secondary instruction, which is now called modern secondary instruction. Jean-Baptiste de la Salle, the founder of the order of the Christian Brothers, was the first to create the type of this sort of instruction. I will say, at the outset, to avoid all misunderstanding, that the founder of this order

had in mind principally the primary school. This school was the real raison d'être of the order, afforded it a field of action, and has remained its first and preferred mission ever since. The original character of our brotherhood has never been changed.

Jean-Baptiste de la Salle was the organizer of the public instruction of his time. All masters of pedagogical science have been willing to accord him that merit. In the pedagogical museum, organized by the ministry of public instruction, the bust of our founder occupies a place among those of the most illustrious pedagogues. The city of Rouen erected a statue to him in one of its public squares, thus honoring our saintly founder as one of the purest glories of the Norman city. Echoing the general opinion the Dictionnaire de Pédagogie, published under the direction of M. Buisson, now a professor at the Sorbonne, declares that "the name of Jean-Baptiste de la Salle ought to be placed at the head of the organizers of primary instruction in France and Europe."

But, if the primary school was the principal and master work of Jean-Baptiste de la Salle, there was yet another field of labor which, no less than the first, revealed his creative genius. He had been struck with the serious hiatus in the instruction reserved for children of well-to-do families who were not destined for the liberal professions, so, while organizing the primary school, he also created a special establishment, until then unknown, which should respond to the new needs which his rare sagacity had discerned, and this establishment became the type of those in which modern secondary instruction is given to-day. This establishment became the seat of the administration of his order. M. Duruy remarked in his report upon technical education that France is indebted to the Abbé de la Salle for the practical installation and popularizing of that form of instruction. "From this first experiment," he declared, "there soon sprang a system of instruction which, if it had become general, would have established a century earlier the organization of adult schools, and even that of special secondary instruction. The programme of instruction for the pensionnats [boarding schools] of the brethren before 1789 included the catechism, * * * literature, the drawing up of the principal actions in civil law, * * * geometry, natural history, * * * hydrography, and several modern languages. In the pensionnat of the brethren at St. Yon, says an old description of Rouen (Tableau de Rouen, 1774), the inmates are taught everything relating to commerce, finance, military affairs, architecture, and mathematics." The Dictionnaire de Pédagogie of M. Buisson adds: "Here is undoubtedly (why not confess it?) the first point of departure of superior primary instruction and the first sketch of special secondary instruction."

Among the letters patent granted to our pensionnats in the last century it is sufficient to note those of February, 1757, in favor of our institution at Marseilles. In that document mention is made of the character of the institution, its object, the success of the studies carried on in it, and the social grade of its students. "The Christian Brothers of Marseilles," it says, "have declared that they were called to this city in 1727 by the late Sieur de Belzunce, bishop of Marseilles, and the general council of the said city in consequence of its unanimous desire to receive them as one of the religious communities of the city; that the aldermen urged them to receive as inmates (pensionnaires) many of their own sons, as well as those of the principal merchants, in order to give those youths a proper and Christian education and teach them whatever is necessary for entering upon business pursuits; that those youths, having derived great profit by their instruction, the brethren were led to receive the youth of the entire city and its environs. * * * Wherefore, by the advice of our council, and after due report to us made by the first president, intendant, and provincial superintendent of the usefulness of the said brethren, and after exhibiting to us the certificates given in their behalf by the aldermen of the said city of Marseilles, we do permit the said brethren * * * to receive inmates into

their establishment in the same way as at Rouen without annoyance or hindrance of any sort whatsoever."

In 1792 we had eleven pensionnats modeled after the St. Yon establishment at Rouen. To-day the lycée of the university at Angers occupies our former pensionnats at that place. That at Rouen is occupied by the normal school, and others in different places have been turned into public institutions. The revolution ruined our institutions temporarily, but they speedily revived. Such is the case with all works which are in real harmony with social needs, because they carry in themselves a vital principle which enables them to triumph over all reverses. After the decree of August 18, 1792, which suppressed the religious orders, the brothers were obliged to scatter. When Chaptal, minister of the interior from 1800 to 1803, undertook to raise education out of its ruins, he presented to the council of state a bill (projet de loi) in which he proposed to recall the brothers, that admirable institution, as he expressed it, whose members have always combined the art of teaching with the most austere morals. The Dictionnaire de Pédagogie adds that in one of the sessions of the council of state when a discussion of the constitution of the university was going on, the dangers which might result from the adoption of the brothers by the public authority were pointed out. "I do not understand," said Napoleon I, "the kind of fanaticism with which some persons are animated against the brothers. It is a veritable prejudice. Everywhere people are for their reestablishment. This general call is a sufficient demonstration of their usefulness." (Session of May 11, 1806.) This is the origin of article 109 of the decree of March 17, 1808, organizing the University of France, which runs as follows: "The Christian Brothers shall be licensed and encouraged by the grand master, who will affix his signature to their regulations, administer oaths to them, and see that their schools are inspected. The superiors of this body may be members of the university." From which it appears that relations exist between our order and the university of such a special character that we earnestly desire to keep the remembrance of them alive.

The first care of our brothers, after the reconstruction of our order, was directed entirely to our principal work, the primary school (école populaire), but in 1810 the pensionnat system was revived according to the traditional plan. The pensionnat of Toulouse was already flourishing, and soon other establishments of the same kind were opened with the approbation of the public authorities. The original character of special instruction, inaugurated before the revolution, was retained; this was an intermediate or secondary instruction of general culture, but without Greek or Latin, with special attention to commercial, industrial, and agricultural careers.

From the first there was a constant adaptation of our programmes to the needs created by the social transformations which were taking place. This flexibility, which contrasted with the fixedness of the university programmes, excited surprise and a little umbrage in the representatives of the academic authority. The university, in fact, had no establishments analogous to our pensionnats, and the inspectors found it difficult to find a place for our institutions in the ordinary classification. Our instruction did not correspond to the programmes of the classical course because the ancient languages were excluded from it. Neither did it correspond to the course of superior primary instruction because it exceeded the limits of that grade in all points. It was an instruction sui generis, adapted to the needs of a very interesting class of young men. Explanations were requested. We answered that by the terms of article 5 of the imperial decree of March 17, 1808, instruction in the ancient languages constituted the very essence of classical education, while in our system instruction in those languages was interdicted, and we could not, therefore, be properly charged with trespassing upon the domain of classical instruction. This liberal interpretation was accepted by the university after some hesitation. In 1840 the complete programme of instruction in our institutions was published. M. Cournot,

rector of the académie of Dijon, declared his approval of it on January 19, 1861. Before that date a ministerial decision of October 22, 1841, had authorized the opening of the pensionnat at Passy, and some years afterwards, in consequence of the results obtained by our method, we were honored by a high testimonial of good will on the part of the minister of public instruction, who, by a decree of January 3, 1856, established scholarships at our pensionnat at Passy with funds taken annually from the appropriation for public instruction, in order, as the official document declares, to give encouragement to the institution of the brothers and test the method followed in it. From 1856 until 1879, when M. Jules Ferry was minister, we always had beneficiaries of the scholarships of the ministry of public instruction. The initiative taken by our order in the direction of special or modern instruction was, therefore, manifestly approved and encouraged by the public authority itself.

In 1862 M. Rouland, minister of public instruction, appointed "a commission to study the questions regarding commercial, industrial, and agricultural instruction in the institutions of public and private instruction." His successor, M. Duruy, continued and even enlarged the scope of the inquiry. In the course of a journey which he made through France he soon became convinced of the necessity of satisfying the wishes which were expressed to him on this subject and which seemed to him as thoroughly justified as they were universal. Thence arose the thought of organizing special secondary instruction within the university. With this object in view M. Duruy wished to make a direct and personal study of the practical question. Three inspectors-general, with M. Danton at their head, were sent to the brothers' pensionnat at Passy, which had more than 700 pupils. This was on March 18, 1864, and on the same day M. Duruy visited the school and was received by Brother Philip, the superior-general, and by the head of the school. Accompanied by his inspectors-general, the minister visited all the classes and complimented the brothers in the most flattering terms upon the appearance and tendency of the pensionnat. Another ministerial visit took place on the 12th of May following. It was caused by the resistance to the projet de loi for special instruction which was manifested in the parliamentary commission which had been appointed to examine the subject. To overcome this opposition M. Duruy invited the members of the commission to accompany him to Passy, in order to demonstrate to them, as he expressed it, the successful realization of his project by the Christian Brothers. The commission accepted the invitation and went to Passy, where the members visited the different classes, inquired into the programmes, examined the students, and inspected their work. In mathematics the examination was upon the eighth book of Legendre. In another class two literary compositions were read which were highly approved; and M. Duruy, turning to the deputies, said: "You see, gentlemen, that it is not necessary to study the ancient languages in order to write good French. I have been of that opinion for a long time." This opinion seemed to meet with a general assent. Finally, in the class in modern languages, a conversation in English was carried on among the students, and one of the deputies took occasion to remark how the utilitarian character of the Anglo-Saxon race is reflected even in its language. This visit, which was at once an investigation and a testimonial, as the biographer of Brother Philip put it, had a greater effect upon the deputies than arguments or speeches could have produced.

The following statement was included in the preamble to the bill upon special instruction: "The superior primary schools have turned out a body of young men well fitted to enter business or industries. * * * The two municipal schools which the city of Paris has established are entirely of that character, as well as the pensionnats of the Christian Brothers. The instruction given in these schools is a response to a real and general necessity. One religious congregation alone (the order of the Christian Brothers) can count 7,900 pupils who are receiving this kind of instruction in 32 schools." (Journal Officiel, Sunday, April 17, 1864, p. 516.) On

December 3, 1864, M. Duruy, after having received many requests for the authorization of programmes of instruction, answered the director of the pensionnat of the Christian Brothers at St. Etienne as follows: "I have read your letter to me requesting permission to add the study of modern languages and elementary geometry and algebra to your programme of superior instruction. When I visited the schools of the Christian Brothers at Passy, Bordeaux, and Nîmes, I expressed my satisfaction at the order which prevailed in those institutions. I granted nothing, but I also withdrew nothing. I respected the status quo as far as the programmes of instruction were concerned. Indeed, before the matter can be settled we shall have to wait for the vote (soon to be taken no doubt) on the bill now pending before the Corps Législatif, when this question will be discussed. I must preserve the same noncommittal attitude in regard to the institution under your charge." There, gentlemen, is the recognition of the priority of the organization and operation of modern secondary instruction by our order, signed by the hand of M. Duruy himself, and the foregoing is the accurate account of the origin of this kind of instruction, drawn from official documents and the archives of our order, which I thought it my duty to lay before you. I draw from it the conclusion that the order of Christian Brothers has in no sense departed from its original rôle and its pedagogical mission by giving modern secondary instruction in some of its large pensionnats. It has simply remained faithful to the traditions, two centuries old, of its founder, of whom the immortal Leo XIII said that he had merited well both from religion and civil society. He bequeathed to us this particular type of instruction among his educational methods and his successors have applied themselves to continuing his work and giving it a national development in conformity with its purpose.

"The Christian Brothers," says Mgr. Dupanloup, "perceived the deep injury which the lack of all good industrial training causes the industrial or commercial classes, and they determined to establish at Passy a pensionnat in which an intellectual, religious, and moral education should be given which should be adapted to the needs of children who are destined for commercial, industrial, and artistic callings. Foreign countries envy us this excellent work and entreat the brothers to come and found similar institutions for their youth. The largest cities of France likewise express the same desire, while such cities as Rouen, Reims, St. Omer, Nancy, Carcassonne, Montpellier, and others enjoyed the benefit of the establishments of the brothers before the revolution. I hope that these invaluable institutions may increase in our land."

II.

The marked favor which is accorded at the present day to the pedagogical ideas of our founder in regard to modern education was preceded in the first half of the century by a memorable contest in the domain of primary instruction between two systems of instruction, one, of foreign origin, known as the mutual method, and the other, of pure French origin, called the simultaneous method, which was bequeathed to the brothers by the founder of their order. The present is not the only time, gentlemen, when the exaggerated taste for what is foreign has been manifested in our country. It is a singular fact, and difficult to explain, that all the favors of the administration were reserved for the mutual schools and their principal representatives, and private associations were formed to aid them. Pedagogical protection even extended so far in this respect that the order of the brothers, which had always remained invariably attached to the system of its founder, was for a time threatened with the loss of its legal existence. But the defense of the Christian schools lay in their success. The conspicuous superiority of their results finally convinced their most determined adversaries, and to-day the method inaugurated by the founder of the Christian Brothers is adopted in all schools, both public and private.

"The order of the brothers," says the Dictionnaire de Pédagogie, "might well

congratulate itself on having remained persistently faithful to the injunctions of J. B. de la Salle when M. Cousin, in his account of primary education in Holland in 1836, reported the following opinion of the school authorities in Amsterdam: "We regard," they declared, "the mutual system of instruction as an absolutely insufficient method." "It is quite curious," remarked M. Cousin, "to hear a Protestant minister, a Quaker, and a philosopher at Amsterdam, unite in praising those poor brothers who are doing so much good and whom a new kind of fanaticism is vainly endeavoring to dishonor." In his account of primary instruction from 1867 to 1877 M. Gréard has clearly and precisely described the conversion (of which he was the promoter) of the mutual schools of Paris into simultaneous schools, and he attributes the success of the schools of the brothers to the excellence of their methods. In a period of thirty years, from 1848 to 1878, out of 1,445 scholarships placed in competition for the primary schools of superior instruction by the city of Paris, 1,148 places (about 80 per cent) were given to the pupils of the brothers. In 1878, the year of the last competition in which they could take part, out of 339 competitors declared eligible, 242 came from the schools of the brothers, and out of 50 first places the brothers obtained 34. In 23 competitive examinations from 1848 to 1870 the ten highest numbers, classified in the order of merit, have been granted to pupils of the schools of the brothers as follows: No. 1, 20 times; No. 2, 22 times; No. 3, 20 times; No. 4, 18 times; No. 5, 19 times; No. 6, 23 times; No. 7, 17 times; No. 8, 18 times; No. 9, 18 times; No. 10, 22 times. The number of boys' schools of the order, however, was only 48 per cent of the total number of primary schools of the same nature.

III.

If we pass to the grade of modern secondary instruction we can affirm that under the influence of the same methods the results are likewise very satisfactory. No one will be surprised at this when it is remarked that we already had the tradition of this instruction in our order.

The CHAIRMAN. How many bachelors' degrees have you granted?

Brother JUSTINUS. I have not the figures with me, but I can point out that for the institution at Passy alone, from 1892 to 1898—that is to say, from the first application of the present regulations until the last session—we find 365 baccalaureate degrees granted, or a mean of 52 a year for seven years for one establishment only. During the same period the level of the studies was raised sufficiently to allow 48 students of Passy to obtain a double baccalaureate in the same year. Similar results, proportional to the number of scholars, were obtained in our establishment of the Francs-Bourgeois, rue St. Antoine, Paris, as well as in our large provincial institutions at Lyons, Bordeaux, Toulouse, Dijon, Clermont, Reims, etc. As the crowning piece of the studies in these schools, a preparatory course was organized at the école centrale at Passy, forming a continuous suite with the modern secondary classes. From 1887 to 1898 the pensionnat of Passy had the "major" of the promotion four times, the "sous-major" twice, and a certain number of pupils in the ten firsts. Out of 134 pupils presented during this period 119, or 89 per cent, were admitted.

The CHAIRMAN. Of all those who presented themselves?

Brother JUSTINUS. Yes, Mr. Chairman, of all those who were presented by us. Besides, nearly all these scholars finally graduated from the école centrale with the diplomas of engineers, and several among the highest numbers.

In order to respond to the requirements of different parts of the country, while our institution at Passy prepares for the école centrale, that at St. Etienne prepares with equal success for the school of mines at that place. If we look at the rating at entrance and on leaving the school during the last ten years, it will be found that the scholars of the brothers have gained the place of "major" eleven out of twenty times. Out of the ten firsts, in these ten years, on admission to the school, or 10×10,

our students got 51 places out of 100. On leaving, their rating shows 53 per cent. From which it can be seen that these young men did not confine themselves to maintaining their rank, but won higher places. As to the practical results of this education, both to the young men themselves and as indicating the profit which the country has derived from their services, it gives me pleasure to inform you, Mr. Chairman, that the Société amicale des anciens élèves du pensionnat de Passy alone has a great number of members who occupy important positions, principally in commercial and industrial careers, and that the list of its friends and patrons (adherents) contains the names of 31 chevaliers of the Legion of Honor.

The CHAIRMAN. These details are interesting, but are a little aside from the purpose of our inquiry.

Brother JUSTINUS. It seemed to me, Mr. Chairman, that these diverse questions were closely allied. Moreover, the exact information which I have just had the honor to submit to you will enable the commission to appreciate better the whole of the results obtained.

IV.

Statistics recently prepared give the following as the occupations followed by our graduates:

	Per cent.		Per cent.
Commerce	35	Administration	7
Agriculture	33	Army and the colonies	5
Industry	15	Students	5

The great majority, therefore, follows commerce, agriculture, and industry.

The CHAIRMAN. How did you prepare these statistics?

Brother JUSTINUS. We requested each school to furnish the percentages of its graduates, and then we reduced the mean——

The CHAIRMAN. What schools do you mean?

Brother JUSTINUS. Our 30 schools which give secondary instruction.

The CHAIRMAN. What do you mean by that? Are these the schools that give baccalaureate degrees?

Brother JUSTINUS. Yes, Mr. Chairman. These are institutions organized in conformity with the law and the decrees concerning modern secondary instruction, and classed as institutions of that grade by the academic administration, in consequence of declarations made by the directors who hold university diplomas.

The CHAIRMAN. How many institutions have you where anything besides primary instruction is given?

Brother JUSTINUS. We have 30 in France which are secondary schools and 15 abroad.

M. MARC SAUZET. Are they primary schools at the same time?

Brother JUSTINUS. All these establishments have primary classes. We think that good primary studies are an excellent preparation for secondary instruction.

The CHAIRMAN. Then you have 30 institutions which you classify as secondary.

Brother JUSTINUS. Yes, Mr. Chairman, these establishments have the organization of modern secondary instruction, and the university authority so regards them. This is why in many academies, upon the proposal of the recteurs, ministerial decrees have designated the directors of some of our pensionnats to represent modern secondary instruction in the academic councils. On this point, Mr. Chairman, permit me to correct an error which arose in Parliament in the discussion upon the last budget but one, and which has been repeated, I believe, in the depositions laid before your commission. According to statistics furnished by the Annuaire de l'instruction libre, it has been stated that the Christian Brothers had about 500 secondary establishments, and that they had consequently declared their intention to participate in the exposition of 1900. This is an absolute error. Our order only

possesses 30 secondary establishments in France and about 15 abroad, but there is an Alliance des maisons d'éducation chrétienne which has in France, Belgium, and Switzerland about 500 ecclesiastical colleges of classical secondary instruction, or small seminaries. This alliance did declare its intention to participate in the exposition. This is doubtless what gave rise to the mistake I have pointed out. The Annuaire de l'instruction libre, I will add, is merely a bookseller's publication, and has no official authority. It has provoked numerous complaints, which have been taken into account in the edition of 1899. My figures, on the contrary, are in perfect accord with those of the Annuaire de l'instruction publique et des Beaux-Arts for 1899.

The CHAIRMAN. Then you place under secondary instruction establishments in which something besides simple primary instruction is given, while the majority of the students do not follow the course leading to the baccalaureate?

Brother JUSTINUS. The lycées themselves, Mr. Chairman, have primary classes with a special corps of teachers; many, besides, have joined to them infant classes under female teachers. As far as we are concerned, the part given to secondary instruction, properly so called, is relatively limited. Thus we are at present teaching 350,000 pupils, of which 100,000 are in foreign countries and 250,000 are in France. Of this latter number there are hardly more than 11,000 in our modern secondary establishments.

The CHAIRMAN. Now of these 11,000 distributed among 30 establishments, all do not take what may be called secondary studies, do they? They do not complete those studies?

Brother JUSTINUS No; certainly not.

The CHAIRMAN. How many stop short?

Brother JUSTINUS. About half.

The CHAIRMAN. You yourself do not regard them as prosecuting secondary studies, but superior primary studies?

Brother JUSTINUS. For a certain number of scholars there are classes in which the programmes of secondary instruction are not rigorously followed. The main object is to prepare those young men for commercial, industrial and agricultural pursuits.

The CHAIRMAN. Let us take, for example, the establishment that I am familiar with, that of St. Omer. Some years ago it passed into the grade of secondary instruction. I believe that the majority of the pupils are the sons of farmers who have no idea of finishing the studies called secondary.

Brother JUSTINUS. Yes, Mr. Chairman, and for that reason we organized, in that establishment, alongside of modern secondary instruction, a more practical instruction, one of general culture, with a special industrial tendency.

The CHAIRMAN. That is true, but the majority of the pupils probably take the industrial classes. Have you any statistics on this dual instruction?

Brother JUSTINUS. At St. Omer the two contingents are nearly equal. There are 68 pupils in the primary classes, 112 students in the industrial, and 157 in those of modern instruction.

The CHAIRMAN. And how about the total of your school population?

Brother JUSTINUS. The three elements of the inmates of our pensionnats are in the following proportion: About 4,000 are in the primary division, 2,000 in the commercial or industrial classes, and 5,000 in those of modern instruction. This shows that the commercial or industrial classes are in a minority in the total of our establishments of modern instruction. I call your attention, Mr. Chairman, to the fact that our industrial establishments are not classed among those of modern instruction. Thus, at Paris, we have important establishments, notably that of St. Nicolas, and several commercial schools, which are not included in the 30 which form a part of the group of modern instruction.

The CHAIRMAN. And in these 30 institutions you think, without being able to give

us the exact figures, that the majority of the scholars do not finish the course of secondary instruction?

Brother JUSTINUS. The classes of the ninth, eighth, and seventh grades are primary. Beginning with the sixth, the programme followed is that of modern instruction with modifications required by local needs, but the majority of the pupils do not reach the first grade.

The CHAIRMAN. I have requested the inspectors of the académies to render an exact account—and you can supply the information—of the number of pupils leaving after the sixth, fifth, etc., grades. You of course understand that the lack of exact figures falsifies our statistics of secondary instruction, so that we carry, en bloc, as a part of secondary instruction, the total population of your 30 establishments.

Brother JUSTINUS. The same is true of public secondary instruction, which includes, as I said just now, primary and even infant classes. According to the Annuaire de l'Instruction publique et des Beaux-Arts for 1899, there are now 1,168 primary classes in the lycées and State colleges, of which 209 are infant classes, and 268 of these primary classes are in charge of women. In the Académie of Paris alone there are 53 women teachers in the public secondary institutions. Thirty of these are in charge of infant classes, and these figures do not include teachers in the lycées for girls. In one official institution of the city of Paris a system was recently introduced which it would be well to extend to all institutions of the same kind. I allude to the collége chaptal. There is an organization very much like our pensionnats, having classes of superior primary instruction and those of modern secondary instruction, combined with a classical section. By the decrees of July 26, 1895, and January 26, 1896, the official sanction was given to this mixed system, at once primary and secondary, comprising under one management two different degrees of instruction.

The CHAIRMAN. That is true, but you have no statistics showing the number in each grade; you have only estimates.

Brother JUSTINUS. Very close approximations. In some of our institutions the distinction was made long ago in accordance with the requirements of the authorities of the académies. We would regard it as good administration, Mr. Chairman, if this distinction could be made everywhere. The real facts would be brought out in this way and certain statistical enigmas could then be easily explained. For my own part, from the knowledge I have of certain elements of general statistics, I am convinced that sufficient account has not been taken in these latter days of the movement of the French school population. There is a greater crisis in the primary than in the secondary grade of instruction. In eleven years, from 1885 to 1896, the last year of the publication by the ministry of public instruction of the résumés des états de situation, the general school attendance has undergone a considerable decrease. The diminution of attendance of children between 6 and 13 is especially noteworthy. In 1885 there were 3,701,540 children in the public primary schools, while in 1895 there were only 3,381,161, showing a diminution of 320,379. But at the same time with this decrease a lively impulse was given to the complementary primary courses, to the superior primary schools, and to the public professional [industrial] schools. These received an increase of 16,672 pupils, a scanty compensation, to be sure, but nevertheless worthy of note. The State lycées and the colleges of the communes must certainly have received a portion of the pupils over 13 years of age who have been retained by the superior primary or the industrial schools.

The CHAIRMAN. That explains how it is that the figures for the lycées and colléges have remained stationary for a number of years.

Brother JUSTINUS. As far as national interests are concerned there is nothing to regret in the new direction given to the studies of this class of students. They are certainly more in place in industrial schools than in the lycées, and my opinion consequently is that what is called the crisis in secondary instruction has been exaggerated.

The CHAIRMAN. There is no doubt of it. To come back to your institution, do you give really modern instruction leading to the baccalaureate in different institutions, and, besides, do you prepare for different schools, notably, the École centrale?

Brother JUSTINUS. The preparation for that school is made only at Passy.

The CHAIRMAN. How many pupils have you there?

Brother JUSTINUS. About 900.

The CHAIRMAN. All of them do not follow that instruction to the end?

Brother JUSTINUS. No, Mr. Chairman, but the classes in our establishments are organized on the plan of modern instruction, a certain number being especially commercial. In recent years there have been 230 primary pupils, 110 in the commercial classes, about 500 in the classes of modern instruction, and some 30 or 40 in the course preparatory to the École centrale.

The CHAIRMAN. When does the separation take place?

Brother JUSTINUS. After the fifth grade.

The CHAIRMAN. Then you have a commercial section?

Brother JUSTINUS. Yes, Mr. Chairman; the commercial section comprises three classes at the pensionnat of Passy, and the industrial section includes four at St. Omer, and about the same distribution exists in the other institutions.

The CHAIRMAN. Do you think that the programme of modern instruction is not sufficient for commercial needs?

Brother JUSTINUS. It is a little too much like that of classical instruction.

The CHAIRMAN. You have been obliged to change it for the benefit of those who want to go into business?

Brother JUSTINUS. Our aim has always been to adapt our programmes to the needs of the different neighborhoods.

The CHAIRMAN. You have been at complete liberty to do so since there is no baccalaureate degree for those studies.

Brother JUSTINUS. It is by an express and well-considered understanding with the families that we determine the delicate question of the direction to be given to the studies of our pupils. We offer to the families the choice between the regular programme of modern instruction and the industrial courses. Many parents say to us: "Make our boy a well-informed, well-bred young man, with strong Christian convictions and of good morals, and that is all we want."

V.

The CHAIRMAN. So you have classes organized completely upon the model created in 1890? You have what I shall call superior primary instruction, flexible enough to be adapted to the needs of the different neighborhoods. Does this kind of instruction operate on a large scale in many of your establishments?

Brother JUSTINUS. We give this instruction in those of our establishments which do not give modern instruction and in a few special classes of our principal schools.

The CHAIRMAN. Do many of your scholars graduate from the department of superior primary instruction?

Brother JUSTINUS. Although many of our scholars do not take a complete course in superior primary instruction, they do take very useful developments of elementary primary instruction. Industrial drawing, accounts, and agriculture are courses which are highly appreciated by their families.

The CHAIRMAN. Is not this instruction like the public superior [primary] instruction except the adaptation to local needs which you endeavor to bring about?

Brother JUSTINUS. We do not prepare our pupils for the diplomas of the official superior primary instruction, because those diplomas have hardly any weight. Besides, many merchants and manufacturers tell us that the recommendations of our directors are as good to them as all the certificates in the world.

The CHAIRMAN. How old are these scholars on graduating?

Brother JUSTINUS. About 15 or 16 years old.

The CHAIRMAN. There are those whom business necessities oblige to leave school; do you endeavor to give them as complete an education as possible while they are in school?

Brother JUSTINUS. We strive to prepare them for industrial, commercial, or agricultural pursuits while giving them a general culture.

The CHAIRMAN. Do your establishments give different kinds of instruction according to the localities in which they are situated?

Brother JUSTINUS. They all have points in common, but they differ in particulars. For some years, for example, in order to satisfy the requirements of the present situation we have increased the number of courses in agriculture in different places.

The CHAIRMAN. How many of them have you?

Brother JUSTINUS. The simple courses annexed to the establishments of regular instruction are very numerous; most of our pensionnats have them. Some establishments have a special agricultural course. I do not include in this class our agricultural institute at Beauvais, which was founded more than fifty years ago, and has a place apart, on account of its importance. Young men are trained there for agriculture on the large scale for vast agricultural enterprises.

The CHAIRMAN. That is an agricultural school, but in your primary schools with agricultural tendencies do you teach agriculture properly so called?

Brother JUSTINUS. The courses have both a theoretical and practical character, although the organizations are different. Let us take an example. Here is an extract from the "Report to the members of the bureau of the sociétié des agriculteurs de France, section of education, upon the examination of the students in agriculture of the pensionnat Ste. Marie at Quimper, July 11, 12, and 13, 1898, before the special committee of the society." The report states that 150 of the 700 pupils of the pensionnat took the course in agriculture that year. "This course is divided into three years, each having a distinct programme. The programme has been submitted to us, and we have found it perfectly adapted to the intellectual dispositions of the pupils. It is divided into monthly programmes, which are completed by a strict examination at the end of each month. We have examined the questions put in the different monthly examinations, and they seem to sum up the work of the month in a satisfactory manner. At Easter there is a half-yearly examination, both written and oral, which sums up and concludes the studies of the preceding six months. The annual examinations last three days. We divided ourselves into three bureaus, one correcting the examination papers in agriculture, another those in zootechnics, and the third, those in the natural sciences. After the written compositions were corrected, we questioned the pupils, each in turn, on the whole programme in each branch of instruction, and we are happy to express our gratification at the results. The pupils of the first year are familiar with the technical terms of agriculture and the natural sciences; those of the second year show a facility in discussing the quite complicated questions of their programme; while those of the third year could give a dissertation of forty minutes upon such a subject as the management of a farm, and interest us for another twenty-five minutes by their intelligent answers to questions which were sometimes difficult. In a word, the ensemble of this examination was perfect, and the three days your committee spent at the school were full of charming interest."

Now these results, Mr. Chairman, are not new; they are only repetitions of what has been known before in the history of this establishment, for, in 1866, the prefect of Finistère used the following words in his annual report to the general council: "The agricultural instruction of the pensionnat of the Christian Brothers, which is intended for the sons of farmers in easy circumstances, continues to exert the happiest influence in the way of propagating new methods. A large number of former pupils of this school are now members of municipal councils, several are

mayors, and all contribute by the example of their culture and their works to give a powerful impetus to agricultural improvements. The 1,800 graduates who have attended the course of Mt. Olive have all returned to their homes, where they reflect honor upon themselves by improving the useful and noble profession of their fathers. All the energies of the able professors of this school tend to inspire their pupils with a taste for agriculture and a love of country life, and if this useful institution had no other effect than to retain in the country a body of intelligent and enlightened young farmers, it would still merit all our encouragement."

If we consult the Annuaire du département du Finistère for 1899, Mr. Chairman, we shall find the names of 74 mayors, 97 deputy mayors, 10 conseillers d'arrondissement, and 2 general councilors, all formerly pupils in the agricultural section of the pensionnat. From 1846, the year it was founded, until the present year (1899), 27,337 pupils have received the education of the Christian Brothers in this institution.

The CHAIRMAN. This institution is not a school of agriculture?

Brother JUSTINUS. No, Mr. Chairman, it is a superior primary pensionnat with an agricultural course added. A farm of 35 hectares serves as a field for experiment, and the pupils are regularly taken there for the season's work. The annual examinations have often included an exercise in practical farm work. The pupils thus have both theoretical and practical training. In all our primary schools equal attention is given to agriculture. The first person to receive honors from the Société des Agriculteurs de France in 1899 for instruction in agriculture was one of our directors. The prix d'honneur of the same society was also given to us in 1898, as well as the gold medal for the publication of a course in agriculture for the use of schools.

VI.

The CHAIRMAN. Do you do the same thing for industrial instruction? Have you workshops connected with certain schools?

Brother JUSTINUS. Yes, Mr. Chairman, we have organized practical courses for industrial pursuits analogous to those of agriculture. At the last examination for admission to the school of naval pupil-mechanic apprentices, 27 pupils of our schools at Brest, Quimper, and Lambézellec were admitted. Of these the school at Brest had No. 1 in the line of promotion, the pensionnat of Quimper No. 2, and that of Lambézellec No. 3. At the other end of France 30 of our pupils from the single school of St. Eloi at Aix were admitted to the École Nationale d'Arts et Métiers at the examination at the end of June, 1898.

Our modern secondary pensionnat at Rodez also has a very prosperous industrial section. From 1890 to 1898, 88 of its pupils were admitted to the École Nationale d'Arts et Métiers to the navy or the school of foremen at Cluny. Similar organizations exist in a certain number of our establishments. Several, as at St. Malo, Paimpol, and Dunkirk, have special courses in the sciences, nautical arithmetic, etc., for the benefit of students in the schools of hydrography. Only a few weeks ago 24 of these young men, prepared in this way at St. Malo and Paimpol, were appointed sea captains.

As to the industrial courses, properly so called, the most generally known type is illustrated by the St. Nicholas school at Paris. The Academy of Moral and Political Science, in its session of June 12, 1897, allotted the Audéoud prize for this work of this school, the usefulness of which had become acknowledged. M. Léon Aucoc in his report used the following language on this subject: "The principal institution (at Paris) numbers 1,030 pupils, that at Issy, 1,050, and that at Igny, 830. Every year the administration is obliged to turn children away for want of room. According to the request of the parents the children receive either only primary instruction in its different grades, or a special course which fits them for either industry or horticulture. The workshops of the Paris school are one of the characteristic features of

the St. Nicholas work. The institution deals with the proprietors of works who pay all the expenses of the work done in the shops and take the profits, the work being under the direction of a foreman chosen by them. Apprenticeship lasts three or four years, according to the trade. No time is wasted in these shops, and the apprentices are not exposed from their thirteenth year to evil influences. Generally speaking the pupils are trained for trades which require good intelligence and taste, such as printing, geographical engraving, lithography, bookbinding, making of mathematical instruments, machinery, wood carving, bronze founding, and metal carving. Every day the apprentices receive from the Christian Brothers, who give them instruction, special lectures on drawing and modeling suited to their work. The foremen are well pleased with their apprentices, and the head of the establishment receives at the time of the yearly vacation a great many applications to hire the young men.

"The results of our primary instruction, properly so called, have received flattering attentions at all the universal expositions, at Chicago as well as at Paris. What we particularly like to emphasize is the daily work. In the year 1895–1896 there were 346 certificates of studies, 36 brevets of elementary primary instruction, and 5 of superior primary. At Igny, in agricultural and horticultural instruction, the young apprentices gained 44 prizes, viz, 19 at Reims, 13 at Paris, and 12 at Versailles, one of which was a prix d'honneur and one a first grand prize. All this work is maintained under a gentle and affectionate discipline which produces the best results. The St. Nicholas school was the first institution of manual work at Paris. It has remained one of the models."

At Lyons, the school De La Salle was organized by the brothers for the benefit of the best scholars of their schools. The founders offer a complement of primary and industrial instruction with a religious and moral training to those families who wish it. For admission the pupil must be 13 years old, at least; he must have a certificate (second degree) of primary studies, from the committee of Catholic schools, and he must pass an examination in orthography, arithmetic (metric system, fractions, interest), French composition, the elements of geometry, and linear drawing. This programme is followed in the schools of the arrondissement conducted by the brothers. At De La Salle the course is three years, and the instruction is at once industrial and commercial. It embraces industrial drawing and the mathematics required for that study, French correspondence, common law, bookkeeping, social economy, history and geography, English, and physics and chemistry applied to industries.

Shops or laboratories for forge work, weaving, carpentering, modeling, chemical manipulations, typography, and engraving enable the students to discover their special aptitudes and prepare a sure future. All the students are externes. Respectable families are designated to the parents who do not live at Lyons but wish their sons to attend the school. A special arrangement allows students who live at a distance from the school to take their midday meal there.

The object of the direction of this school is threefold, viz, by manual labor, first to show the pupils the necessity of industrial drawing and of the mathematical studies which that drawing demands; second to disclose to them the intelligent side of workshop labor and invite them to prepare for it; and third to give the pupils a general education and enable them to acquire dexterity of hand and sureness of eye.

The industrial courses of St. Étienne offer us a rare example of that diversity of organization of which I have already had occasion to speak. The subject is described as follows in a report of the committee on private schools.

When the committee applied to the principal manufacturers and tradesmen of St. Étienne for their opinion on the expediency of the Christian industrial school, there was but one unanimous approbation, and the committee received only the most sympathetic and lively encouragements. It forthwith set to work and first asked itself this question: Is it indispensable to create workshops at the school, which will evidently

be very expensive? Glancing around the numerous and diverse shops of the laborious city, it soon found its answer. St. Étienne is peculiar in possessing so many and varied industries and trades which sometimes seem to conflict with each other. Thus, there are the coal mines and works where great quantities of coal are consumed, foundries, iron works, arms factories, etc. There are also ribbon and velvet factories, with their attendant industries of dyeing, silk weaving, etc. As in other prosperous cities, we find here building actively going on with its attendant masonry, carpentry, interior and exterior decoration and the like, so that business, notwithstanding many crises, is very active there. In a word, St. Étienne possesses the most diverse kinds of works and the best equipped, and may be regarded, in a sense, as a vast workshop. On the other hand, shops established in an industrial school are necessarily generally incomplete, and insufficient to form real workmen. Would it not be better to use the shops of the city, various and well organized as they are, especially as their proprietors are willing to give free access to them? Is it not better for the apprentice to work in the place where he will have to work as a workman and under the direction of the same proprietor or foreman to whom he will be subordinate in the future?

The system of workshops outside the school, in charge of real foremen and superintendents in which the students remain under the direct supervision of the school, seemed to the committee to be the real solution of the apprenticeship question. This was also the opinion of the leading manufacturers of the neighborhood. Experience has shown that the judgment was sound, for the system adopted has given the best results. The experience of other countries is also in favor of it. In the great industrial cities of Holland, Germany, Belgium, and Switzerland, which countries are our rivals, the industrial schools are generally private foundations aided by appropriations by the cities or the Government. The manufacturers of the neighborhood lend their aid also, which is a guarantee of continual progress.

Admission and programmes.—The courses, four in number, are called years. Scholars are not admitted to a superior course until they have passed a rigid examination upon the studies of the lower course.

First year.—The pupils of the first year are recruited from the best pupils of the Christian schools of St. Étienne, who are invited to compete for admission to the industrial school. Candidates must have, first, certificate of primary studies; second, a certificate of good conduct; and, third, must not be over 12 years of age on the 1st of January of the year of admission. The scholars of the first year form two classes, but follow the same programme comprising the catechism, sacred history, writing, orthography, style, arithmetic, geometry, French history, linear and ornamental drawing.

Second year.—In this course the subjects of the programme of the preceding year are continued, and physics, chemistry, and drawing from nature are added. In the second semester the pupils are taken by sections, in charge of their teachers, into different workshops in the city whose proprietors take pleasure in admitting them and explaining or having explained to them the different operations. At the end of each visit each scholar is required to write a report in which he records his personal observations. In this way an idea of different industries is gained from among which he will have to make a selection. This selection is made in the first fortnight of the vacation. Each second-year pupil who is admitted to the third year is required to inform the brother director in writing the trade he intends to follow. His letter must be countersigned by his parents.

Third year.—This year's programme gives a further extension to the subjects previously studied, and adds mechanics, trigonometry, industrial and color drawing, and elements of descriptive geometry. Twice a week the students attend at the workshops of the trades they have chosen and work there under the proprietor, or foreman, or some good workman. The brother director also visits the shops once a

week to ascertain how his students have behaved. Every quarter a committee appointed by the conseil de perfectionnement requires them to do some original piece of manual labor. The apprenticeship of students of the third year is paid by the committee.

In this class room each group receives instruction by special instructors in scientific or artistic principles belonging to the trade it has chosen. Thus, a mining engineer teaches metallurgy; a pattern maker from the manufactory teaches weaving, etc.

Fourth year.—The pupils who have completed successfully the third year are admitted to the fourth, which is called the year of apprenticeship. They are assigned to the workshops of the trades they have chosen in the city, and work there under the ultimate superintendence of the brother director and the conseil de perfectionnement. Every evening they return to the school to attend the lessons especially arranged for them. They also attend the school on Sundays and holidays and take part with the rest of the school in parish duties. The brother director keeps himself informed of their conduct and technical work and gives them every month a memorandum of their marks in the class room and workshop. This memorandum is signed by the proprietors and parents.

At the end of the fourth year, which is essentially a year of practice, the young men, after a rigorous examination, receive a diploma of industrial instruction which bears the signatures, first, of the chairman of the committee of private brotherhood schools; second, of the members of the council of administration and of the conseil de perfectionnement; third, of the proprietors under whom they have worked, and, fourth, of the brother director.

This diploma, which has a real moral value, assures the young men the patronage of all persons who favor the industrial school.

Analogous statements might be made of the industrial courses at Reims, Marseilles, Douai, Toulon, Nantes, etc.

VII.

The CHAIRMAN. Do you find that your practical instruction responds to the needs and the increasing desires of the public?

Brother JUSTINUS. The families of the young men are, as a matter of fact, well satisfied with the organization of these different courses which run parallel to the regular instruction, which preserves, nevertheless, its superiority in numbers.

The CHAIRMAN. Are you not creating a strong competition, not only with the public institutions, but with the ecclesiastical, too? It is so asserted everywhere.

Brother JUSTINUS. We do not compete, in the true sense of the word, with anyone, Mr. Chairman. We desire the welfare of all, including ourselves. However, I have not with me the statistics of the institutions in question, but it will be easily understood that many Christian families, having to choose between the classical and the modern instruction and deciding in favor of the latter, would naturally turn to those religious teachers who have been giving this kind of instruction, handed down by tradition, for two hundred years.

As far as the ecclesiastical colleges are especially concerned, Mr. Chairman, I will remark that we have always restrained ourselves from trespassing upon the domain of the clergy. We have often been urged, in proportion as our pedagogical success has increased, to introduce a course of Latin into our pensionnats, but we have always refused to do so, and among the many reasons which have determined our conduct has been our determination not to lessen the prosperity of the ecclesiastical colleges.

One other consideration should be noted here. The special instruction which the founder of our order introduced two hundred years ago met the needs, at first, of only a minority of the young men of the community. The activity of the young

men of the better classes was directed to liberal pursuits. The conditions of family and fortune in those days enabled the intellectual élite of the country to devote itself disinterestedly to the cultivation of letters or the arts, or to scientific researches. Since then an economic and social transformation has taken place. The number of young men who are compelled to struggle to obtain the necessaries of life has greatly increased, so that our instruction to-day meets requirements which are more widely diffused than formerly, and hence its popularity.

The CHAIRMAN. The expenses at your establishments are somewhat less than at others, are they not?

Brother JUSTINUS. There is little difference, although we are not in such an exceptionally favorable condition as some ecclesiastical colleges—not all—which have free quarters given them by the diocesan authority. Many of our schools have to pay a good rent to the civil societies which own the quarters we occupy.

The CHAIRMAN. Are these societies the real owners, or do they only appear as such in order to cover the acquisitions of your order?

Brother JUSTINUS. These societies are real and have fulfilled all the requirements of the law in their incorporation. You can judge of this, Mr. Chairman, by the following fact: All the civil societies which own the buildings where we have organized our pensionnats have always paid their annual dividends; not one has ever, so far as I know, been an exception to this rule.

M. JACQUES PIOU. That is a good business. I wish we could all say as much.

Brother JUSTINUS. We have deemed it our duty not to disappoint the friends who have helped us in our work of education of the interest upon their capital. Therefore the directors of our pensionnats scrupulously satisfy all their obligations to the proprietary civil societies. This is their first financial duty.

VIII.

M. MARC SAUZET. Do you consider that the passing of pupils from superior primary instruction to modern secondary instruction is an easy one? This idea has been suggested, and it might, perhaps, be possible not only to unite those two classes of instruction, but to make one an introduction to the other. As you have both superior primary and modern secondary establishments, you have perhaps had occasion to make the experiment of the passing of the pupils of superior primary instruction into the higher classes of modern instruction.

Brother JUSTINUS. In order to answer that question I ask your permission to cite the opinion of an authority in education, Mgr. Dupanloup, who had a long experience on this point in classical education. He expresses himself as follows in his remarkable book on education: "I never consented," he says, "to admit boys to the Petit Séminaire at Paris who had not been properly prepared for secondary instruction by a thorough training in the primary grade. Such pupils I sent to the schools of the Christian brothers at Passy, for example. * * * From 8 to 10 or 11 years of age they had received a thorough primary education. From 10 or 11 to 16 or 17 they went freely through the whole of the humanities. With an exception or two, I never knew them rejected at the examinations."

What Mgr. Dupanloup stated of the relation of primary instruction, carefully given, to secondary in the classical, we affirm of modern secondary instruction. The boys in the elementary classes of our institutions have the benefit of what might be called a superior pedagogical supervision, because the masters of the primary classes, being constantly in contact with those of the secondary, are thereby better qualified to open wider horizons before the eyes of their pupils.

M. MARC SAUZET. Do you not prepare boys for classical studies in your establishment at Paris, rue de Gréville No. 44?

Brother JUSTINUS. That is a preparatory school for secondary instruction. In

order to make a distinction between it and the parochial primary school, St. Thomas Aquinas, we have recently placed it under a special head.

M. Marc Sauzet. I asked the question particularly with a view to ascertaining the results of that instruction and as a conclusion to my previous question.

Brother Justinus. To this special inquiry I will answer that the graduates of that school furnish nearly equal contingents to the Collège Stanislas, the lycée Montaigne, and to the day school in the rue de Madrid, in all of which their success has been remarkable. M. de Cabanoux speaks as follows of this school in his report of June 19, 1898, at a meeting at which M. Paul Lerolle, deputy from Paris, presided: "Since its foundation this school has had 643 pupils, of whom many have gained good positions in the liberal professions, in the corps of government engineers, or in the army and navy. Many more are preparing for these professions at the École Normale Supérieur, at St. Cyr, at the polytechnic school, or at Borda. Many others who are younger are pursuing the same end in the establishments of Stanislas, the Jesuit Fathers, the Petit Séminaire, or even in the best State lycées. We can affirm from the testimony of the directors of these institutions that our pupils place themselves at the heads of their classes. One day a professor in a well-known college in Paris received one of our pupils who had just been presented as a newcomer with these words: "Young man, be worthy of your predecessors." These testimonies corroborate in the most explicit manner the opinion of Mgr. Dupanloup already cited.

The Chairman. Do you think that the type of modern instruction, as it was completed in 1891, is susceptible of great extension and responds to the needs of the country? Or do you think, on the contrary, that it would have been better to adhere to the type of M. Duruy, which your order had inaugurated, as you say?

Brother Justinus. I think, Mr. Chairman, that certain friends of modern instruction have imagined for it a too ambitious part—that of supplanting classical instruction.

The Chairman. Is that your impression from the experiments you have been able to make?

Brother Justinus. A good general culture can be obtained through the modern instruction without copying the classical instruction out and out. I will add, since I have the opportunity, that neither our founder nor his successors ever intended to make the modern system a rival of the classical; each of these kinds of instruction has its own character, which it is desirable to keep distinct and unaltered.

The Chairman. You think it would have been better to remain in the plan prescribed for instruction in 1865?

Brother Justinus. I do not regard the limits then prescribed as absolutely unchangeable. That régime might have been modified, and some elasticity or flexibility might have been given the programmes, which they sadly needed; this would have been an improvement which we have tried, in a modest way, to realize.

The Chairman. But could this be done without so extending the duration of the studies so as to make the modern system the equal of the classical?

Brother Justinus. I will speak of the duration of the studies later. As to the general economy of the programmes, there would be much to say. What objection is there to introducing a diversion into the general programme which should take account of local needs. Without going into specialities too far, and while giving our main attention to the general culture of the mind, why not familiarize our young men with the principal questions concerning business, industries, and trades, agriculture, and the colonies. As to the extension of the modern instruction and the weight to be accorded its diplomas, I will add that if it is understood that this instruction answers the needs of a large class of young men, it is for the interest of the country to guide these young men to it, and, consequently, it would be unwise to deprive the graduation certificates of the prestige they now possess. To diminish their authority would amount to disqualifying the instruction itself.

The CHAIRMAN. What do you mean by that?

Brother JUSTINUS. I mean, Mr. Chairman, that the baccalaureate degree which is now given to graduates from the modern instruction should be retained in the interest of that instruction.

The CHAIRMAN. You seemed to think a short time ago that a special instruction, limited to four or five years, satisfied the needs which you had discovered in the public. You seemed to think that it would not be necessary to extend this cycle of studies to a modern baccalaureate.

Brother JUSTINUS. We must distinguish two classes of scholars in modern instruction. Some do not pursue their studies to the first class, and a more restricted course is sufficient for them. Others demand a complete education from this instruction, differing in character from the classical, but offering an equivalent guaranty of thoroughness as far as the duration of the studies is concerned. The increasing number of bachelors in modern instruction is a proof of this. If this satisfaction is denied them there is danger of throwing them out of their natural path, or at least of sterilizing, with no advantage to anyone, valuable faculties which only need development.

The CHAIRMAN. You are then inclined to maintain the reform of 1891; that is to say, you are in favor of a complete cycle of studies leading to a baccalaureate in modern instruction?

Brother JUSTINUS. Yes, Mr. Chairman; but on condition always of lightening the programmes and giving them greater elasticity.

The CHAIRMAN. Do you think that the law school and the medical school should be opened to those who have followed the complete cycle?

Brother JUSTINUS. That question is so delicate, Mr. Chairman, that I must ask your permission not to answer it. We should not care to make you believe in ambitions that do not exist.

The CHAIRMAN. Perhaps you would fear that superior primary instruction might slip by that door into the faculties of law and medicine.

Brother JUSTINUS. We have not asked that privilege, and do not ask it now. However, to be thoroughly sincere, it would be difficult to insist that a bachelor in modern instruction having, as some do, a real literary culture, and having acquired distinction in natural history, physics, and chemistry, could not be a good pharmacist or even an able physician.

The CHAIRMAN. Do you think that, if access to those faculties was given to young men under such conditions, you would have an increased clientèle?

Brother JUSTINUS. I am not certain of that. Besides, we do not want to receive a different clientéle from that for which our institutions were opened. We stand upon our traditional ground and have no greater ambition.

IX.

M. JACQUES PIOU. I would like to ask Brother Justinus the average age of the students in modern instruction on graduating?

Brother JUSTINUS. The average age is about 16.

M. JACQUES PIOU. Are the graduates of the modern instruction younger than those of the classical?

Brother JUSTINUS. Both are of about the same age.

The CHAIRMAN. In fact, the moderns are a little behind.

M. JACQUES PIOU. My second question is this: It is said that the scholars from the schools under the religious orders, after entering the State schools, lose the rank they have on entering. Does not this fact indicate that they have received a forced education or instruction and that they can not profit by their acquired knowledge in the State institutions?

Brother JUSTINUS. It would be unjust to base a judgment upon incomplete data.

Individual failures are, of course, possible, and no class of persons is privileged to preserve its members from failure. I have already given statistics upon this point for the scholars from Passy, who were admitted to the École Centrale in the proportion of 119 to 134, or 89 per cent, and who obtained six times the rank of "major" and twice that of "sous-major" from 1887 to 1898, and then graduated with excellent numbers as engineers. At the School of Mines at St. Étienne during the last ten years we have had 11 "majors" out of 20. Out of a total of the first 10 of each year, or $10 \times 10 = 100$ in all, we had 51 of our scholars on admission and 53 on leaving. There has not, therefore, been a falling off, but an advance. I will close with some statistics which are quite recent and absolutely demonstrative. The entrance examination at the School of Mines at St. Étienne in July-August, 1898, gave the following classification for our 19 students who were admitted: 1, 2, 3, 8, * * * and 37, or a total of 382 for the total of the places obtained. Now, at the classing of 1899 within the school, these same scholars obtained the following rating: 1, 2, 4, 5, 6, 8, * * * and 30, or a total of only 283 for all the places. There was, therefore, an advance of 99 points (382 — 283) upon the brilliant results of the entrance examination. Forty-nine of our scholars are now in the School of Mines, and 287 have already the engineer's diploma. Many are holding honorable positions (engineers in chief or directors) in the districts of the Loire, Aveyron, Gard, Nord, and of Pas de Calais.

In closing this communication, Mr. Chairman, I wish to assure you most sincerely that you will always find us ready to give you a patriotic cooperation in everything concerning the important work of national education.

The Chairman. Mr. Secretary-General, we thank you for your very interesting deposition.

CHAPTER XXII.

CONFEDERATE TEXT-BOOKS (1861–1865):

A PRELIMINARY BIBLIOGRAPHY.

By Stephen B. Weeks, Ph. D., *Santa Fe, N. Mex.*

[Additions to this list are respectfully solicited.]

I. Primers.
II. Spellers.
III. Readers.
IV. Arithmetics.
V. Grammars.
VI. Geographies.
VII. Dictionaries.
VIII. Books on foreign languages.
IX. Sunday-school and other religious books.
X. Miscellaneous.

Under each of these divisions the arrangement is first by years, then alphabetically by States in which publication was made, beginning with Alabama.

Capitals have been used: (1) When they appear on the title page as such, and followed either by lower-case letters or small capitals; (2) for proper names and adjectives; (3) at the beginning of a sentence.

Designs, pictures, or other emblems are indicated.

The title page has been copied rather than the cover title, if it is to be had; differences between the two are indicated.

Size is marked in inches by actual measurement of the bound book on outside, over binding.

1. When the book has been seen the title page is given in full and uprights are used to indicate division of lines. 2. When the title of a published book is quoted from another source it is given as there found, with the source. 3. When the title has been made up from advertisements or other sources which are not conclusive as to publication, it has been put in [ ]. In such cases the writer has no further information whether the book in question was actually published or not.

He will be thankful for additions or corrections.

I.—Primers.

1861.

[Primer, by Mrs. S. A. Poindexter. Nashville: Southwestern Baptist Publishing House. 1861.]

Mentioned in De Bow's Review, Aug., 1861, p. 207.

[The Confederate Primer. Nashville, Tenn. 1861.]

Published by an association of Southern teachers. Mentioned by So. Lit. Messenger, Oct., 1861.

1862.

Our Own Primer, by Richard Sterling and J. D. Campbell. Greensboro: Sterling, Campbell & Albright. 186[2?]. 12 mo. pp. 34.

Announced on the cover to Our Own Third Reader, published in 1862. Mentioned in Raleigh Register, July 2, 1862, as published.

Copy in Harvard University Library.

1863.

[The Child's Primer. Atlanta, Ga.: J. J. Toon & Co. About 1863.].

Announced on the back of the Revised Elementary Speller as "already issued" in a large edition.

Dixie | primer. | For the little folks. | By Mrs. M. B. Moore. | [Cut of lute, music, urn, etc.] | Second edition. | Raleigh, N. C.: | Branson, Farrar & Co., | Hillsborough street. 1863.

Collation: Title, 1 l., preface on verso; alphabet and text, 3–26+ [2]. 9 ill. Size, 5¾x4½ in.

Copies seen: Congress.

"Third edition, contains numerous engravings," and was published in 1864. Precedes the First Dixie Reader.

First edition, 10,000 copies.

Illustrated Alphabet. | [Cut of boy and girl]. | Lith: & Published by B. Duncan & Co., Columbia, S. C. [1863?]

Size, 6½x4¾ in. Eight unnumbered leaves illustrating the alphabet, and figures, with stag, horse, boys, dog, bowl, fruits, flowers, and fox, in colors, mostly blue.

Copies seen: Congress.

Primer, in German. Richmond, 1863. 24°.

Bound in wall paper. Title from Wynne's Sales Catalogue, 1875, p. 20.

The Confederate Rhyming Primer. Richmond, Va.: George L. Bidgood. 1863. pp. 24.

Designed as an "introduction to the Confederate spelling book" and announced on the cover of Smith's English grammar as "now ready." *See also* Sabin No. 15254 and So. Lit. Mess., April, 1864.

Southern Pictorial Primer; combining instruction with amusement, and designed for use in schools and families. Richmond: West & Johnston. 1863.

Announced in the "list of new publications" on the cover to Marius, published in 1863.

Mentioned in So. Lit. Mess., June, 1863. "This popular little work has been improved by the addition of several spelling lessons, and a number of new engravings."

Third edition of 10,000 advertised by West & Johnston, Richmond Whig, May 3, 1864.

1864.

Burke's | picture primer; | or | spelling and reading | taught in an easy and familiar manner. | With numerous cuts. | [Twentieth thousand.] | [Cut of stores.] | Macon, Georgia: | Burke, Boykin & Co. | 1864.

Cover title: Burke's | picture primer; | or, | spelling and reading | taught in an easy and familiar manner. | With numerous cuts. | Altered from an English primer. | [Twentieth thousand.] | Macon, Georgia.: | Burke, Boykin & Co. | 1864.

Collation: Title, 1 l, cut of ship on verso; text, 3–64; 106 ills. Size, 5¾x4 in.

Copies seen: Weeks.

Some of these pictures had no doubt seen service already as advertisements.

Illustrated Primer. Richmond: Geo. L. Bidgood. 1864 (?)

"Beautifully colored."

Announced as ready on the cover to the Confederate First Reader, published in 1864.

The | Confederate primer. | [Cut of William and Mary College before the fire of 1859.] | [2-line quotation.] | Fourth edition. | Richmond: | George L. Bidgood, | Bookseller and Publisher, 121 Main st. | 1864.

Collation: Title 1 l.; text, 3–32. Size, 5x3¾ in. 47 ills.

Copies seen: Congress.

A MS. note in the copy in the Congressional Library says that the work is by R. M. Smith. [Richard M. Smith, professor of ancient and modern languages and natural sciences in Randolph Macon College.]

The paper cover in which the booklet is bound is wall paper, the title being put on the reverse or wall side.

There are 47 pictures, some of which had evidently been made to do service in illustrating advertisements.

Fourth edition announced as ready on the cover to Confederate First Reader, published in 1864.

The | child's first book. | By | Campbell and Dunn. | Approved by the Educational Association of Virginia | through their committee. | Richmond: | Ayres & Wade. | 1864.

Collation: Title, 1 l.; preface, 1 l., with ill. on verso; text, 5–48; ills. Size, 7¼x4½ in.

Copies seen: Education.

By Rev. William A. Campbell and William R. J. Dunn, esq.

The Virginia Primer. Richmond. 1864. 24°. Cuts.

Title from Wynne's Sales Catalogue, p. 28.

The Southern Primer, for schools and families: illustrated. Thirtieth thousand.

Advertised in Whig, June 24, 1864.

The New Texas Primer. Houston: E. H. Cushing. [1863–1865.] pp. 24.

Mentioned in Raines's Bibliography of Texas, p. 59; date of publication not clear; belonged to the New Texas Series of schoolbooks.

II. Spellers.

1861.

[Elementary Speller and Reader, by Mrs. S. A. Poindexter. Nashville: Southwestern Baptist Publishing House. 1861.]

Mentioned in De Bow's Review, August, 1861, p. 207.

First Confederate Speller. Nashville, Tenn. 1861.

Published by Association of Southern Teachers.

Mentioned in So. Lit. Mess., October, 1861.

Second Confederate Speller. Nashville, Tenn. 1861.

Published by Association of Southern Teachers.

Mentioned in So. Lit. Mess., October, 1861.

Our own | spelling book; | for the use of | schools and families. | By | Richard Sterling, A. M., | principal of Edgeworth Female Seminary, | and | J. D. Campbell, A. M., | prof. of mathematics and rhetoric. | Third edition. | Greensboro, N. C.: | published by Sterling, Campbell & Albright. | Richmond, Va.: | W. Hargrave White. | 186– [year erased in copy used].

Collation: Title, 1 l.; preface, iii–iv; text, 5–112. Size, 6¼x4¼ in.

Copies seen: Weeks.

The Revised Elementary Spelling Book. | The elementary | spelling book, | revised and adapted | to the youth of the | Southern Confederacy, | interspersed with Bible readings on domestic slavery. | By | Rev. Robert Fleming. | [Vignette of Holy Bible] | Twenty-ninth thousand. | Atlanta, Georgia: | J. J. Toon & co., publishers. | Franklin steam printing house. | Edition] 1863. [40,000.]

Collation: Cover title: The | revised elementary | spelling-book. | A picture of Washington is added, size, 6¾x4 in.; 12 mo. Title 1 l.; dedication on verso; preface, analysis of sounds, etc., 3–13; text, 14–168. An adaptation of Webster's Spelling Book, with a dedication "to the parents and their children, and to the teachers and their pupils," and "to all the lovers of learning and Bible truth" in the Confederate States, and a warlike preface of 3 pages by Rev. Robert Fleming, dated at Thomasville, Ga.

Copies seen: Education.

1864.

Confederate Spelling Book, by Dr. Baird. Macon, Ga.: Burke, Boykin & Co., 186[4?].

Announced as ready on the cover to Burke's Picture Primer, published in 1864.

The | Dixie speller. | To follow the | first Dixie reader. | [Cut of books.] | By Mrs. M. B. Moore, | author of the Dixie series. | Raleigh, N. C.: | Branson & Farrar. | 1864.

Cover title: The | Dixie | elementary | spelling book. | For the use | of | common schools. | By | M. B. Moore. | Raleigh, N. C.: Branson & Farrar, | Fayetteville street. | 1864.

Collation: Title, 1 l.; preface, iii-iv; text, 5–120. Size, 7x4½ in. Ills.

Copies seen: Congress; Weeks.

This book is "revised from Webster and adapted to Southern schools. Webster's Elementary, leaving out all the Yankee phrases and illusions, is still a very good speller for Southern children. Such revisions and improvements have been made as seem necessary to make it fully Southern."

Edition, 10,000 copies.

A second edition of 500 copies was published after the war from stereotype plates, with illustrations.

The Virginia Spelling and Reading Book, arranged after the plan of John Comly, published by A. Morris, Richmond.

Mentioned in the Whig, August 12, 1864, also advertised as "just published."

Copy in Harvard Univ. Library. Richmond, 1864.

Chaudron's | spelling book, | carefully prepared for | family and school use, | [wood cut of Justice] | by | A. De V. Chaudron. | Mobile: | S. H. Goetzel. | 1865.

Collation: Two cuts fill up pp. 1 and 2; title, 1 l., 2 ills. on verso; to the public, p. [5]; text 6–48. *Size:* 7x4¼ in.

Copies seen: Congress, Education.

The Library of Congress copy is the fifth edition and fortieth thousand.

The Bureau of Education copy dated 1865 is fourth edition, thirtieth thousand.

Another edition, Mobile, 1864, 16 mo., pp. 48, is mentioned in Clarke's Bibliotheca Americana, 1893.

Note "to the public" dated December 1, 1863, year of first publication.

The New Texas Primary Speller. Houston: E. H. Cushing. [1863–65.]

Mentioned in Raines's Bibliography of Texas, p. 59; date of publication not clear; belonged to the New Texas Series of School Books.

The New Texas Spelling Book. Houston: E. H. Cushing. [1863–65.] pp. 96.

Mentioned in Raines's Bibliography of Texas, p. 59; date of publication not clear; belonged to the New Texas Series of School Books.

The New Texas Spelling Book. Revised and enlarged by the addition of a Speller and Definer upon a New Plan. For the use of schools and academies. Houston: E. H. Cushing. 1865. 16°. pp. 145.

Mentioned in Raines's Bibliography of Texas. No doubt a revised and enlarged edition of previous one.

The | Confederate | spelling book, | with | reading lessons for the young, | adapted to the | use of schools | or for | private instruction. | Fifth edition. | Richmond, Va.: | Published by George L. Bidgood. | 1865.

Collation: Title, 1 l.; preface, 3–4; text, 5–162. Size, 7⅜x4⅝ in. Ills.

Copies seen: Education; Congress.

The third edition, published in 1863, had pp. 168.

Based on Webster.

A MS. note in the Congressional Library copy says this was prepared by R. M. Smith, professor in Randolph-Macon College.

The fourth edition was announced on the cover to the fourth edition of the Confederate primer (published 1864) as "in press, and will be ready next month."

Three editions were published between May and December, 1863. Advertisement in North Carolina Christian Advocate, December 9, 1863.

The Virginia Speller and Reader. Richmond. 1865. 24°.

Title from Wynne's Sales Catalogue, 1875; p. 25.
Copy in 8° in Harvard University Library.

III.—Readers.

1861.

[Philological Reader, Second Book, by Mrs. S. A. Poindexter. Nashville: Southwestern Baptist Publishing House. 1861.]

Mentioned in De Bows' Review, August, 1861; p. 207.

[Philological Reader, Third Book, by Mrs. S. A. Poindexter. Nashville: Southwestern Baptist Publishing House. 1861.]

Mentioned in De Bows' Review. August, 1861; p. 207.

[Philological Reader, Fourth Book, by Mrs. S. A. Poindexter. Nashville: Southwestern Baptist Publishing House. 1861.]

Mentioned in De Bow's Review, August, 1861; p. 207, which adds that the series had received the approval of "a large number of practical teachers and scholars."

1862.

Our Own First Reader. For the use of schools and families, by R. Sterling and J. D. Campbell. Greensboro, N. C. 1862. 12 mo.

Mentioned in Clarke's Bibliotheca Americana, 1873.

Our own | second reader; | for the use of | schools and families. | By | Richard Sterling, A. M., | Principal of Edgeworth Female Seminary, | and | J. D. Campbell, A. M., | Prof. of Mathematics and Rhetoric. | Greensboro, N. C.: | published by Sterling, Campbell & Albright. | Richmond, Va., W. Hargrave White. | 1862.

Collation: Title, 1 l.; preface and suggestions to teachers, iii–vi; contents, vii–viii; text 9–168. Size, 7¼x4½ in.
Copies seen: Weeks.

Our own | third reader; | for the use of | schools and families. | By | Richard Sterling, A. M., | principal of Edgeworth Female Seminary | and | J. D. Campbell, A. M., | prof. of mathematics and rhetoric. | [Design.] | Greensboro, N. C.: | published by Sterling, Campbell & Albright. | Richmond, Va., W. Hargrave White. | 1862.

Collation: Title, 1 l.; preface, p. iii; punctuation, iv–vi; contents, vii–viii; text, 9–208. Size, 6¾x4½ in.
Copies seen: Weeks.
Same as the stereotyped edition following, save that the latter has a few more selections.

1863.

The First Reader, by A. De V. Chaudron, Mobile. 1863.

Mentioned by So. Lit. Mess., November-December, 1863.

Our own | first reader; | for the use of | schools and families. | By | Richard Sterling, A. M., | principal of Edgeworth Female Seminary, | and | J. D. Campbell, A. M., | prof. of mathematics and rhetoric. | Second edition. | [Design.] | Greensboro, N. C.: | published by Sterling, Campbell & Albright | Richmond, Va., W. Hargrave White. | 1863.

Collation: Title, 1 l.; preface, iii–iv; text, 5–72. Size, 6½x4¼ in.
Copies seen: Education.
Not illustrated for the reason that such engravings as were proper "could not be furnished in the Confederate States."

Our own | first reader; | for the use of | schools and families. | By | Richard Sterling, A. M., | principal Edgeworth Female Seminary, | and | J. D. Campbell, A. M., | professor of mathematics and rhetoric. | Stereotype edition. | Greensboro, N. C.: | Published by Sterling, Campbell & Albright. | Richmond, Va.: W. Hargrave White.

Collation: Title, 1 l.; preface, v–vi; text, 7–96. Ills. Size, 7x4½ in.

Copies seen: Education; Weeks.

Copyrighted in 1862 and probably first issued in that year. The present edition is from new plates and contains a few more lessons than that of the preceding title.

Our own | third reader: | for the use of | schools and families. | By | Richard Sterling, A. M., | principal of Edgeworth Female Seminary, | and | J. D. Campbell, A. M., | professor of mathematics and rhetoric. | Stereotye edition. | Greensboro, N. C.: | published by Sterling, Campbell & Albright. | Richmond, Va.: W. Hargrave White.

Collation: Title, 1 l.; preface, 3–4; on punctuation, 5–10; contents, 11–12; text, 13–224; ills. Size, 7x4¾ in.

Copies seen: Education.

Copyrighted in 1862.

These are said to have been the first books stereotyped in the Confederate States. As a matter of fact the stereotyping was done in Edinburgh, and the first edition printed there.—Third Reader, p. 224.

The | First Dixie Reader; | designed to follow | the | Dixie primer. | By | Mrs. M. B. Moore. | Raleigh: | Branson, Farrar & Co. | 1863.

Cover title: The | First Dixie Reader; | to follow | the | Dixie primer. | By | Mrs. M. B. Moore, | Author of the Dixie Series. | [Farm Scene.] | Raleigh: Branson, Farrar & Co. | 1863.

Collation: Title, 1 l.; preface, 1 l.; note to teachers, 1 l.; text, 7–62 +1 l; size, 5¼x4¼.

Copies seen: Education; Weeks.

Another cover title (Weeks's copy): The | First Dixie Reader, | to follow | the | Dixie primer. | By | Mrs. M. B. Moore, | author | of | the Dixie series. | Raleigh: | Branson, Farrar & Co. | 1863.

First Edition, 10,000 copies.

The | First Dixie Reader; | designed to follow | the | Dixie primer. | By | Mrs. M. B. Moore. | Raleigh: | Branson, Farrar & Co. | 1863.

Cover title: The | first Dixie reader; | to sueceed | the | Dixie primer. | By | Mrs. M. B. Moore. | Second Edition. | [Cut of train of cars. Some copies have a sheaf of wheat instead.] | Raleigh, N. C.: | Branson & Farrar, | Fayetteville street. | 1864.

Collation: Title, 1 l.; preface, 1 l.; note to teachers, 1 l.; text, 7–62+[1]; size, 5¾x4¼.

Copies seen: Congress; Weeks.

Confederate Publication. New Texas Series. The New Texas Primary Reader. Houston: E. H. Cushing. 1863. 12°. pp. 96.

Mentioned in Raines's Bibliography of Texas, p. 59; copyrighted in 1863; reentered in 1865.

Chaudron's series. | The | first reader, | designed | for the use of primary schools. | Second edition. | Adapted for use in the Public Schools of Mobile. | By A. De V. Chaudron. | Mobile, Ala.: | W. G. Clark & Co., publishers. | 1864.

Collation: Title, 1 l.; publishers' notice to first and second editions, 3–4; preface, 5–6; text, 7–57+[1]+1 l. (cover); size, 7x4⅜ in.; 1 ill.

Copies seen: Congress.

Publishers' note to first edition is dated October, 1863, and to second edition, June 1, 1864.

Chaudron's series. | The second reader, | designed | for the use of primary schools. | Second edition. | Adapted for use in the Public Schools of Mobile. | By A. De V. Chaudron. | Mobile, Ala.: | W. G. Clark & Co., publishers. | 1864.

Collation: Cover title as above; size, 7x4¼ in. Title, 1 l.; publishers' notice, 1 l.; prefaces, 5–6; text, 7–96.

Copies seen: Education.

Publishers' notice is dated October, 1863.

Chaudron's Series. Chaudron's Third Reader. Mobile, Ala.: W. G. Clark & Co. 1863 or 1864.

Title from advertisement on cover of second reader.
A second edition was published.
By Mme. A. De V. C. She was a native of Mobile.

The | first reader, | for | Southern schools. | Raleigh: | published by the N. C. Christian Advocate | Publishing Company. | 1864.

Collation: Title, 1 l.; to teachers, p. 3; text, 4–24. Size, 7⅛ x 4⅜ in.
Copies seen: Congress; Weeks.

Readers:

The N. C. Christian Advocate Publishing Company announced in 1864 that "the company has in course of publication a series of readers for Southern schools."—(Cover to the "First reader for Southern Schools.") It does not appear that any other numbers were printed.

The New Texas School Reader, designed and dedicated to the Children of Texas. Houston: E. H. Cushing. 1864. 12°. pp. 184.

Mentioned in Raines's Bibliography of Texas, p. 59. Belonged to the New Texas Series of School books. Deals almost entirely with Texas subjects.

The | Confederate first reader: | containing | selections in prose and poetry. | As reading exercises | for the younger children | in the | schools and families | of the Confederate States. | Richmond, Va. | published by G. L. Bidgood, | No. 121, Main Street. | 1864.

Collation: Title, 1 l.; preface, p. iii: to teachers, p. iv; contents, v-viii; text, 9–120. Size 7¼ x 4¼ in.
Copies seen: Education; Congress.
Designed as a successor to the Confederate spelling book.
A MS. note in the Congressional Library copy says this was prepared by R. M. Smith, professor in Randolph Macon College.

The Confederate Reader, Part I. Richmond: George L. Bidgood. 1864. (?)

Announced as ready on cover to the Confederate first reader, published in 1864.
The Confederate Reader was announced on the cover to the fourth edition of the Confederate primer (published in 1864) as "in press and will be ready next month."
A "series of Confederate Readers" was announced by Bidgood as "nearly ready" in So. Lit. Mess., March, 1864.

The Confederate Reader. Richmond. 1864. 8°.

Copy in Harvard Univer. Library.

The Virginia Series of Readers. The First Reader. 1864. 12°.

Copy in Harvard Univer. Library.

The First Reader, edited by a distinguished Southern teacher. Published by A. Morris, Richmond.

Mentioned in the Whig, Aug. 12, 1864; also advertised as "just published."

1865.

[Chaudron's Series. Chaudron's Fourth Reader. Mobile, Ala.: W. G. Clark & Co.]

Title from advertisement on cover to second reader, where it is announced on Dec. 1, 1864, that it "will be published at an early date."

[Chaudron's Series. Chaudron's Fifth Reader. Mobile, Ala.: W. G. Clark & Co.]

Title from advertisement on cover to second reader, where it is announced on Dec. 1, 1864, that it "will be published at an early date."

Our own | fourth reader: | for the use of | schools and families. | By | Richard Sterling, A. M., | Principal of Edgeworth Female Seminary. | Greensboro, N. C.: | published by Sterling & Albright. | New York: Owens & Agar.

Collation: Title, 1 l.; preface, iii; contents, iv-vi; introduction, vii-xvi; text, 17-319. ills. Size, 7⅛ x 5 in.

Copies seen: Education; Weeks.

Prepared for use in Confederate schools but not published until 1865, and copyrighted in the United States instead of Confederate States.

Gives 103 selections.

The original idea of the publishers (see cover to N. C. Journal of Education for Feb., 1862) was that this volume should consist of "historical and descriptive sketches of North Carolina, prepared by Rev. C. H. Wiley." Had this program been carried out, they would no doubt have made use of his North Carolina Reader, first published in 1851. It was the further purpose of the publishers to secure "similar sketches of other States, to be used as the fourth reader of our series in those States." Why this program was abandoned I do not know.

[Our Own Fifth Reader, by Richard Sterling and J. D. Campbell.]

Announced by Sterling, Campbell & Albright, of Greensboro, on the cover to stereotype edition of Our Own Third reader (published in 1863?), as "in preparation;" but as the fourth reader was not published until the end of the war, it probably never appeared. It was to be "a rhetorical reader for the more advanced classes in academies and high schools," and to consist chiefly "of selections from the writings of authors of the highest literary attainments in the Confederate States."

The | first Dixie reader: | designed to follow the | Dixie primer. | By Mrs. M. B. Moore. | Third edition. | Raleigh, N. C.: | Branson and Farrar, | Fayetteville street. | 1866.

Collation: Title, 1 l.; preface on verso; note to teachers, p. 3; text, 4-48. *Size*, 7¼ x 4⅝ in., ills.

Copies seen: Education; Weeks.

A post bellum edition of a Confederate book.

IV.—Arithmetics.

1861.

[Arithmetic, by Prof. M. H. Allis.]

Announced in De Bow's Review, June, 1861, as to be issued "in July next."

Arithmetic, by M. P. Caldwell [Macon, Ga.?, J. W. Burke & Co.?]. 1861. pp. 178.

A stereotyped edition was printed in 1867 by J. W. Burke & Co., Macon, Ga.

Mentioned in Greenwood & Martin's Notes on the History of American Text-books on Arithmetics.

Our own | primary arithmetic. | By | S. Lander, A. M., | Greensboro, N. C.: | published by Sterling, Campbell & Albright | Richmond, Va., W. Hargrave White. | 1863.

Collation: Title, 1 l., preface on verso; text, 3-95. Size, 6¾ x 4½ in.

Copies seen: Congress.

This was the first edition; there were not many changes in the second; a little new matter was added.

Our own | primary arithmetic. | By | Rev. S. Lander, A. M., | principal of Lincolnton Female Seminary. | Second edition. | Greensboro, N. C.: published by Sterling, Campbell & Albright. | Richmond, Va.: W. Hargrave White. | Columbia, S. C.: Townsend and North. [Copyright, 1863.]

Collation: Title, 1 l., preface and copyright notice on verso; text, 3-96. Size, 6⅝ x 4⅛ in.

Cover title same as above, with illustration of train of cars.

Copies seen: Education; Congress.

Our own | school arithmetic. | By | S. Lander, A. M. | Greensboro, N. C.: | published by Sterling, Campbell & Albright. | Richmond, Va., W. Hargrave White. | 1863.

Title, 1 l.; preface, iii-iv; contents, v-vi; text, 7-223+[1]. Size, 6¾ x 4¾ in.

Copies seen: Education; Congress; Weeks.

This is said to be "perhaps the first Arithmetic whose authorship and publication belong exclusively to the Confederate States." Preface dated Lincolnton, N. C., Aug. 1, 1863.

The Southern Confederacy Arithmetic. By Rev. Charles E. Leverett, A. M., Columbia, S. C. Augusta, Ga., 1864. pp. 218.

The last 12 pp. are devoted to single-entry bookkeeping.
Title from Greenwood & Martin's Notes on the History of American Text-books on Arithmetics.

An | elementary | arithmetic, | designed | for beginners: | embracing | the first principles | of | the science. | By L. Johnson, A. M., | professor of mathematics in Trinity College. | Raleigh, N. C., | Branson & Farrar, | Fayetteville street. | 1864.

Collation: Title, 1 l.; preface, 1 l.; text, 5–154. Size, 6¾ x 4¼.
Copies seen: Weeks.
"The great demand at this time for books of an elementary character in the Southern Confederacy has called forth this little volume. * * *
"Should these pages be deemed suitable, by an intelligent and discriminating public, for an introduction into our primary schools, we promise shortly a work of higher grade, embracing all the modern improvements in the science of arithmetic."—*Preface.*
The other volumes thus promised were never published.
Edition of Johnson's Arithmetic, 10,000 copies, of which nearly all were destroyed by Sherman's army.
Some of the examples are warlike:
"If one Confederate soldier can whip 7 Yankees, how many soldiers can whip 49 Yankees?"—p. 44.

The Southern School Arithmetic; or, Youth's Assistant. By A. & J. Fowler. Revised by M. Gibson, Richmond, 1864. 12 mo.

Noticed in Clarke's Bibliotheca Americana, 1893.
Announced in Whig, Aug. 9, 1864. Copy sent them by West & Johnston.
Stereotyped edition.

Ayers & Wade, the advertisers of Campbell & Dunn's Child's First Book, say that the publication of an arithmetic, offered by the committee of the Virginia Educational Convention, which met in Petersburg, December, 1863, "has been delayed, owing to the want of suitable type. It may be expected before long."—"The arithmetic presents peculiarly strong claims to the public confidence. As compared with similar works already before the public, its superiority is evident in the combined simplicity and perspicuity of its explanations, and the conciseness and completeness of the rules."

[Colburn's Mental Arithmetic. Mobile, Ala.: W. G. Clark & Co.]

An advertisement on the cover to Chaudron's Second Reader, dated December 1, 1864, announces that "a new and revised edition," "prepared expressly for use in Southern schools," was in press.

Browne's | Arithmetical Tables, | combined with | easy lessons | in | mental arithmetic | for beginners. | By rev. Geo. Y. Browne, A. M. | Tuscaloosa, Ala. | Atlanta, Ga.: | Franklin Printing House. | J. J. Toon, publisher and proprietor. | 1865.

Collation, Title, 1 l.; preface, 1 l.; introduction, v–viii; text, 9–32. Size, 6¼x3¾ in.
Copies seen: Education.

[Our Own Mental Arithmetic, by S. Lander, A. M.]

Announced by Sterling, Campbell & Albright, Greensboro, on cover to the stereotype edition of Our Own Third Reader (published in 1863?) as "in course of preparation."

V.—Grammars.

1861.

Our Own Primary Grammar. By C. W. Smythe, Greensboro: Sterling, Campbell & Albright.

D. pp. 72. 25 cents per copy.
Advertised in Raleigh Register, December 11, 1861, as "just published."

1862.

An | Analytical, Illustrative, and Constructive | grammar | of | the English language | accompanied by several original diagrams, exhibiting an occu- | lar illustration of some of the most difficult principles | of the science of language; also, an extensive glos- | sary of the derivation of the principal scien- | tific terms used in this work, | in two parts, | for the use of every one who may wish to adopt it. | By | rev. prof. Brantley York. | Third edition. | Multum in parvo. | [Two lines quotation] | Raleigh: W. L. Pomeroy, publisher. 1862.

Collation: Cover title same as above. Size, 8⅝x5⅜ in. Title, 1 l.; dedication, 1 l.; testimonials, v-viii; prefaces, ix-xii; contents, xiii-xv; text, 21-219.

Copies seen: Weeks.

The first edition of this work was published before the war.

1863.

First book | in | composition, | applying the principles of grammar | to the art of | composing: | also, | giving full directions for punctuation; | [cut of book] | especially designed for the use of | Southern schools, | by L. Branson, A. M. | Raleigh: Branson, Farrar & co. | 1863.

Collation: Title, 1 l.; preface, 1 l; contents, v-vi; 1 l blank; text, 9-139+ [1]. Size, 7⅜x5 in.

Copies seen: Congress; Education; Weeks.

Edition, 5,000 copies.

Our own | elementary grammar, | intermediate between | the primary and high school grammars, | and especially adapted to the wants of | the common schools. | By Charles W. Smythe, A. M., | author of a series of English grammars, and principal | of the Lexington English and classical school. | Greensboro, N. C., | published by Sterling, Campbell & Albright. | Richmond, Va.: W. Hargrave White. | Columbia, S. C.: Townsend & North. | 1863.

Collation: Title, 1 l.; preface, 1 l; text, 5-148; size, 7x4½ in.

Copies seen: Congress; Weeks.

Designed as a sequel to the primary grammar and "embracing a complete elementary statement of the subject."

Smith's English grammar, | on the | productive system. | Revised and improved, and adapted to | the use of schools | in the | Confederate States. | Richmond, Va.: | published by George L. Bidgood. | 1863.

Collation: Title, 1 l.; preface, 1 l.; text, 7-200. Size, 7⅛x4½.

Copies seen: Education. Copy in Harvard University Library is dated 1864.

The twentieth thousand was announced on the cover to the fourth edition of the Confederate Primer (published in 1864) as "in press, and will be ready next month."

F. P. Harper's catalogue No. 62, mentions a copy printed in 1864.

The North Carolina Journal of Education for March, 1864, has a scathing article on the inaccuracy of this book and on reprinting it for the Confederate States.

Our own | primary grammar, | for the use of beginners. | By Charles W. Smythe, A. M., | author of "a series of English grammars," and | principal of the Lexington English | and classical school. | Third edition. | Greensboro, N. C.: | Sterling, Campbell & Albright. | Richmond, Va.: W. Hargrave White. | Columbia, S. C.: Townsend & North. | 1863.

Collation: Title, 1 l.; preface, p. 3; suggestions to teachers, p. 4, text, 5-72. Size, 7¼x4½ inches.

Copies seen: Congress.

Announced in North Carolina Journal of Education, October, 1861, and said by that journal to be the "first North Carolina school book that has made its appearance since commencement of the war."

New English Grammar, by Dr. Dagg, Macon, Ga.: Burke, Boykin & Co. 186[4?]

Announced as ready on the cover to Burke's Picture Primer, published in 1864.

[Our Own High School Grammar, by C. W. Smythe, A. M. Greensboro: Sterling, Campbell & Albright. 186[4?]. 12 mo.]

Announced as "in press" on cover to stereotype edition of Our Own Third Reader (published in 1863[?]).

In a letter to Dr. Wiley, dated July 27, 1864, Mr. Smythe says that the Spirit of the Times at Raleigh then had his High School Grammar in press.

An | analytical and practical | grammar | of the | English language. | By Rev. Peter Bullis, D. D. | revised by | Rev. B. Craven, D. D. | Raleigh, N. C.: | published by the N. C. Christian Advocate | Publishing Company. | 1864.

Collation: Title, 1 l.; preface, 1 l.; text, 5-192. Size, 7x4½ in.

Copies seen: Weeks.

Edition, 5,000 copies.

The editorial changes were evidently slight, as "This edition can be used without difficulty in connection with those books by the same author now in the country."

York's | English grammar, | revised and adapted | to | Southern schools. | By | rev. Brantley York. | Third edition. | Raleigh, N. C.: | Branson, Farrar & co., | Fayetteville street. | 1864.

Collation: Cover title same, save that 1863 appears in place of 1864 as date of publication. Size, 8x5¼ in. Title, 1 l.; preface, iii-iv; 1 l. blank; contents, vii-ix; text, 1-120 + 1 l, errata (on verso).

Copies seen: Education.

This book is an introduction to the Illustrative and Constructive Grammar.

The preface is dated "York Collegiate Institute, North Carolina, October, 1860," and we may presume that this was about the date of publication of the first edition.

Advertised in the Standard for January 6, 1863, as one of the firm's "new publications."

The New Texas Grammar. Houston: E. H. Cushing. [1863-65.]

Mentioned in Raines's Bibliography of Texas; date of publication not clear; belonged to the New Texas Series of school books.

Louisiana | English grammar. | Published by order of | his excellency | Henry W. Allen, | governor of Louisiana. | Shreveport, La. | Printed at the Office of the South-Western. | 1865.

Size, 7⅞x5½ inches, pp. 100.

"This grammar is compiled from the 'New English Grammar' of Roswell C. Smith, whose elementary school books have become so deservedly popular. The style of instruction herein taught, is called the 'Productive system,' and is eminently adapted to beginners and children of tender years. It is published by order of His Excellency the Governor of Louisiana.

"SHREVEPORT, LA., 1865."—*Preface.*

Title furnished by William Beer, esq.., Howard Memorial Library, New Orleans.

VI.—GEOGRAPHIES.

1863.

The | geographical reader, | for the | Dixie children. | By Mrs. M. B. Moore. | Raleigh: | Branson, Farrar & co., Publishers. | Biblical Recorder print. | 1863.

Collation: Title, 1 l.; preface, p. 3; note to teachers, p. 4; text, 5-48 (last six pages advertisements). Size, 8x7 in. Six maps, uncolored. Cover title same, with vignette.

Copies seen: Education; Weeks.

"The first part of this work is intended to be used as a reader. The second is to be studied as usual. The object of this arrangement is to make the child familiar with geographical terms before he begins to study geography."—Note to teachers. Edition, 10,000 copies.

1864.

Primary geography, | arranged as a | reading book | for | common schools, | with | Questions and Answers Attached. | By M. B. Moore. | (Second edition.) | Raleigh, N. C., | Branson & Farrar. | Fayetteville street. | 1864.

Collation: Title, 1 l.; preface, p. 3; note to teachers, p. 4; text, 5-47+[1], no advertisements, as in 1863 edition.

Cover title: Primary geography, | arranged as a | reading book, | with | questions and answers attached. | [Vignette.] | By Mrs. M. B. Moore. | Second edition. | Raleigh, N. C., Branson & Farrar, | Fayetteville street. | 1864.

Copies seen: Education; Weeks; Congress.

Edition, 10,000 copies.

EXTRACTS.

THE UNITED STATES.

"This was once the most prosperous country in the world. * * * In the meantime both English and American ships went to Africa and brought away many of those poor heathen negroes and sold them for slaves. Some people said it was wrong and asked the King of England to stop it. He replied that 'he knew it was wrong; but that slave trade brought much money into his treasury, and it should continue.' But both countries afterwards did pass laws to stop this trade. In a few years, the Northern States finding their climate too cold for the negro to be profitable, sold them to the people living farther south. Then the Northern States passed laws to forbid any person owning slaves in their borders.

"Then the Northern people began to preach, to lecture, and to write about the sin of slavery. The money for which they had sold their slaves was now partly spent in trying to persuade the Southern States to send their slaves back to Africa. And when the Territories were settled they were not willing for any of them to become slaveholding. * * *

"In the year 1860 the Abolitionists became strong enough to elect one of their men for President. * * * So the Southern States seceded. * * *

"This country possesses many ships, has fine cities and towns, many railroads, steamboats, canals, manufactures, etc. The people are ingenious and enterprising, and are noted for their tact in 'driving a bargain.' They are refined and intelligent on all subjects but that of negro slavery; on this they are mad" (pp. 13, 14).

SOUTHERN CONFEDERACY.

"This is a great country! The Yankees thought to starve us out when they sent their ships to guard our seaport towns. But we have learned to make many things; to do without others. * * * The Southern people are noted for being high-minded and courteous" (p. 14).

The trust of the Southern people in the Almighty is brought out in the following questions and answers, which were to serve as a review of the reading selections of the book:

"Q. What kind of men should we elect to govern our country?

"A. Good and wise men.

"Q. Why?

"A. 'When the righteous are in authority, the people rejoice, but when the wicked beareth rule the people mourn.'

"Q. Where do you learn this?

"A. From the Bible.

"Q. Will God curse a nation because of wicked rulers?

"A. He says he will."

The first edition, 1863, stopped with review lesson No. 10 (pp. 38–39). In the 1864 edition 18 additional lessons were added, making 28 in all. That the tone of the first edition had not been warlike enough to give general satisfaction is shown by the following extract from the second:

"Q. Has the Confederate States any commerce?

"A. A fine inland commerce, and bids fair, sometime, to have a grand commerce on the high seas.

"Q. What is the present drawback to our trade?

"A. An unlawful Blockade by the miserable and hellish Yankee Nation" (p. 47).

It is believed that the two editions of this work represent the only geographies prepared, printed, and published in the Confederate States.

The history of the maps has been told me by Rev. Dr. L. Branson, the surviving publisher, as follows:

He says that he succeeded in finding, in one of the printing offices of the city, an old plate of a map of the United States. This plate was cut into sections and those illustrating the Southern States were used. In the first edition (1863) these maps appear in black only. In the 1864 edition the State boundaries are colored. This was done by hand after the maps had been printed.

A | geography for beginners. | By the | rev. K. J. Stewart | [cut of palmetto tree] | palmetto series. | Illustrated with maps and engravings. | Richmond, Va.: J. W. Randolph. | M.DCCC.LXIV.

Collation: Bastard title, 1 l.; folding map; text, 1 l.; preface, v–vi; contents, vii–viii; text, 1–223. Size, $7\frac{1}{8}$x$4\frac{3}{4}$. Maps and many illustrations.

Copies seen: Education.

This book is announced as the "forerunner" of a series. It seems to have been prepared in the Confederate States. Two sections are devoted to these States, pp. 40–53 and 180–197, the first being more historical and descriptive, the latter more economic in character. The intimate knowledge displayed in these sections would indicate the work of a native. It is evident, however, that the printing was done abroad. The maps have the name of George Philip & Son, London and Liverpool.

[A book of geographical questions.]

W. G. Clark & Co., Mobile, Ala., announce on Dec. 1, 1864, on the cover to Chaudron's second reader that a work of this character "adapted to any Atlas, and taking the place of the primary and intermediate geographies" was "in preparation."

VII. Dictionaries.

1864.

The | palmetto dictionary; | in which | the meaning of every word is clearly explained and | the sound of every syllable distinctly shown; | exhibiting the principles of | a pure and correct pronunciation. | [Cut of palmetto tree.] | A new edition, | carefully revised, corrected and enlarged. | Richmond, Va.: J. W. Randolph | 1864.

Collation: Title, 1 l.; preface, 1 l., with errata on verso; advertisement, dated Aug. 25, 1831, and advertisement to present edition, dated Jan. 1847, 1 l., pp. iii–iv; introduction, v–xx; text, 1–730 + 1 l.; port. of John Walker as frontispiece. Size: 6⅝x4¼.

Copies seen: Education.

Although this book bears a Richmond imprint, it is evident from its size, from the paper and type employed, that it was not printed there. If such had been the case, it would not have been necessary to call attention to the difference between English and Southern pronunciation; no rules would have been given to the Irish and Scotch "in order to obtain a just pronunciation of English," and the reference to Walker, the author, would have been different.

The work is unmistakably English. The copy used shows that the English title-page was cut out, and a new one, together with the preface inserted in its place. It is probable that this title-page and preface, as well as the binding, was all done in England.

The preface is as follows:

"This Dictionary is presented to the people of the Southern States as the basis of a future one, which may embody the words, pronunciation, and meanings that are adopted and used by our best speakers and writers. And whereas no one person is competent to determine these things for the whole nation, the attention of teachers, professors, and all who desire to promote elegance and accuracy in the use of language among the rising generation, is respectfully invited to this book, and they are requested to mark down its errors, omissions, and redundancies, and send their notes and emendations to the Publisher, who will not only gladly avail himself of them, but cheerfully remunerate any whose labors may be productive of considerable advantage to the work.

"If this request is generally heeded, materials may be collected for a National Dictionary."

VIII. Books on Foreign Languages.

1862.

Prose specimens | for | translations into German, | with | copious vocabularies and explanations, | by | H. Apel. | London: | Trübner & Co., 60, Paternoster Row. | David Nutt; 270, Strand. | 1862.

Collation: Title 1 l.; dedication to Jefferson Davis, inserted, 1 l., with names of persons helping in the series, etc., on verso; preface, iii–vi (with errata on p. vi); contents, vii–viii; text 1–246. *Size:* 7⅜x4⅝ in.

Copies seen: Education.

This book was not originally a Confederate work. Its connection with the Confederacy was brought about by the dedication which was inserted after the publication and intended to increase its circulation in the Southern States:

"To his Excellency Jefferson Davis, President of C. S. A. This series of school books, selected from the best and most approved texts and authorities of modern usage, and prepared and adapted to the wants and institutions of the Southern States, is respectfully dedicated by yours, etc., K. J. Stewart, London, June 15th, 1863."

The verso of this dedication has:

"To the Hon. John Perkins, M. C., La. G. W. Randolph, late Sec. of War, Dr. John Prosser Tabb, Va. Prof. W. Gilham, Va. Mil. Institute, Rev. D. Lee Powel, and others, who have aided in originating and prosecuting this work, this series of school books is respectfully dedicated.

"Wilmington, N. C. Trübner & Co., 60, Paternoster Row, London. J. W. Randolph, Richmond, Va."

Deutches A. B. C., und Erstes Lesebuch, Richmond, 1863.

16°. Wall paper cover.
Henkel's Auction Catalogue, No. 825, April 19, 1899.

[Lefebvre's French Grammar.]

The Whig, Dec. 5, 1862, announced that Mr. Lefebvre, who had long had a female school in Richmond, was to undertake a "series" of schoolbooks. The first was to be a French Grammar. The other works, "such as Mr. L.'s experience as a teacher may suggest to him to be needed in our primary schools."

A | complete grammar | of the | French language; | with | exercises and dialogues, | for the use of schools and private students. | By | John Christison, | teacher of modern languages in the Dundee | public seminaries. | First C. S. A. from Fifteenth Edinburgh Edition. | Carefully revised by F. W. Rosier. | Richmond: | Geo. Dunn & co., publishers. | 1863.

Collation: Title, 1 l., with advertisement on verso; text, 3–143.
Size: 5⅞ by 3¾ in.
Copies seen: Education; Congress; Weeks.
Cover title: A | grammar | of the | French language: | by John Christison, | of Dundee college. | First C. S. A. Edition. | Richmond: | Geo. Dunn & com'y. | 1864.—Congressional Library copy.

First Latin book. Greensboro: Sterling, Campbell & Albright. 186[3?].

Announced on cover to Smythe's elementary grammar, published in 1863.
"Containing grammatical introduction, with exercises for translation and composition."

A grammar | of the | Latin language: | for the use of | schools, | with | exercises and vocabularies. | By Wm. Bingham, A. M., | of the Bingham School. | Greensboro, N. C.: | published by Sterling, Campbell & Albright. | Richmond, Va., W. Hargrave White. | 1863.

Collation: Errata, 1 l.; title, 1 l.; preface, iii–iv; text, 5–304.
Size: 6¾ by 4¾ in.
Copies seen: Weeks.
Copyrighted in 1862, but preface dated May 10, 1863.
The preface says that the object of the work was to supply "a practical first book in Latin, suited to the capacity of beginners, and yet full enough for a book of reference throughout a course of preparation for college. * * * The almost insuperable difficulties in the way of publication render it impossible to present the work in the most desirable style of binding and typography; but the author is assured that such defects as result from the terrible struggle through which our nation is passing will be readily overlooked. * * *
"The work, imperfect as the author is conscious that it is, is commended to the teachers of the Confederate States as an auxiliary, however feeble, in establishing Southern literary and intellectual independence."

Cæsar's commentaries on the Gallic war, with a vocabulary and notes. By Wm. Bingham, A. M., of the Bingham School. Greensboro, N. C.: Sterling, Campbell & Albright. 1864.

Reviewed in *Land We Love*, III, p. 178 (June, 1867). No copy seen.
Announced on cover to stereotype edition of Our Own Third Reader. Prof. C. L. Raper, in his The Church and Private Schools in North Carolina, says this was actually published in December, 1863, "with explanatory notes and a complete vocabulary."

First Latin book. By C. W. Smythe. [Raleigh?: 1864?.]

In a letter to Dr. Wiley, dated July 27, 1864, Mr. Smythe says that the printing of this work was then being carried on by "Hufham," of the Biblical Recorder, in Raleigh.

IX. Sunday School and Other Religious Books.

1861.

[Pocket edition of the New Testament. Nashville: Graves, Marks & Co. 1861.]

Mentioned in De Bow, December, 1861, p. 559.

The Whig, March 4, 1862, says that the Bible had been printed in the South, presumably during the war period.

A Confederate edition of the New Testament was printed in Atlanta, Ga., by J. J. Toon; the stitching, binding, etc., done in Raleigh, N. C., under the superintendence of Rev. W. J. W. Crowder.—Whig, September 9, 1862.

Copies of these editions bear the dates of 1862 and 1863.

1862.

Calvary catechism. Macon, Ga.: John W. Burke, agent. 1862.

Announced on verso of title-page to Child's Scripture Question Book as "just published."

Sunday-school bell. Macon, Ga.: J. W. Burke, agent. 1862.

Announced as "just published" on the verso of title-page of Child's Scripture Question Book, 1862.

Child's | Scripture question book. | Southern edition. | Macon, Ga.: | John W. Burke, agent. | 1862.

Collation: Title, 1 l., with announcement on verso; text, 3–194.
Size: $5\frac{7}{8}$ by $3\frac{1}{2}$ in.
Copies seen: Weeks.

The | Westminster | Shorter Catechism, | ratified by the | general assembly | of the | Presbyterian church | in the | United States, | at Augusta, Georgia, December 4, 1861. | Richmond: | Presbyterian committee of publication. | [n. d. 1862?.]

Collation: Cover title as above, 1 l.; no separate title; text, 3–32.
Size: $4\frac{1}{2}$ by $3\frac{1}{4}$ in.
Copies seen: Congress.

Catechism of the Wesleyan Methodists. Compiled and published by order of the British conference. Greensboro, N. C.: 1863. 16mo.

Mentioned in Clarke's Bibliotheca Americana, 1873.

Historical Scripture questions. Raleigh: Branson, Farrar & Co. 186[3?].

Announced on cover to First Dixie Reader, published in 1863.

A "book for Sabbath schools and for the camp; is pronounced by W. J. W. Crowder, tract agent, 'the best work of the sort within his knowledge.'"

The Biblical Catechism. Designed for Sabbath schools. By Rev. J. J. Lansdell. Raleigh: 1863. 16mo.

Mentioned in Clarke's Bibliotheca Americana, 1873.

Catechism for Little Children. Compiled and published by the Sunday school and publication board of the Baptist State convention of North Carolina. Raleigh: 1864. 32mo.

Mentioned in Clarke's Bibliotheca Americana, 1873.

Curious and useful questions on the Bible. Published by the North Carolina Board of Missions. Goldsboro, N. C: 1864. 16mo.

Mentioned in Clarke's Bibliotheca Americana, 1873.

Southern Zion's Songster; Hymns Designed for Sabbath School, Prayer and Social Meetings, and the Camps. Compiled by the Editor of the North Carolina Christian Advocate. Raleigh: 1864. 32mo.

Mentioned in Clarke's Bibliotheca Americana, 1873.

Sunday school questions | on the | four Gospels, | together with a | condensed harmony. | By | Basil Manly, Jr., | Greenville, South Carolina. | Volume 1. | Sabbath School Board of the So. Bapt. Con., | Greenville, S. C. | Baptist Sabbath S. Board of North Carolina, | Raleigh, N. C. | Raleigh: | printed at the Biblical Recorder office. | 1864.

Collation: Errata, 1 l.; title, 1 l.; preface, 1 l.; suggestions to teachers, v–viii; text, 9–150, with 1 page of advertisements on inside of cover.

Copies seen: Weeks.

The Child's Question Book, by B. Manly, jr., was probably the same as the preceding. It is announced on cover to Manly's Sunday School Questions on the Four Gospels (published 1864), by the S. S. Board of So. Bapt. Convention, Greenville, S. C., as to be published "in a few weeks."

This was a book of "questions and answers on a portion of the Gospels, designed for primary classes."

A brief catechism of Bible doctrine. By James P. Boyce. Greenville, S. C.: 1864. 16 mo.

Mentioned in Clarke's Bibliotheca Americana, 1873. Mentioned also in Riley's History of the Baptists in the Southern States east of the Mississippi.

[Confederate S. S. hymn book. By C. J. Elford.]

Announced on cover to Manly's Sunday School Questions on the Four Gospels (published 1864), by the S. S. Board of the So. Bapt. Convention; Greenville, S. C., as to be published "in a few weeks."

Little sunday school hymn book. Furnished by S. S. Board of the So. Bapt. Convention. Greenville, S. C.

Announced on cover of Manly's Sunday School Questions on the Four Gospels, published in 1864.

Mentioned in Riley's History of the Baptists in the Southern States east of the Mississippi, p. 279.

First edition, 14,000; 2d edition, 70,000.

Sunday School Primer.

Announced on cover to Manly's Sunday School Questions on the Four Gospels (pub. 1864) by Sunday School Board of Southern Baptist Convention, Greenville, S. C., as to be published "in a few weeks."

"Ten thousand Sunday School primers were soon exhausted, and a second edition was issued."—Riley's History of the Baptists in the Southern States east of the Mississippi, p. 279.

Confederate Sunday School Hymn Book. Greenville, S. C.: S. S. Board of the Southern Baptist Convention.

Mentioned in Riley's History of the Baptists in the Southern States east of the Mississippi, p. 279.

1st edition, 3,000; 2d edition, 10,000.

Little Lessons for Little People, by B. Manly, Jr. Greenville, S. C.: S. S. Board of Southern Baptist Convention.

Mentioned in Riley's History of the Baptists in the Southern States east of the Mississippi, p. 279.

Infant Class Question Book, by L. H. Shuck. Greenville, S. C.: S. S. Board of the Southern Baptist Convention.

Mentioned in Riley's History of the Baptists in the Southern States east of the Mississippi, p. 279.

The Sabbath School Wreath: | a collection of hymns, | compiled by a Sabbath School teacher. | [1 line quotation] | Raleigh: | Sunday School & Publication Board. | 1866.

Collation: Title 1 l, preface on verso; text, 3–104. *Size:* 5½ x 4 in.

Copies seen: Weeks.

"The great need for a suitable collection of Sabbath School hymns first led to the compilation of this little volume about three years ago. The favorable manner in which it has been received calls for the publication of this, the fourth edition."—Preface.

X. Miscellaneous.

1861.

Map of the Confederate States of America. Published by A. Morris, Richmond, Va., 1861. Size 28 x 30 inches.

Mentioned in N. C. Journal of Education, July, 1861, p. 224.

Hunten's Scales and Exercises for the Pianoforte. Richmond: George Dunn & Co., 1864.

Noticed in So. Lit. Mess. for Nov., Dec., 1863, Apr., 1864. In 2 parts of 16 pp. each.

Hunten's Instructions for the Pianoforte, in 2 parts. Richmond: Geo. Dunn & Co. 1864(?).

Announced on the cover of Christison's French Grammar. Same as previous title?

Burrowes' | pianoforte | primer, | containing the | rudiments of music, | calculated | either for private tuition, | or, | teaching in classes. | Revised and enlarged, with additions | and alterations, | by W. C. Peters, | Richmond, Va.: | J. W. Randolph, publisher. | 1864.

Collation: Title, 1 l.; preface, iii-iv; text, 5-47+[1]. *Size:* 7½ x 4⅝ in.
Copies seen: Congress.
This was a second edition.—Preface.

The | boys and girls | stories of the war | contents: | General Stonewall Jackson | Commodore Foot and Colonel | Small, etc., etc. | West & Johnston, Richmond.

Collation: Cover t. as above, the whole in a border, except place and publishers; n. d.; no separate t. p.; text, 1-32. *Size:* 4½ x 3 in. ills.

Copies seen: Congress; Weeks.

[General Physics.]

Dr. John LeContes' MSS. treatise on General Physics, nearly completed, was destroyed when Columbia was burned, and was never rewritten.—White's Cyclopædia of American Biography.

[Natural Philosophy.]

On works of this character Branson, Farrar & Co., Raleigh, N. C., say on the cover to Branson's First Book in Composition (published in 1863): "There is great difficulty in preparing a book of this kind at present, on account of the numerous cuts needed. Steady energy, however, can overcome all these things and give to our children all the books necessary."

[Elementary School Books.]

Mrs. S. A. Vaughan, of Atlanta, announced in the So. Lit. Messenger for December, 1861, that she was preparing an elementary series of school books.

Bowen's Works.

The Whig for Dec. 4, 1863, says:
"Among the patients in the Lunatic Asylum at Milledgeville, Ga., is the celebrated African missionary and writer, Dr. Bowen. Since he has been a patient he has written a spelling book and grammar which have been published, and is now engaged on a work on chemistry and philosophy."

Burke's Publications.

J. W. Burke, agent, Macon, Ga., announces in his edition of the Confederate Almanac for 1865: Smith's Grammar, Dagg's Grammar, Child's Scripture Question book, School of the Guides (military), Burke's Picture Primer, Confederate Spelling Book.

CHAPTER XXIII.

LIST OF EDUCATIONAL PERIODICALS IN THE UNITED STATES.

(1) ARRANGED BY STATES.

Alabama.

Birmingham, Educational Exchange, M., 1899, vol. 14.
Normal, Normal Index, W., 1899, vol. 13.

Arkansas.

Little Rock, Arkansas School Journal, M., 1899, vol. 4.

California.

Berkeley, University Chronicle, Bi-m., 1899, vol. 2.
San Francisco, Western Journal of Education, M., 1899, vol. 14.

Colorado.

Denver, Colorado School Journal, M., 1899, vol. 14.

Connecticut.

Meriden, Connecticut School Journal, W., 1899, vol. 5.
New Haven, Yale Review, M., 1899, vol. 8.

District of Columbia.

Washington, American Annals of the Deaf, Qu., 1899, vol. 45.
Washington, Catholic University Bulletin, Qu., 1899, vol. 5.

Delaware.

Newark, Educational News, Semi-m., 1899, vol. 15.

Florida.

Jacksonville, Florida School Exponent, M., 1899, vol. 6.

Georgia.

Atlanta, Georgia Education, M., 1899, vol. 1.
Atlanta, Southern Educational Journal, M., 1899, vol. 12.

Iowa.

Anamosa, Jones County Teacher, M., 1899, vol. 10.
Boonesboro, Boone County Teacher, M., 1899, vol. 10.
Charles City, Iowa Teacher, M., 1899, vol. 14.
Des Moines, Midland Schools, M., 1899, vol. 14.
Dubuque, Iowa Normal Monthly, M., 1899, vol. 22.

Illinois.

Aurora, Modern Education, M., 1899, vol. 1.
Bloomington, School and Home Education, M., 1899, vol. 18.
Chicago, Biblical World, M., 1899, vol. 13.
Chicago, Chicago Teacher, M., 1899, vol. 1.
Chicago, Child Garden, M., 1899, vol. 7.
Chicago, Child Study Monthly, M., 1899, vol. 5.
Chicago, Dial (The), M., 1899, vol. 27.
Chicago, Educational Forum, M., 1899, vol. 2.
Chicago, Kindergarten Magazine, M., 1899, vol. 12.
Chicago, Manual Training Magazine, Qu., 1899, vol. 1.
Chicago, Music, M., 1899, vol. 17.
Chicago, Progress, M., 1899, vol. 4.
Chicago, School Review, M., 1899, vol. 7.
Chicago, School Weekly, W., 1899, vol. 5.
Chicago, University Record, W., 1899, vol. 4.
Danville Inter-State School Review, W., 1899, vol. 8.
Normal, Illinois Society for Child Study, Qu., 1899, vol. 4.
Oak Park, Intelligence, Semi-m., 1899, vol. 19.
Taylorsville, School News and Practical Educator, M., 1899, vol. 13.

Indiana.

Elkhart, Educational News, M., 1899, vol. 4.
Indianapolis, Indiana School Journal, M., 1899, vol. 44.
Terre Haute, Inland Educator, M., 1899, vol. 8.

Kansas.

Emporia, State Normal Monthly, M., 1899, vol. 1.
Lawrence, Kansas University Quarterly, Qu., 1899, vol. 8.
Manhattan, Industrialist (The), M., 1899, vol. 26.
New Albany, County School Champion, M., 1899, vol. 3.
Topeka, Western School Journal, M., 1899, vol. 16.

Kentucky.

Frankfort, Normal Advocate, M., 1899, vol. 1.
Lexington, Home and School, M., 1899, vol. 1.
Lexington, Southern School, M., 1899, vol. 15.

Maine.

Farmington, School World, M., 1899, vol. 19.

Maryland.

Baltimore, Johns Hopkins University Circular, M., 1899, vol. 19.
Baltimore, New Pedagogue (The), M., 1899, vol. 1.

Massachusetts.

Boston, American Physical Education Review, Qu., 1899, vol 1.
Boston, American Primary Teacher, M., 1899, vol. 17.
Boston, Boston Academy, Qu., 1899, vol. 13.
Boston, Boston Cooking School Magazine, Bi-m., 1899, vol. 4.
Boston, Boston University Notes, Qu., 1899, vol. 1.
Boston, Education, M., 1899, vol. 20.
Boston, Germania, M., 1899, vol. 11.
Boston, Journal of Education, W., 1899, vol. 51.
Boston, Literary World, Semi-m., 1899, vol. 30.
Boston, Popular Educator, M., 1899, vol. 16.
Boston, Posse Gymnasium Journal, M., 1899, vol. 7.
Boston, Primary Education, M., 1899, vol. 7.
Boston, School Physiology Journal, M., 1899, vol. 9.
Boston, Technological Quarterly, Qu., 1899, vol. 12.
Springfield, Kindergarten Review, M., 1899, vol. 10.
Worcester, Seminary (The), Qu., 1899, vol. 6.
Worcester, American Journal of Psychology, Qu., 1899, vol. 11.

Michigan.

Detroit, Pernin's Monthly Stenographer, M., 1899, vol. 13.
Lansing, Michigan School Moderator, Semi-m., 1899, vol. 20.
Lansing, Teachers' Sanitary Bulletin, M., 1899, vol. 2.
Ypsilanti, Education Extension, M., 1899, vol. 5.

Minnesota.

Minneapolis, School Education, M., 1899, vol. 18.

Missouri.

Jefferson City, Missouri School Journal, M., 1899, vol. 16.
Kansas City, Western College Magazine, M., 1899, vol. 4.
St. Louis, American Journal of Education, M., 1899, vol. 32.
St. Louis, Evangelish-Lutherisches Schulblatt, M., 1899, vol. 34.
St. Louis, School and Home, M., 1899, vol. 17.

Montana.

Dillon, Public School Journal, M., 1899, vol. 2.

Nebraska.

Blair, School Exponent, M., 1899, vol. 2.
Omaha, Nebraska Mute Journal, M., 1899, vol. 27.
Santee Ageney, Word Carrier, M., 1899, vol. 28.

New Hampshire.

Manchester, Notes and Querries, M., 1899, vol. 18.

New Jersey.

Ringoes, Journal of Orthoepi and Orthografi, M., 1899, vol. 16.
Trenton, Silent Worker (The), M., 1899, vol. 12.

New York.

Binghamton, Journal of Pedagogy, Qu., 1899, vol. 12.
Danville, Normal Instructor, M., 1899, vol. 8.
Malone, Mentor (The), M., 1899, vol. 5.
New York, American School Board Journal, M., 1899, vol. 19.
New York, American University Magazine, Bi-m., 1899, vol. 6.
New York, Art Amateur (The), M., 1899, vol. 41.
New York, Art Education, Bi-m., 1899, vol. 6.
New York, Columbia University Quarterly, Qu., 1899, vol. 2.
New York, Deaf Mutes' Journal, W., 1899, vol. 28.
New York, Educational Foundations, M., 1899, vol. 11.
New York, Educational Review, M., 1899, vol. 18.
New York, Literary Digest, W., 1899, vol. 19.
New York, New Education, M., 1899, vol. 12.
New York, New York Education, M., 1899, vol. 3.
New York, New York Teachers' Magazine, M., 1899, vol. 2.
New York, Our Times, Semi-m., 1899, vol. 16.
New York, Penman's Art Journal, M., 1899, vol. 24.
New York, Practical Teacher, M., 1899, vol. 1.
New York, Pratt Institute Monthly, M., 1899. vol. 7.
New York, Primary School, M., 1899, vol. 9.
New York, School, W., 1899, vol. 11.
New York, School Journal, W., 1899, vol. 59.
New York, School Music Review, M., 1899, vol. 8.
New York, Sunday School Journal, M., 1899, vol. 31.
New York, Teachers' Institute, M., 1899, vol. 21.
New York, Teachers' World, M., 1899, vol. 11.
New York, Werner's Magazine, M., 1899, vol. 24.
Rochester, Educational Gazette, M., 1899, vol. 15.
Syracuse, School Bulletin, M., 1899, vol. 26.

North Carolina.

Greensboro, North Carolina Journal of Education, M., 1899, vol. 3.
Greensboro, State Normal Magazine, M., 1899, vol. 12.

North Dakota.

Grafton, Common School (The), M., 1899, vol. 10.

Ohio.

Akron, Home and School, M., 1899, vol. 1.
Cincinnati, Christian Educator, Bi-m., 1899, vol. 10.
Cincinnati, National Humane Educator, M., 1899, vol. 11.
Cincinnati, School Life, W., 1899, vol. 1.
Columbus, Ohio Educational Monthly, M., 1899, vol. 48.
Marietta, Ohio Teacher, M., 1899, vol. 20.

Oklahoma.

Norman, Oklahoma School Herald, M., 1899, vol. 8.

Oregon.

Salem, Oregon Teachers' Monthly, M., 1899, vol. 3.

Pennsylvania.

Allentown, National Educator, M., 1899, vol. 40.
Edinboro, Educational Independent, W., 1899, vol. 7.
Harrisburg, School Gazette, M., 1899, vol. 11.
Huntington, Juniata Echo, M., 1899, vol. 8.
Lancaster, Journal of School Geography, M., 1899, vol. 3.
Lancaster, Pennsylvania School Journal, M., 1899, vol. 48.
Meadville, Chautauquan (The), M., 1899, vol. 29.
Millersville, Normal Journal, Qu., 1899, vol. 13.
Philadelphia, Journal of Franklin Institute, M., 1899, vol. 149.
Philadelphia, Stenographer (The), M., 1899, vol. 14.
Philadelphia, Teacher (The), M., 1899, vol. 4.

South Carolina.

Aiken, Schofield School Bulletin, M., 1899, vol. 10.

South Dakota.

Mitchell, South Dakota Educator, M., 1899, vol. 13.

Tennessee.

Nashville, New Century Education, M., 1899, vol. 1.
Nashville, Southwestern School Journal, M., 1899, vol. 5.

Texas.

Dallas, Texas School Magazine, M., 1899, vol. 2.
Austin, Texas School Journal, M., 1899, vol. 16.

Virginia.

Hampton, Southern Workman and Hampton School Record, M., 1899, vol. 28.
Richmond, Virginia School Journal, M., 1899, vol. 8.
Williamsburg, William and Mary College Quarterly, Qu., 1899, vol. 8.

Washington.

Olympia, Northwest Journal of Education, M., 1899, vol. 11.
Vancouver, Washingtonian (The), Semi-m., 1899, vol. 8.

West Virginia.

Charleston, West Virginia School Journal, M., 1899, vol. 20.

Wisconsin.

Madison, Wisconsin Journal of Education, M., 1899, vol. 29.
Milwaukee, Lutherische Schulzeitung, M., 1899, vol. 25.
Milwaukee, Erziehungsblaetter, M., 1899, vol. 29.
Milwaukee, Mind and Body, M., 1899, vol. 6.
Milwaukee, Pædagogische Monatschefte, M., 1899, vol. 1.
Milwaukee, Western Teacher, M., 1899, vol. 8.

(2) ARRANGED BY SUBJECTS.

Common School Education, Elementary and Secondary.

American Journal of Education—Mo.
American Primary Teacher—Mass.
Arkansas School Journal—Ark.
Boone County Teacher—Ia.
Chicago Teacher—Ill.
Colorado School Journal—Col.
Common School—N. D.
Connecticut School Journal—Conn.
Country School Champion—Kans.
Education—Mass.
Educational Exchange—Ala.
Educational Forum—Ill.
Educational Foundations—N. Y.
Educational Gazette—N. Y.
Educational Independent—Pa.
Educational News—Del.
Educational News—Ind.
Educational Review—N, Y.
Erziehungsblaetter—Wis.
Evangelisch-Lutherisches Schulblatt—Mo.
Florida School Exponent—Fla.
Georgia Education—Ga.
Home and School—Ky.
Home and School—O.
Indiana School Journal—Ind.
Inland Educator—Ind.
Intelligence—Ill.
Interstate School Review—Ill.
Iowa Teacher—Ia.
Jones County Teacher—Ia.
Journal of Education—Mass.
Journal of Pedagogy—N. Y.
Juniata Echo—Pa.
Lutherische Schulzeitung—Wis.
Mentor—N. Y.
Michigan School Moderator—Mich.
Midland Schools—Ia.
Missouri School Journal—Mo.
Modern Education—Ill.
National Educator—Pa.
New Century Education—Tenn.
New Education—N. Y.
New Pedagogue—Md.
New York Education—N. Y.
New York Teachers' Magazine—N. Y.
Normal Advocate—Ky.
Normal Index—Ala.
North Carolina Journal of Education—N. C.
Northwest Journal of Education—Wash.
Ohio Educational Monthly—O.
Ohio Teacher—O.
Oklahoma School Herald—Okl.
Oregon Teachers' Monthly—Or.
Our Times—N. Y.
Paedagogische Monatshefte—Wis.
Pennsylvania School Journal—Pa.
Popular Educator—Mass.
Practical Teacher—N. Y.
Primary Education—Mass.
Primary School—N. Y.
Public School Journal—Mont.
Schofield School Bulletin—S. C.
School—N. Y.
School and Home—Mo.
School and Home Education—Ill.

Common School Education, Elementary and Secondary—Continued.

School Bulletin—N. Y.
School Education—Minn.
School Exponent—Neb.
School Gazette—Pa.
School Journal—N. Y.
School News and Practical Educator—Ill.
School Weekly—Ill.
School World—Me.
Seminary—Mass.
South Dakota Educator—S. D.
Southern Educational Journal—Ga.
Southern School—Ky.
South Western School Journal—Tenn.
Teacher (The)—Pa.
Teachers' World—N. Y.
Texas School Journal—Tex.
Texas School Magazine—Tex.
Virginia School Journal—Va.
Washingtonian (The)—Wash.
Western School Journal—Cal.
Western School Journal—Kan.
Western Teacher—Wis.
West Virginia School Journal—W. Va.
Wisconsin Journal of Education—Wis.
Word Carrier—Neb.

Kindergarten Education.

Child Garden—Ill.
Kindergarten Magazine—Ill.
Kindergarten Review—Mass.

Secondary Education, Exclusively or Chiefly.

Boston Academy—Mass.
Educational Review—N. Y.
School Review—Ill.

Normal School Education.

Education Extension—Mich.
Iowa Normal Monthly—Ia.
Normal Instructor—N. Y.
Normal Journal—Pa.
State Normal Magazine—N. C.
State Normal Monthly—Kans.
Teachers' Institute—N. Y.

University Publications.

American University Magazine—N. Y.
Boston University Notes—Mass.
Catholic University Bulletin—D. C.
Columbia University Quarterly—N. Y.
Johns Hopkins University Circular—Md.
Seminary (The)—Mass.
University Chronicle—Cal.
University Quarterly—Kan.
University Record—Ill.
Western College Magazine—Mo.
Williams and Mary College Quarterly—Va.

Physical Education.

American Physical Education Review—Mass.
Mind and Body—Wis.
Posse Gymnasium Journal—Mass.

Religious and Moral Education.

Biblical World—Ill.
Christian Education—O.
National Humane Educator—O.
Sunday School Journal—N. Y.

Art Education.

Art Amateur—N. Y.
Art Education—N. Y.

Child Study and Psychology.

American Journal of Psychology—Mass.
Child Study Monthly—Ill.
Illinois Society for Child Study—Ill.

Industrial and Technical Education.

Industrial (The)—Kan.
Journal of Franklin Institute—Pa.
Manual Training Magazine—Ill.
Technological Quarterly—Mass.
Pratt Institute Monthly—N. Y.
Southern Workman and Hampton School Record—Va.

Deaf Mutes' Education.

American Annals of the Deaf—D. C.
Deaf Mutes' Journal—N. Y.
Nebraska Mute Journal—Neb.
Silent Worker—N. J.

Domestic Education.

Boston Cooking School Magazine—Mass.

Language and Elocution.

Germania—Mass.
Werner's Magazine—N. Y.

Calligraphy and Stenography.

Journal of Orthoepi and Orthografi—N. J.
Penman's Art Journal—N. Y.
Pernin's Monthly Stenographer—Mich.
Stenographer (The)—Pa.

Music.

Music—Ill.
School Music Review—N. Y.

Geography.

Journal of School Geography—Pa.

Physiology.

School Physiological Journal—Mass.

Hygiene.

Teachers' Sanitary Bulletin—Mich.

School Administration.

School Board Journal—N. Y.

Literature and Criticism.

Chatauquan (The)—Pa.
Dial (The)—Ill.
Literary Digest—N. Y.
Literary World—Mass.
Notes and Queries—N. H.
Progress—Ill.

CHAPTER XXIV.

EDUCATIONAL DIRECTORY.[1]

I.—Chief State School Officers.

Name.	Address.	Official designation.
J. W. Abercrombie	Montgomery, Ala	State superintendent of education.
Sheldon Jackson	Sitka, Alaska	General agent of education.
Robert L. Long	Phœnix, Ariz	Superintendent of public instruction.
J. J. Doyne	Little Rock, Ark	State superintendent of public instruction.
Thomas J. Kirk	Sacramento, Cal	Do.
Mrs. Helen L. Grenfell	Denver, Colo	Do.
C. D. Hine	New Britain, Conn	Secretary of State board of education.
	Dover, Del	Do.
W. B. Powell	Washington, D. C	Superintendent of District schools.
W. N. Sheats	Tallahassee, Fla	State superintendent of public instruction.
Gustavus R. Glenn	Atlanta, Ga	State school commissioner.
Miss Permeal French	Boise, Idaho	State superintendent of public instruction.
Alfred Bayliss	Springfield, Ill	Do.
John D. Benedict	Muscogee, Ind. T	Territorial superintendent of schools.
Frank L. Jones	Indianapolis, Ind	State superintendent of public instruction.
R. C. Barrett	Des Moines, Iowa	Do.
Frank Nelson	Topeka, Kans	Do.
W. J. Davidson	Frankfort, Ky	Do.
J. V. Calhoun	Baton Rouge, La	State superintendent of education.
W. W. Stetson	Augusta, Me	State superintendent of public schools.
Martin Bates Stephens	Baltimore, Md	Secretary of State board of education.
Frank A. Hill	Boston, Mass	Do.
Jason E. Hammond	Lansing, Mich	State superintendent of public instruction.
J. H. Lewis	St. Paul, Minn	Do.
Henry L. Whitfield	Jackson, Miss	State superintendent of education.
W. T. Carrington	Jefferson City, Mo	State superintendent of public schools.
E. A. Carleton	Helena, Mont	State superintendent of public instruction.
W. R. Jackson	Lincoln, Nebr	Do.
Orvis Ring	Carson, Nev	Do.
Channing Folsom	Concord, N. H	Do.
Chas. J. Baxter	Trenton, N. J	Do.
M. C. de Baca	Santa Fe, N. Mex	Superintendent of public instruction.
Charles R. Skinner	Albany, N. Y	State superintendent of public instruction.
C. H. Mebane	Raleigh, N. C	Do.
J. G. Halland	Bismarck, N. Dak	Do.
Lewis D. Bonebrake	Columbus, Ohio	State commissioner of common schools.
S. N. Hopkins	Guthrie, Okla	Superintendent of public instruction.
J. H. Ackerman	Salem, Oreg	State superintendent of public instruction.
Nathan C. Schaeffer	Harrisburg, Pa	Do.
Thomas B. Stockwell	Providence, R. I	Commissioner of public schools.
John J. McMahan	Columbia, S. C	State superintendent of education.
E. E. Collins	Pierre, S. Dak	State superintendent of public instruction.
M. C. Fitzpatrick	Nashville, Tenn	Do.
J. S. Kendall	Austin, Tex	Do.
John R. Park	Salt Lake City, Utah	Do.
Mason S. Stone	Montpelier, Vt	State superintendent of education.
Joseph W. Southall	Richmond, Va	State superintendent of public instruction.
Frank J. Browne	Olympia, Wash	Do.
J. R. Trotter	Charleston, W. Va	State superintendent of free schools.
L. D. Harvey	Madison, Wis	State superintendent of public schools.
Thomas T. Tynan	Cheyenne, Wyo	State superintendent of public instruction.

[1] Corrected to May, 1900, in so far as changes have been reported to the Bureau.

II.—City Superintendents.

ALABAMA.

Anniston, H. C. Gunnels.
Bessemer, G. M. Lovejoy.
Birmingham, J. H. Phillips.
Eufaula, F. S. McCoy.
Florence, Henry Clay Gilbert.
Huntsville, S. R. Butler.
Mobile, John D. Yerby.
Montgomery, Charles L. Floyd.
New Decatur, W. B. Gibson.
Opelika, T. C. Pinckard.
Selma, R. E. Hardaway.
Tusealoosa, James H. Foster.

ARIZONA.

Tuscon, Samuel P. McCrea.

ARKANSAS.

Fort Smith, J. L. Holloway.
Helena, W. W. Rivers.
Hot Springs, George B. Cook.
Little Rock, J. R. Rightsell.
Pine Bluff, J. H. Hinemon.

CALIFORNIA.

Alameda, Charles C. Hughes.
Berkeley, Franklin E. Perham.
Eureka, A. C. Barker.
Fresno, Morris Elmer Dailey.
Los Angeles, J. A. Foshay.
Napa City, J. L. Shearer.[1]
Oakland, John W. McClymonds.
Pasadena, James D. Graham.[2]
Pomona, Frank H. Hyatt.[2]
Riverside, Charles E. Keyes.
Sacramento, O. W. Erlewine.
San Bernardino, Howard L. Lunt.
San Diego, F. P. Davidson.
San Francisco, Reginald H. Webster.
San Jose, Frank P. Russell.
Santa Ana, Lyman Gregory.
Santa Barbara, William A. Wilson.
Santa Cruz, D. C. Clark.
Santa Rosa, E. M. Cox.[2]
Stockton, James A. Barr.
Vallejo, Charles A. Fulton.

COLORADO.

Aspen, F. J. Brownscombe.
Colorado Springs, John Dietrich.
Cripple Creek, Ezra W. Palmer.
Denver:
District No. 1, Aaron Gove.
District No. 2, L. C. Greenlee.
District No. 7, W. J. Wise.
District No. 17, —— ——.

COLORADO—Continued.

Leadville, Edward C. Elliott.
Pueblo:
District No. 1, James S. McClung.
District No. 20, John F. Keating.
Trinidad, Charles V. Parker.

CONNECTICUT.

Ansonia, Wm. Alexander Smith.
Branford, Henry C. Moore,[3] T. S. Devitt.[4]
Bridgeport, Charles W. Deane.
Bristol, C. L. Wooding.
Danbury, A. C. Hubbard.[5]
Derby, J. W. Peck.
East Hartford, Joseph O. Goodwin,[5] George A. Bowman.[4]
Enfield, Samuel A. Booth.[6]
Greenwich, Newton B. Hobart,[3] Thomas F. Howley.[5]
Hartford, Herbert S. Bullard.
Manchester:
Town Schools, Herbert O. Bowers.
Ninth District (south), F. A. Verplanck.
Meriden, Albert B. Mather.
Middletown, Walter B. Ferguson.
Milford, H. I. Mathewson.[2]
Naugatuck, Andrew D. Meloy.
New Britain, Giles A. Stuart.
New Haven, —— ——.
New London, Charles B. Jennings.
New Milford, Charles H. Soule.
Norwalk, A. Blanchard.[5]
Norwich, Frank T. Maples;[5] Nathan Lee Bishop Supt. Central Dist.; John B. Stanton Supt. West Chelsea Dist.
Rockville, Isaac M. Agard.[7]
Stamford, Everett C. Willard.
Torrington, Edwin H. Forbes.
Wallingford, Malcolm Booth.
Waterbury, B. W. Tinker.
West Haven, Edgar C. Stiles.
Westport, L. T. Day.[5]
Willimantie, George E. Hinman.[8]
Winsted, H. Hungerford Drake.[5]

DELAWARE.

New Castle, George W. Andrew
Wilmington, David W. Harlan.

DISTRICT OF COLUMBIA.

Washington:
William B. Powell, Supt. of Public Schools.
G. F. T. Cook, Supt. of Colored Schools.

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[1] Principal grammar school.
[2] Supervising principal.
[3] Principal.
[4] Acting visitor.
[5] Secretary of the Board of School Visitors.
[6] Chairman of the School Committee.
[7] Superintendent of the East District Schools of Vernon Town.
[8] Secretary of the School Committee.

FLORIDA.

Jacksonville, George P. Glenn.
Key West, C. F. Kemp.[1]
Pensacola, N. B. Cook.[1]
St. Augustine, J. W. McCluny.
Tampa, L. W. Bucholz.[1]

GEORGIA.

Albany, S. R. De Jarnette.[2]
Americus, J. E. Mathis.
Athens, G. G. Bond.
Atlanta, W. F. Slaton.
Augusta, Lawton B. Evans.
Brunswick, Gustavus J. Orr, jr.
Columbus, Carleton B. Gibson.
Griffin, J. Henry Walker.
Macon, D. Q. Abbott.
Rome, James C. Harris.
Savannah, Otis Ashmore.
Thomasville, K. T. Maclean.[1]

ILLINOIS.

Alton, Robert A. Haight.
Aurora:
District No. 5 (East Side), C. M. Bardwell.
District No. 4 (West Side), A. V. Greenman.
Beardstown, S. Sterrett Beggs.
Belleville, H. D. Updike.
Belvidere:
North Side, Arthur J. Snyder.
South Side, Montgomery Moore.
Bloomington, Edwin M. Van Petten.
Braidwood, Lincoln M. Rutledge.
Cairo, Taylor C. Clendenen.
Canton, Charles S. Aldrich.
Centralia, J. L. Hughes.
Champaign, Joseph Carter.
Charleston, W. T. Gooden.
Chicago, —— ——.
Danville, L. H. Griffith.
Decatur, Enoch A. Gastman.
Dixon, Charles W. Groves.
Duquoin, David B. Rawlins.
East St. Louis:
District No. 1, John Richeson.
District No. 2, range 10, Thomas J. McDonough.[2]
District No. 2, range 9, I. Harry Todd.[2]
Edwardsville, Charles W. Parkinson.
Elgin, M. A. Whitney.
Evanston:
District No. 1, Homer H. Kingsley.
District No. 3, North Evanston, Mary H. O'Brien.[2]
District No. 2, South Evanston, Fred. W. Nichols.
Freeport, R. S. Page.
Galena, James W. Cupples.
Galesburg, William L. Steele.
Jacksonville, J. W. Henninger.
Joliet, John J. Allison.
Kankakee, F. N. Tracy.

ILLINOIS—Continued.

Kewanee, A. C. Butler.
Lasalle, L. A. Thomas.
Lincoln, F. M. Richardson.
Litchfield, J. E. Wooters.
Macomb, R. C. Rennick.
Mattoon, Benjamin F. Armitage.
Metropolis City, Edward Longbons.
Moline, William J. M. Cox.
Monmouth, James C. Burns.
Morris, P. K. Cross.
Oakpark, William H. Hatch.
Ottawa, Samuel H. Heidler.
Pana, William Miner.
Paris, J. D. Shoop.
Pekin, O. A. Shotts.
Peoria, Newton Charles Dougherty.
Peru, W. W. Wirt.
Quincy, A. A. Seehorn.
Rock Island, R. G. Young.
Rockford, P. R. Walker.
Springfield, J. H. Collins.
Spring Valley, R. V. De Groff.
Sterling:
District No. 3 (the Sterling schools), H. L. Chaplin.
District No. 8 (the Wallace schools), H. A. Hollister.
Streator, W. F. Rocheleau.
Urbana, J. W. Hays.
Waukegan, Frank H. Hall.

INDIANA.

Anderson, John W. Carr.
Aurora, J. R. Houston.
Bloomington, W. H. Glascock.
Bluffton, W. A. Wirt.
Brazil, John C. Gregg.
Columbus, John A. Carnagey.
Connersville, W. S. Rowe.
Crawfordsville, George F. Kenaston.
Elkhart, D. W. Thomas.
Evansville, William A. Hester.
Fort Wayne, Justin N. Study.
Frankfort, H. L. Frank.
Goshen, William H. Sims.
Greencastle, Horace G. Woody.
Hammond, W. C. Belman.
Huntington, Robert I. Hamilton.
Indianapolis, Calvin N. Kendall.
Jeffersonville, A. C. Goodwin.
Kokomo, Robert A. Ogg.
Lafayette, Edward Ayres.
Laporte, John A. Wood.
Lawrenceburg, T. H. Meek.
Lebanon, James R. Hart.
Logansport, Albert H. Douglass.
Madison, C. M. McDaniels.
Marion, Welford D. Weaver.
Michigan City, Edward Boyle.
Mount Vernon, Edwin S. Monroe.
Muncie, W. R. Snyder.
New Albany, W. H. Hershman.

[1] County Superintendent.

[2] Principal.

INDIANA—Continued.

Peru, A. E. Malsbary.
Portland, Edwin F. Dyer.
Richmond, Thomas A. Mott.
Seymour, H. C. Montgomery.
Shelbyville, James H. Tomlin.
South Bend, Calvin Moon.
Terre Haute, Wm. H. Wiley.
Valparaiso, Charles Henderson Wood.
Vincennes, Albert E. Humke.
Wabash, Miles W. Harrison.
Warsaw, Noble Harter.
Washington, Wm. F. Axtell.

IOWA.

Atlantic, William Wilcox.
Boone, Geo. I. Miller.
Burlington, Chas. Eldred Shelton.
Cedar Falls, O. J. Laylander.
Cedar Rapids, J. T. Merrill.
Centerville, F. E. King.
Charles City, George S. Dick.
Clinton, O. P. Bostwick.
Council Bluffs, Herbert B. Hayden.
Creston, O. E. French.
Davenport, J. B. Young.
Des Moines:
East Side, Amos Hiatt.
West Side, Samuel H. Sheakley.
Dubuque, F. T. Oldt.
Fairfield, J. E. Williamson.
Fort Dodge, Frederick C. Wildes.
Fort Madison, C. W. Cruikshank.
Independence, J. H. Buechele.
Iowa City, S. K. Stevenson.
Keokuk, O. W. Weyer.
Le Mars, E. N. Coleman.
Lyons, O. H. Brainerd.
Marshalltown, F. E. Willard.
Mason City, A. R. Sale.
Mount Pleasant, Frank Whittier Else.
Muscatine, F. M. Witter.
Oskaloosa, Orion C. Scott.
Ottumwa, A. W. Stuart.
Red Oak, W. F. Chevalier.
Sioux City, H. E. Kratz.
Waterloo:
East Side, F. J. Sessions.
West Side, ——— ———.
Webster City, C. W. Martindale.

KANSAS.

Argentine, H. P. Butcher.
Arkansas City, W. M. Fisher.
Atchison, J. H. Glotfelter.
Emporia, L. A. Lowther.
Fort Scott, David M. Bowen.
Hutchinson, George W. Winans.
Junction City, George W. Kendrick.
Kansas City, L. E. Wolfe.
Lawrence, Frank P. Smith.
Leavenworth, Miss Mamie E. Dolphin.

KANSAS—Continued.

Newton, J. W. Cooper.
Ottawa, Walter H. Olin.
Parsons, H. Winsor.
Pittsburg, R. S. Russ.
Salina, A. Ludlum.
Topeka, William M. Davidson.
Wellington, H. F. M. Bear.
Wichita, Frank R. Dyer.
Winfield, J. W. Spindler.

KENTUCKY.

Ashland, John Grant Crabbe.
Bowling Green, Edward Taylor.
Covington, John Morris.
Dayton, F. S. Alley.[1]
Frankfort, McHenry Rhoads.
Henderson, J. M. McCallie.
Hopkinsville, Livingstone McCartney.
Lexington, William Rogers Clay.
Louisville, E. H. Mark.
Maysville, D. C. Hutchins.[2]
Newport, John Burke.
Owensboro, James McGinniss.
Paducah, George O. McBroom.
Paris, E. W. Weaver.
Richmond, J. D. Clark.
Winchester, R. M. Shiff.

LOUISIANA.

Baton Rouge, R. C. Gordon.
New Orleans, Warren Easton.
Shreveport, C. E. Boyd.

MAINE.

Auburn, A. P. Wagg.
Augusta:
Mrs. Caroline S. Fogg, superintendent of suburban and high schools.
Charles S. Pettingill, principal of village district.
Weston Lewis, principal of Williams district.
Bangor, Miss Mary S. Snow.
Bath, William H. Winslow.
Belfast, Francis S. Brick.
Biddeford, Royal E. Gould.
Brewer, Mrs. Mertie M. Curtis.
Brunswick, Franklin C. Robinson.
Calais, Stephen E. Webber.
Eastport, T. E. St. John.
Ellsworth, W. H. Dresser.
Fort Fairfield, C. H. Stevens.
Gardiner, Elliot B. Barber.
Houlton, Harry L. Putnam.
Lewiston, I. C. Phillips.
Oldtown, Byron Porter.
Portland, Orlando M. Lord.
Rockland, Frank H. Hill.
Saco, John S. Locke.
Sanford, Myron E. Bennett.
Waterville, E. F. Hitchings.

[1] Post-office, Newport.

[2] Principal.

MARYLAND.

Annapolis, John G. Bannon.[1]
Baltimore, J. H. Van Sickle.
Cambridge, Josiah L. Kerr.[1]
Cumberland, H. G. Weimer.[1]
Frederick, Ephraim L. Boblitz.[1]
Hagerstown, George C. Pearson.[1]

MASSACHUSETTS.

Abington, W. H. Sanderson.
Adams, J. C. Gray.
Amesbury, E. O. Perkins.[2]
Amherst, A. L. Hardy.
Andover, George Ellsworth Johnson.
Arlington, Frank S. Sutcliffe.
Athol, W. Scott Ward.
Attleboro, William P. Kelly.
Barnstable, F. W. Kingman.
Belmont, George P. Armstrong.
Beverly, Adelbert Leon Safford.
Blackstone, Josiah B. Davis.
Boston, Edwin P. Seaver.
Braintree, Irving W. Horne.
Bridgewater, W. H. Sanderson.
Brockton, B. B. Russell.
Brookline, ——— ———.
Cambridge, Francis Cogswell.
Canton, James S. Perkins.
Chelsea, Walter H. Small.
Chicopee, Clarence A. Brodeur.
Clinton, Charles L. Hunt.
Concord, William L. Eaton.
Danvers, A. P. Learoyd.[2]
Dedham, Roderick Whittlesey Hine.
Easthampton, W. D. Miller.
Easton, Edward Bartlett Maglathlin
Everett, Randall J. Condon.
Fall River, William C. Bates.
Fitchburg, Joseph G. Edgerly.
Framingham, Samuel F. Blodgett
Franklin, Ernest D. Daniels.
Gardner, ——— ———.
Gloucester, Freeman Putney.
Grafton, W. H. Holmes, jr.
Granby, Edward H. McLachlin.
Greenfield, G. H. Danforth.
Haverhill, Roscoe D. McKeen.
Hingham, Nelson G. Howard.
Holyoke, Louis P. Nash.
Hopkinton, Alvan R. Lewis.
Hyde Park, William G. Colesworthy.[2]
Lawrence, John E. Burke.
Leominster, Thomas E. Thompson.
Lowell, Arthur K. Whitcomb.
Lynn, Orsamus B. Bruce.
Malden, George E. Gay.
Manchester, George P. Armstrong.
Marblehead, John B. Gifford.
Marlboro, J. Asbury Pitman.
Medford, Charles H. Morss.
Melrose, Fred H. Nickerson.
Merrimac, F. E. Pease.[3]
Methuen, A. Everett White.

MASSACHUSETTS—Continued.

Middleboro, Asher J. Jacoby.
Milford, Charles W. Haley.
Milbury, C. S. Lyman.
Milton, D. P. Dame.
Natick, Frank Edson Parlin.
New Bedford, William E. Hatch.
Newburyport, William P. Lunt.
Newton, Albert B. Fifield.
North Adams, Isaac Freeman Hall.
Northampton, J. H. Carfrey.
North Attleboro, James W. Brehaut.
Northbridge, S. A. Melcher.
Orange, Miss Lizzie A. Mason.
Palmer, A. C. Thompson.
Peabody, John B. Gifford.
Pittsfield, Eugene Bouton.
Plymouth, Francis J. Heavens.
Provincetown, Clarence W. Fearing.
Quincy, Herbert Warren Lull.
Reading, Charles E. Hussey.
Revere, Frank J. Peaslee.
Rockport, Mary L. Lincoln.
Salem, John Wright Perkins.
Saugus, Charles E. Stevens.
Somerville, Gordon A. Southworth.
Southbridge, John T. Clarke.
South Hadley, Edward H. McLachlin.
Spencer, Wyman C. Fickett.
Springfield, Thomas M. Balliet.
Stoneham, Charles E. Stevens.
Taunton, C. F. Boyden.
Upton, W. H. Holmes, jr.
Wakefield, Charles E. Hussey.
Waltham, William D. Parkinson.
Ware, Samuel W. Hallett.
Warren, Albert Robinson.
Watertown, Melville A. Stone.
Webster, A. H. Morse.
Wellesley, Marshall Livingston Perrin.
Westboro, H. C. Waldron.
Westfield, Stanley H. Holmes,
West Springfield, Ulysses G. Wheeler.
Weymouth, I. M. Norcross.
Winchendon, David B. Locke.
Woburn, Thomas Emerson.
Worcester, Clarence F. Carroll.

MICHIGAN.

Adrian, A. E. Curtis.
Albion, W. J. McKone.
Alpena, George A. Hunt.
Ann Arbor, H. M. Slauson.
Battle Creek, William G. Coburn.
Bay City, John A. Stewart.
Benton Harbor, Eugene A. Wilson.
Big Rapids, James R. Miller.
Cadillac, James Hamilton Kaye.
Charlotte, M. R. Parmelee.
Cheboygan, William C. Thompson.
Coldwater, H. E. Johnson.
Detroit, Wales C. Martindale.
Escanaba, George P. Fleischer.

[1] County school examiner.
[2] Secretary of the school committee.
[3] Chairman of the school committee.

MICHIGAN—Continued.

Flint, —— ——.
Grand Haven, John A. Crawford.
Grand Rapids, —— ——.
Hillsdale, W. L. Shuart,
Holland, F. D. Haddock.
Ionia, C. L. Bemis.
Iron Mountain, L. E. Amidon.
Ironwood, L. L. Wright.
Ishpeming, Richard Hardy.
Jackson, L. S. Norton.
Kalamazoo, O. E. Latham.
Lansing, Clarence E. Holmes.
Ludington, H. T. Blodgett.
Manistee, F. Martin Townsend.
Marquette, Anna M. Chandler.
Menominee, O. I. Woodley.
Monroe, R. D. Briggs.
Mount Clemens, S. C. Price.
Muskegon, David Mackenzie.
Negaunee, H. B. Krogman.
Niles, J. D. Schiller.
Owosso, E. T. Austin.
Pontiac, Hugh Brown.
Port Huron, James H. Beazell.
Saginaw:
East Side, E. C. Warriner.
West Side, Edwin C. Thompson.
St. Joseph, Ernest P. Clarke.
Sault Ste. Marie, E. E. Ferguson.
Traverse City, C. H. Horn.
West Bay City, N. A. Richard.
Wyandotte, A. W. Dasef.
Ypsilanti, Austin George.

MINNESOTA.

Anoka, John L. Torrens.
Austin, W. F. F. Selleck.
Brainerd, T. B. Hartley.
Duluth, Robert E. Denfeld.
Faribault, George A. Franklin.
Fergus Falls, J. A. Vandyke.
Mankato, Edwin B. Uline.
Minneapolis, Charles M. Jordan
New Ulm, E. T. Critchett.
Owatonna, P. J. Kuntz.
Red Wing, F. V. Hubbard.
Rochester, L. A. Overholt.
St. Cloud, S. S. Parr.
St. Paul, A. J. Smith.
St. Peter, Edgar George.
Stillwater, Darius Steward.
Winona, J. A. Tormey.

MISSISSIPPI.

Columbus, J. M. Barrow.
Greenville, E. E. Bass.
Jackson, W. S. Sims.
Meridian, J. C. Fant.
Natchez, J. W. Henderson.[1]
Vicksburg, Charles Pendleton Kemper.

MISSOURI.

Bonne Terre, L. N. Gray.
Boonville, D. T. Gentry.
Brookfield, J. U. White.
Cape Girardeau, E. E. McCullough.[2]
Carrollton, E. H. Stroeter.
Carthage, W. J. Stevens.
Chillicothe, Oliver Stigall.
Clinton, F. B. Owen.
Columbia, R. H. Emberson.
De Soto, A. B. Carroll.
Fulton, J. C. Humphrey.
Hannibal, R. B. D. Simonson.
Independence, W. H. Johnson.
Jefferson City, W. W. Walters.
Joplin, Joseph D. Elliff.
Kansas City, James M. Greenwood.
Kirksville, C. S. Brother.
Lexington, H. D. Demand.
Louisiana, A. W. Riggs.
Marshall, T. E. Spencer.
Maryville, Benjamin F. Duncan.
Mexico, D. A. McMillan.
Moberly, J. A. Whiteford.
Nevada, J. C. Pike.
Rich Hill, William McGinnis.
St. Charles, George W. Jones.
St. Joseph, Edward B. Neely.
St. Louis, F. Louis Soldan.
Sedalia, George V. Buchanan.
Springfield, Jonathan Fairbanks.
Trenton, L. Tomlin.
Warrensburg, J. Matt Gordon.
Webb City, A. G. Young.

MONTANA.

Butte, J. P. Hendricks.
Great Falls, S. D. Largent.
Helena, James E. Klock.

NEBRASKA.

Beatrice, J. W. Dinsmore.
Fremont, J. L. Laird.
Grand Island, Robert J. Barr.
Hastings, Edwin N. Brown.
Kearney, Jesse T. Morey.
Lincoln, C. H. Gordon.
Nebraska City, Allen C. Fling.
Omaha, Carroll G. Pearse.
Plattsmouth, John G. McHugh.
South Omaha, H. K. Wolfe.

NEVADA.

Virginia City, W. E. Winnie.[1]

NEW HAMPSHIRE.

Concord, (Union Dist.) Louis J. Rundlett.
Dover, Frank H. Pease.
Exeter, John A. Brown.[3]
Keene, (Union Dist.) Thaddeus William Harris.
Laconia, J. H. Blaisdell.

[1] County superintendent. [2] Principal. [3] Clerk of the school board.

NEW HAMPSHIRE—Continued.

Manchester, William E. Buck.
Nashua, James H. Fassett.
Portsmouth, H. C. Morrison.
Rochester, William N. Cragin.

NEW JERSEY.

Atlantic City, W. M. Pollard.
Bayonne, Charles M. Davis.
Bordentown, William Macfarland.[1]
Bridgeton, John S. Turner.
Burlington, Wilbur Watts.[2]
Camden, Martin V. Bergen.
Elizabeth, William J. Shearer.
Gloucester, John C. Stinson.
Hackensack, John Terhune.[3]
Harrison, John Dwyer.
Hoboken, A. J. Demarest.
Jersey City, Henry Snyder.
Lambertville, Robert H. Dilts.
Long Branch, Christopher Gregory.
Millville, A. Duncan Yocum.
Morristown, W. L. R. Haven.
Newark, Charles B. Gilbert.
New Brunswick, William Clinton Armstrong.
Orange, William M. Swingle.
Passaic, F. E. Spaulding.
Paterson, Addison B. Poland.
Perth Amboy, S. E. Shull.
Phillipsburg, H. Budd Howell.
Plainfield, Henry M. Maxson.
Rahway, W. O. Robinson.
Red Bank, S. V. Arrowsmith.
Salem, Morris H. Stratton.
South Amboy, R. M. Fitch.[1]
Trenton:
  Leslie C. Pierson, superintendent.
  B. C. Gregory, supervising principal.
Town of Union, Otto Ortel.[4]
Vineland, J. J. Unger.
Woodbury, J. E. Frey.[1]

NEW MEXICO.

Albuquerque, M. E. Hickey.
Santa Fe, J. A. Wood.

NEW YORK.

Albany, Charles W. Cole.
Albion, Mrs. Ida P. Greene.
Amsterdam, Charles S. Davis.
Auburn, Benjamin B. Snow.
Batavia, John Kennedy.
Binghamton, Darwin L. Bardwell.
Buffalo, Henry P. Emerson.
Canandaigua, J. Carlton Norris.
Catskill, Thomas A. Caswell.
Cohoes, George E. Dixon.

NEW YORK—Continued.

Corning, Leigh R. Hunt.
Cortland, Ferdinand E. Smith.
Dansville, W. G. Carmer.[2]
Dunkirk, John W. Babcock.
Elmira, Robert J. Round.
Fishkill-on-the-Hudson, Lewis Nelson Crane.[1]
Fulton, B. G. Clapp.
Geneva, William H. Truesdale.
Glens Falls, E. W. Griffith.
Gloversville, James A. Estee.
Green Island, James Heatly.
Haverstraw, L. O. Markham.
Hempstead, Ezra Fred Knapp.
Herkimer, A. J. Merrill.
Hoosick Falls, H. H. Snell.
Hornellsville, Elmer S. Redman.
Hudson, F. J. Sagendorph.
Ilion, Judson I. Wood.
Ithaca, ——, —— ——.
Jamestown, Rovillus R. Rogers.
Johnstown, Frank W. Jennings.
Kingston:
  "Kingston School District," Charles M. Ryon.
  Dist. No. 1, P. H. Cullen.[5]
  Dist. No. 2, William E. Bunten.[5]
  Dist. No. 3, Henry Powers.[5]
  Dist. No. 4, William A. McConnell.[5]
Lansingburg, George F. Sawyer.
Little Falls, Harry E. Reed.
Lockport, Emmet Belknap.
Lyons, W. H. Kinney.
Malone, Sarah L. Perry.
Matteawan, Gurdon R. Miller.[2]
Mechanicsville, L. B. Blakeman.
Medina, T. H. Armstrong.
Middletown, James F. Tuthill.
Mount Vernon, Charles E. Nichols.
Newark, Charles A. Hamilton.[2]
Newburgh, R. V. K. Montfort.
New Rochelle, Isaac E. Young.
New York:
  William H. Maxwell, City Supt.[6]
  Boroughs of Manhattan and the Bronx, John Jasper.[6]
  Borough of Brooklyn, Edward G. Ward.[7]
  Borough of Queens, Edward L. Stevens.[8]
  Borough of Richmond, Hubbard R. Yetman.[9]
Niagara Falls, Nathaniel L. Benham.
North Tonawanda, Clinton S. Marsh.
Norwich, Stanford J. Gibson.
Nyack, Ira H. Lawton.
Ogdensburg, Barney Whitney.
Olean, Fox Holden.
Oneida:
  District No. 25, ——, —— ——.
  District No. 26, H. H. Douglas.

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[1] Supervising principal.
[2] Principal.
[3] County Superintendent.
[4] Superintending principal; post-office, Weehawken.
[5] Principal; post-office, Rondout,
[6] Post-office, N. Y. City.
[7] Post-office, Brooklyn, N. Y.
[8] Post-office, Flushing, N. Y.
[9] Post-office, Tottenville, N. Y.

NEW YORK—Continued.

Oneonta, William C. Franklin.
Oswego, George E. Bullis.
Owego, Edwin P. Recordon.
Peekskill:
Drumhill district (District No. 7), John Millar.
Oakside district (Dist. No. 8), A. D. Dunbar.
Penn Yan, Jay Crissey.
Plattsburg, F. H. Davis.
Port Chester, E. G. Lautman.
Port Jervis, John M. Dolph.
Poughkeepsie, Edwin Schuyler Harris.
Rensselaer, R. W. Wickham.
Rochester, ——— ———.
Rome, Harrison T. Morrow.
Saratoga Springs, Thomas R. Kneil.
Saugerties, Fred. N. Moulton.
Schenectady, Samuel B. Howe.
Seneca Falls, C. Willard Rice.
Sing Sing, J. Irving Gorton.
Syracuse, A. B. Blodgett.
Tonawanda, F. J. Diamond.
Troy, John H. Willets.
Utica, George Griffith.
Waterford, Alexander Faleoner.
Waterloo, Thomas C. Wilber.[1]
Watertown, William G. Williams.
Watervliet, J. Edman Massee.
Waverly, H. J. Walter.
Whitehall, Wilber W. Howe.
White Plains, Sylvester R. Shear.
Yonkers, Charles E. Gorton.

NORTH CAROLINA.

Asheville, J. D. Eggleston, jr.
Charlotte, R. B. Hunter.
Concord, C. S. Coler.
Durham, J. A. Matheson.
Fayetteville, B. C. McIver.
Goldsboro, J. I. Foust.
Henderson, J. T. Alderman.
Newbern, Thomas R. Foust.
Raleigh, Edward P. Moses.
Reidsville, Edwin S. Sheppe.
Salisbury, Charles L. Coon.
Washington, Harry Howell.
Wilmington, ——— ———.
Winston, C. F. Tomlinson.

NORTH DAKOTA.

Fargo, F. Everett Smith.
Grand Forks, J. Nelson Kelley.

OHIO.

Akron, Richard S. Thomas.
Alliance, John E. Morris.
Ashland, W. S. Robinson.
Ashtabula, J. S. Lowe.
Avondale, I. R. Henderson.
Bellaire, J. R. Anderson.
Bellefontaine, Henry Whitworth.
Bucyrus, J. J. Bliss.
Cambridge, C. L. Cronebaugh.
Canton, O. A. Wright.

OHIO—Continued.

Chillicothe, N. H. Chaney.
Cincinnati, Richard G. Boone.
Circleville, C. L. Boyer.
Cleveland, Lewis H. Jones.
Columbus, J. A. Shawan.
Coshocton, John F. Fenton.
Dayton, W. N. Hailmann.
Defiance, James J. Burns.
Delaware, Horace A. Stokes.
Delphos, E. W. Hastings.
East Liverpool, Robert E. Rayman.
Elyria, Henry M. Parker.
Findlay, J. W. Zellar.
Fostoria, J. S. Young.
Fremont, W. W. Ross.
Galion I. C. Guinther.
Gallipolis, Robert Brown Ewing.
Greeneville, Edward M. Van Cleve.
Hamilton, S. L. Rose.
Hillsboro, H. C. Minnich.
Ironton, S. P. Humphrey.
Jackson, J. E. Kinnison.
Kent, A. B. Stutzman.
Kenton, E. P. Dean.
Lancaster, George W. Welsh.
Lima, Charles C. Miller.
Lorain, F. D. Ward.
Mansfield, Edmund D. Lyon.
Marietta, W. W. Boyd.
Marion, Arthur Powell.
Martins Ferry, W. H. Stewart.
Massillon, Edmund A. Jones.
Middletown, J. W. MacKinnon.
Mount Vernon, John K. Baxter.
Nelsonville, E. S. Jones.
New Philadelphia, G. C. Maurer.
Newark, M. F. Townsend.
Niles, Frank J. Roller.
Norwalk, A. D. Becchy.
Oberlin, George W. Waite.
Painesville, W. W. Boyd.
Piqua, C. W. Bennett.
Pomeroy, T. C. Flanegin.
Portsmouth, Thomas Vickers.
Salem, W. P. Burris.
Sandusky, H. B. Williams.
Sidney, E. S. Cox.
Springfield, Carey Boggess.
Steubenville, Henry Ney Mertz.
Tiffin, J. H. Snyder.
Toledo, William Wallace Chalmers.
Troy, Charles L. Van Cleve.
Uhrichsville, S. K. Mardis.
Urbana, William McK. Vanee.
Van Wert, J. P. Sharkey.
Wapakoneta, H. H. Hetter.
Warren, C. E. Carey.
Washington, C. H., H. R. McVay.
Wellston, Ezekiel Wallaee Patterson.
Wellsville, James L. MacDonald.
Wooster, Charles Haupert.
Xenia, Edwin B. Cox.
Youngstown, F. Treudley.
Zanesville, W. D. Lash.

[1] Principal.

OKLAHOMA.

Oklahoma, B. F. Nihart.

OREGON.

Astoria, William W. Payne.
Portland, Frank Rigler.
Salem, George A. Peebles.

PENNSYLVANIA.

Allegheny, John Morrow.
Allentown, Francis D. Raub.
Altoona, D. S. Keith.
Archbald, W. A. Kelly.
Ashland, William C. Estler.
Beaver Falls, Charles J. Boak.
Bellefonte, David O. Etters.
Bethlehem, George W. Twitmyer.
Bloomsburg, L. Parvin Sterner.[1]
Braddock, John S. Keefer.
Bradford, E. E. Miller.
Bristol, Louise D. Baggs.
Butler, John A. Gibson.
Carbondale, John J. Forbes.
Carlisle, Samuel B. Shearer.
Chambersburg, Samuel Gelwix.
Chester, Charles F. Foster.
Columbia, Daniel Fleisher,
Connellsville, J. P. Wiley.
Conshohocken, J. Horace Landis.
Corry, A. D. Colegrove.
Danville, James C. Houser.
Dubois, W. L. Greene.
Dunmore, E. D. Bovard.
Easton, William W. Cottingham.
Erie, H. C. Missimer.
Etna, J. Q. A. Irvine.[2]
Franklin, N. P. Kinsley.
Greensburgh, A. M. Wyant.
Greenville, T. S. Lowden.
Hanover, Thomas F. Chrostwaite.
Harrisburg, Lemuel O. Foose.
Hazelton, David A. Harman.
Homestead, John C. Kendall.
Huntingdon, Kimber Cleaver.
Johnstown, J. M. Berkey.
Lancaster, R. K. Buehrle.
Lansford, A. J. Harbaugh.[1]
Lebanon, R. T. Adams.
Lock Haven, John A. Robb.
McKeesport, H. F. Brooks.
Mahanoy City, William N. Ehrhart.
Mauch Chunk, James J. Bevan.
Meadville, Henry V. Hotchkiss.
Middletown, H. J. Wickey.
Milton, A. Reist Rutt.
Minersville, H. H. Spayd.[2]
Monongahela City, E. W. Dalbey.[2]
Mount Carmel, Samuel Halsey Dean.
Nanticoke, John William Griffith.
New Brighton, Joseph Burdette Richey.
Newcastle, J. W. Canon.

PENNSYLVANIA—Continued.

Norristown, Joseph K. Gotwals.
Oil City, C. A. Babcock.
Olyphant, M. W. Cumming.
Philadelphia, Edward Brooks.
Phœnixville, Harry F. Leister.
Pittsburg, Samuel Andrews.
Pittston, Robert Shiel.[1]
Plymouth, Frank E. Fickinger.
Pottstown, William W. Rupert.
Pottsville, B. F. Patterson.
Reading, Ebenezer Mackey.
Renova, James W. Elliott.
St. Clair, Thomas G. Jones.
Scranton, George Howell.
Shamokin, William F. Harpel.
Sharon, J. A. McLaughry.
Sharpsburg, E. B. McRoberts.
Shenandoah, J. W. Cooper.
South Bethlehem, Owen R. Wilt.
Steelton, L. E. McGinnes.
Sunbury, Ira Shipman.
Tamaqua, Robert F. Ditchburn.
Tarentum, C. C. Kelso.[1]
Titusville, Henry Pease.
Towanda, F. W. Robbins.
Tyrone, C. E. Kauffman.
Uniontown, Lee Smith.
Warren, W. L. MacGowan.
Washington, A. A. Hays.
Waynesboro, J. H. Reber.[1]
West Chester, Addison L. Jones.
Wilkesbarre, James M. Coughlin.
Wilkinsburg, E. J. Shives.
Williamsport, Charles Lose.
York, Atreus Wanner.

RHODE ISLAND.

Bristol, John Post Reynolds.
Burrillville, Allen P. Keith.
Central Falls, Wendell A. Mowry.
Cranston, Valentine Almy.
Cumberland, Clarence H. Dempsey.[3]
East Providence, George N. Bliss.
Johnston, William H. Starr.[4]
Newport, Joel Peckham.
Pawtucket, Henry D. Hervey.
Providence, Horace S. Tarbell.
Westerly, C. H. Babcock.
Woonsocket, Frank E. McFee.

SOUTH CAROLINA.

Charleston, Henry P. Archer.
Columbia, E. S. Dreher.
Greenville, E. L. Hughes.
Spartanburg, Frank Evans.
Sumter, S. H. Edmunds.

SOUTH DAKOTA.

Sioux Falls, Frank C. McClelland.
Yankton, Edmund J. Vert.

[1] Supervising principal.
[2] Principal.
[3] Post-office, Valley Falls.
[4] Post-office, Centerdale.

TENNESSEE.

Chattanooga, A. T. Barrett.
Clarksville, J. W. Graham.
Columbia, W. E. Bostick and J. H. Kelly.[1]
Jackson, Seymour A. Mynders.
Johnson City, S. C. Brown.
Knoxville, J. H. McCallie.
Memphis, George W. Gordon.
Nashville, H. C. Weber.

TEXAS.

Austin, T. G. Harris.
Brenham, Edward W. Tarrant.
Brownsville, Thomas P. Barbour.[2]
Corpus Christi, Charles W. Crossley.
Corsicana, H. S. Melear.
Dallas, J. L. Long.
Denison, William Gay.
El Paso, G. P. Putnam.
Fort Worth, M. G. Bates.
Gainesville, E. F. Comegys.
Galveston, John W. Hopkins.
Greenville, J. H. Van Amburgh.
Houston, W. H. Kimbrough.
Laredo, Charles C. Pierce.
Marshall, W. H. Attebery.
Palestine, C. H. Davenport.
Paris, J. G. Wooten.
San Antonio, J. E. Smith.
Sherman, P. W. Horn.
Temple, J. E. Blair.
Tyler, J. L. Henderson.
Waco, J. C. Lattimore.

UTAH.

Logan, Albert M. Merrill.
Ogden, William Allison.
Provo, William S. Rawlings.
Salt Lake City, Frank B. Cooper.

VERMONT.

Barre, O. D. Mathewson.
Brattleboro, H. K. Whitaker.
Burlington, Henry O. Wheeler.
Montpelier, J. H. Lucia.
Rutland, Willard A. Frasier.
St. Albans, Francis A. Bagnall.
St. Johnsbury, Clarence H. Dempsey.

VIRGINIA.

Alexandria, Kosciusko Kemper.
Charlottesville, F. A. Massie.
Danville, Abner Anderson.
Fredericksburg, Benjamin P. Willis.
Lynchburg, E. C. Glass.
Manchester, David L. Pulliam.
Newport News, Thomas Temple Powell.
Norfolk, Richard A. Dobie.
Petersburg, D. M. Brown.
Portsmouth, John C. Ashton.
Richmond, William F. Fox.
Roanoke, Bushrod Rust.
Staunton, John H. Bader.
Winchester, Maurice M. Lynch.

WASHINGTON.

Fairhaven, W. J. Hughes.
New Whatcom, E. E. White.
Olympia, F. B. Hawes.
Seattle, Frank J. Barnard.
Spokane, D. Bemiss.
Tacoma, R. S. Bingham.
Walla Walla, R. C. Kerr.

WEST VIRGINIA.

Huntington, W. H. Cole.
Martinsburg, C. H. Cole.
Parkersburg, U. S. Fleming.
Wheeling, W. H. Anderson.

WISCONSIN.

Antigo, F. F. Showers.
Appleton, Carrie E. Morgan.
Ashland, Bennett B. Jackson.
Baraboo, H. A. Whipple.
Beaver Dam, W. C. Griffis.
Beloit, Franklin E. Converse.
Berlin, N. M. Dodson.
Chippewa Falls, Robert D. Barton.
Depere:
  East Side, Andrew C. Mailer.
  West Side, J. D. Conley.
Eau Claire, Otis C. Gross.
Fond du Lac, L. A. Williams.
Green Bay, F. G. Kraege.
Jaynesville, D. D. Mayne.
Kaukauna, E. A. Baker.
Kenosha, Gerald R. McDowell.
La Crosse, John P. Bird.
Madison, R. B. Dudgeon.
Manitowoe, Fred. Christiansen.[3]
Marinette, John T. Edwards.
Menasha, John Roseh.
Menominee, Judson E. Hoyt.
Merrill, W. H. Schulz.
Milwaukee, H. O. R. Siefert.
Monroe, Alvin F. Rote.
Neenah, E. A. Williams.
Oconto, R. P. Smith.
Oshkosh, Buel T. Davis.
Portage, A. C. Kellogg.
Racine, J. B. Estabrook.
Sheboygan, H. F. Leverenz.
Stevens Point, Henry A. Simonds.
Superior, William H. Elson.
Watertown, Charles F. Viebahn.
Waukesha, H. L. Terry.[2]
Wausau, Karl Mathie.
West Green Bay, A. W. Burton.
White Water, A. A. Upham.
Wonewoe, W. F. Freeman.

WYOMING.

Cheyenne, James O. Churchill.
Laramie, Frank W. Lee.

[1] Principals. [2] Principal. [3] County superintendent.

III.—College Presidents.

I.—*Colleges for males and coeducational colleges of liberal arts.*

Name of president.	University or college.	Address.
Frank M. Roof, A. M	Howard College	East Lake, Ala.
Rev. S. M. Hosmer, D. D	Southern University	Greensboro, Ala.
James H. Riddle, Ph. M	Hartselle College	Hartselle, Ala.
George R. McNeill, Ph. D	Lafayette College	Lafayette, Ala.
Henry J. Willingham, A. B	Lineville College	Lineville, Ala.
Rev. Benedict Menges, O. S. B	St. Bernard College	St. Bernard, Ala.
Rev. C. S. Dinkins	Alabama Baptist Colored University	Selma, Ala.
Rev. William Tyrrell, S. J	Spring Hill College	Spring Hill, Ala.
James K. Powers, LL. D	University of Alabama	University, Ala.
M. M. Parker, A. M	University of Arizona	Tucson, Ariz.
G. C. Jones, A. M	Arkadelphia Methodist College	Arkadelphia, Ark.
John W. Conger, A. M	Ouachita Baptist College	Do.
Eugene R. Long, Ph. D	Arkansas College	Batesville, Ark.
J. T. Perigo	Arkansas Cumberland College	Clarksville, Ark.
Rev. A. C. Millar, A. M	Hendrix College	Conway, Ark.
J. L. Buchanan, LL. D	University of Arkansas	Fayetteville, Ark.
Rev. J. M. Cox, A. M., B. D	Philander Smith College	Little Rock, Ark.
J. F. Howell, A. M	Mountain Home Baptist College	Mountain Home, Ark.
B. I. Wheeler, Ph. D., LL. D	University of California	Berkeley, Cal.
Rev. F. L. Ferguson, B. D	Pomona College	Claremont, Cal.
Rev. Eli McClish, D. D	University of the Pacific	College Park, Cal.
Rev. G. W. Wadsworth, A. B	Occidental College	Los Angeles, Cal.
Rev. J. A. Linn, C. M	St. Vincent's College	Do.
Rev. T. G. Brownson, D. D	California College	Oakland, Cal.
Walter A. Edwards, A. M	Throop Polytechnic Institute	Pasadena, Cal.
Rev. John P. Frieden, S. J	St. Ignatius College	San Francisco, Cal
Rev. Joseph W. Riordan, S. J	Santa Clara College	Santa Clara, Cal.
G. H. Wilkinson, Ph. B	Pacific Methodist College	San Rosa, Cal.
D. S. Jordan, Ph. D., LL. D	Leland Stanford Junior University	Stanford University, Cal.
Rev. George Cochran, D. D., acting	University of Southern California	University, Cal.
James H. Baker, LL. D	University of Colorado	Boulder, Colo.
Rev. W. F. Slocum, jr., LL. D	Colorado College	Colorado Springs, Colo.
Rev. J. J. Brown, S. J	College of the Sacred Heart	Denver, Colo.
Rev. Wm. F. McDowell, Ph. D., S. T. D., chancellor.	University of Denver	University Park, Colo.
Rev. G. W. Smith, D. D., LL. D	Trinity College	Hartford, Conn.
Rev. B. P. Raymond, D. D., LL. D	Wesleyan University	Middletown, Conn.
Arthur T. Hadley, LL. D	Yale University	New Haven, Conn.
Rev. W. C. Jason, A. M., B. D	State College for Colored Students	Dover, Del.
Geo. A. Harter, Ph. D	Delaware College	Newark, Del.
Rev. T. J. Conaty, S. T. D., rector	Catholic University of America	Washington, D. C.
	Columbian University	Do.
E. M. Gallaudet, Ph. D., LL. D	Gallaudet College	Do.
Rev. John D. Whitney, S. J	Georgetown University	Do.
Rev. Edward X. Fink, S. J	Gonzaga College	Do.
Rev. J. E. Rankin, D. D., LL. D	Howard University	Do.
Rev. Brother Abdas, F. S. C	St. John's College	Do.
John F. Forbes, Ph. D	John B. Stetson University	Deland, Fla.
Rev. W. F. Yocum, D. D	Florida Agricultural College	Lake City, Fla
Rev. T. G. Lang, A. B	Florida Conference College	Leesburg, Fla.
Rev. Charles H. More, Ph. D	St. Leo Military College	St. Leo, Fla.
A. A. Murphree, A. B	Seminary West of the Suwanee River	Tallahassee, Fla.
Rev. G. M. Ward, A. M., B. D	Rollins College	Winter Park, Fla.
Walter B. Hill, A. M., chancellor	University of Georgia	Athens, Ga.
Rev. George Sale, A. M	Atlanta Baptist College	Atlanta, Ga.
Rev. Horace Bumstead, D. D	Atlanta University	Do.
Rev. J. M. Henderson, D. D	Morris Brown College	Do.
Vachel D. Whatley, A. B	Bowdon College	Bowdon, Ga.
Joseph S. Stewart, A. M	North Georgia Agricultural College	Dahlonega, Ga.
P. D. Pollock, LL. D	Mercer University	Macon, Ga.
Rev. C. E. Dowman, D. D	Emory College	Oxford, Ga.
Rev. C. M. Melden, Ph. D	Clark University	South Atlanta, Ga.
Charles A. Bell	Nannie Lou Warthen College	Wrightsville, Ga.
Rev. Joseph A. Sharp	Young Harris College	Young Harris, Ga.
Joseph P. Blanton, LL. D	University of Idaho	Moscow, Idaho.
Rev. H. D. Clark, D. D., Ph. D	Hedding College	Abingdon, Ill.
Rev. E. M. Smith, D. D	Illinois Wesleyan University	Bloomington, Ill.
Rev. M. J. Marsile, C. S. V	St. Viateur's College	Bourbonnais, Ill.
W. H. Bradley, A. M., chairman	Blackburn University	Carlinville, Ill.
Rev. J. M. Ruthrauff, D. D	Carthage College	Carthage, Ill.
Andrew S. Draper, LL. D	University of Illinois	Champaign, Ill.
Rev. John F. G. Pahls, S. J	St. Ignatius College	Chicago, Ill.
Rev. Wm. R. Harper, Ph. D., D. D	University of Chicago	Do.
W. E. Lugenbeel, Ph. D	Austin College	Effingham, Ill.
Rev. Daniel Irion	Evangelical Proseminary	Elmhurst, Ill.
J. H. Hardin, LL. D	Eureka College	Eureka, Ill.
Henry W. Rogers, LL. D	Northwestern University	Evanston, Ill.
Rev. J. A. Leavitt, D. D	Ewing College	Ewing, Ill.
J. E. Bittinger, A. M	Northern Illinois College	Fulton, Ill.
Rev. T. R. Willard, A. M., dean	Knox College	Galesburg, Ill.

III.—College Presidents—Continued.

I.—*Colleges for males and coeducational colleges of liberal arts*—Continued.

Name of president.	University or college.	Address.
Rev. Charles E. Nash, D. D	Lombard University	Galesburg, Ill.
Wilson T. Hogg, Ph. B	Greenville College	Greenville, Ill.
M. E. Churchill, A. M., B. D., acting.	Illinois College	Jacksonville, Ill.
Rev. J. G. K. McClure, D. D	Lake Forest University	Lake Forest, Ill.
M. H. Chamberlin, LL. D	McKendree College	Lebanon, Ill.
A. E. Turner, A. M	Lincoln University	Lincoln, Ill.
Rev. Samuel R. Lyons, D. D	Monmouth College	Monmouth, Ill.
Rev. H. J. Kiekhoefer, A. M	Northwestern College	Naperville, Ill.
Rev. V. Huber, O. S B., rector	St. Bede College	Peru, Ill.
Rev. N. Leonard, O S. F., reetor	St. Francis Solanus College	Quiney, Ill.
	Augustana College	Roek Island, Ill.
Rev. H. Storff, O. S. F., reetor	St. Joseph's Dioeesan College	Teutopolis, Ill.
Austen K. de Blois, Ph. D	Shurtleff College	Upper Alton, Ill.
Rev. Wm. S. Reese, Ph. M	Westfield College	Westfield, Ill.
Rev. C. A. Blanehard, D. D	Wheaton College	Wheaton, Ill.
J. H. Seott, A. B	Indian University	Baeone, Ind. T.
A. Grant Evans	Henry Kendall College	Museogee, Ind. T.
Joseph Swain, LL. D	Indiana University	Bloomington, Ind.
Rev. Wm. P. Kane, D. D	Wabash College	Crawfordsville, Ind.
Rev. Jos. Sehmidt	Coneordia College	Fort Wayne, Ind.
Rev. William T. Stott, D. D	Franklin College	Franklin, Ind.
Rev. H. A. Gobin, D. D	De Pauw University	Greeneastle, Ind.
Rev. D. W. Fisher, D. D., LL. D	Hanover College	Hanover, Ind.
Seot Butler, LL. D	Butler College	Irvington, Ind.
Rev. L. J. Aldrieh, D. D	Union Christian College	Merom, Ind.
Rev. C. W. Lewis, D. D	Moores Hill College	Moores Hill, Ind.
Rev. A. Morrissey, C. S. C	University of Notre Dame	Notre Dame, Ind.
Joseph J. Mills, LL. D	Earlham College	Richmond, Ind.
H. C. Garvin	Ridgeville College	Ridgeville, Ind.
Rev. A. Sehmitt, O. S. B	St. Meinrad College	St. Meinrad, Ind.
Rev. T. C. Reade, D. D	Taylor University	Upland, Ind.
Rev. S. B. MeCormiek, D. D	Coe College	Cedar Rapids, Iowa.
J. Frederiek Hirseh, A. M	Charles City College	Charles City, Iowa,
O. Kraushaar	Wartburg College	Clinton, Iowa.
Rev. J. C. Calhoun, A. M	Amity College	College Springs, Iowa.
Rev. Laur. Larsen	Luther College	Deeorah, Iowa.
Rev. H. L. Stetson, D. D	Des Moines College	Des Moines, Iowa.
Rev. Wm. B. Craig, D. D., ehaneellor.	Drake University	Do.
Rev. John P. Carroll, D. D	St. Joseph's College	Dubuque, Iowa.
Rev. D. E. Jenkins, Ph. D	Parsons College	Fairfield, Iowa.
Rev. Guy P. Benton, A. M	Upper Iowa University	Fayette, Iowa.
Rev. George A. Gates, D. D	Iowa College	Grinnell, Iowa.
Andrew G. Wilson, A. M	Lenox College	Hopkinton, Iowa.
Charles E. Shelton, A. M	Simpson College	Indianola, Iowa.
George E. MaeLean, LL. D	State University of Iowa	Iowa City, Iowa.
Ernest R. Dewsnup, A. B	Graeeland College	Lamoni, Iowa.
Carl Summerbell, A. M	Palmer College	Legrand, Iowa.
Rev. E. S. Havighorst, D. D	German College	Mount Pleasant, Iowa.
Rev. Franeis D. Blakeslee, D. D	Iowa Wesleyan University	Do.
Rev. Wm. F. King, LL. D	Cornell College	Mount Vernon, Iowa.
A. Rosenberger, A. B., LL. B	Penn College	Oskaloosa, Iowa.
Asa B. Bush, Ph. D	Central University of Iowa	Pella, Iowa.
Rev. W. S. Lewis, D. D	Morningside College	Sioux City, Iowa.
Rev. Harvey Hostetler, A. B	Buena Vista College	Storm Lake, Iowa.
Rev. R. C. Hughes, A. M	Tabor College	Tabor, Iowa.
Rev. L. Bookwalter, D. D	Western College	Toledo, Iowa.
Rev. Jacob A. Clutz, D. D	Midland College	Atehison, Kans.
Rev. I. Wolf, O. S. B., D. D	St. Benedict's College	Do.
Rev. L. H. Murlin, D. D	Baker University	Baldwin, Kans.
Rev. E. H. Vaughan, Ph. D., D. D	Soule College	Dodge City, Kans.
Rev. J. C. Miller, D. D	College of Emporia	Emporia, Kans.
Roy V. Magers, A. M	Highland University	Highland, Kans.
E. N. Johnson, A. M., C. E	Campbell University	Holton, Kansas.
Rev. D. S. Stephens, D. D., ehaneellor.	Kansas City University	Kansas City, Kans.
F. H. Snow, Ph. D., LL. D	University of Kansas	Lawrence, Kans.
Rev. C. M. Brooke, D. D	Lane University	Leeompton, Kans.
O. B. Whitaker, A. M., Pd. D	Kansas Christian College	Lincoln, Kans.
Rev. C. A. Swensson, Ph. D	Bethany College	Lindsborg, Kans.
J. D. S. Riggs, Ph. D	Ottawa University	Ottawa, Kans.
Rev. James MeCabe, S. J	St. Mary's College	St. Marys, Kans.
George J. Hagerty, A. M	Kansas Wesleyan University	Salina, Kans.
Rev. F. M. Speneer, D. D	Cooper Memorial College	Sterling, Kans.
Geo. M. Herriek, Litt. D	Washburn College	Topeka, Kans.
Rev. N. J. Morrison, D. D., LL. D	Fairmount College	Wichita, Kans.
Rev. A. W. Meyer	St. John's Lutheran College	Winfield, Kans.
Rev. W. H. Rose, D. D	Southwest Kansas College	Do.
Rev. J. P. Faulkner, A. M	Union College	Barbourville, Ky.

III.—College Presidents—Continued.

I.—*Colleges for males and coeducational colleges of liberal arts*—Continued.

Name of president.	University or college.	Address.
Rev. Wm. G. Frost, Ph. D	Berea College	Berea, Ky.
Wm. A. Obenchain, A. M	Ogden College	Bowling Green, Ky.
Rev. Wm. C. Roberts, D. D., LL. D	Centre College	Danville, Ky.
Arthur Yager, Ph. D., chairman	Georgetown College	Georgetown, Ky.
Rev. J. H. Burnett, A. M	Liberty College	Glasgow, Ky.
S. S. Woolwine	South Kentucky College	Hopkinsville, Ky.
Reuben L. Cave, A. M	Kentucky University	Lexington, Ky.
J. K. Patterson, Ph. D., LL. D	State College of Kentucky	Lexington, Ky.
Rev. L. H. Blanton, D. D., chancellor.	Central University	Richmond, Ky.
Rev. E. S. Alderman, D. D	Bethel College	Russellville, Ky.
Rev. John Fehrenbach	St. Mary's College	St. Marys, Ky.
Rev. E. H. Pearce, D. D	Kentucky Wesleyan College	Winchester, Ky.
Thomas D. Boyd, LL. D	Louisiana State University	Baton Rouge, La.
Rev. M. Thouvenin, S. M	Jefferson College	Convent, La.
Rev. I. W. Cooper, D. D	Centenary College of Louisiana	Jackson, La.
G. W. Thigpen, A. M	Keatchie College	Keatchie, La.
Rev. Henry C. Semple, S. J	College of the Immaculate Conception	New Orleans, La.
Geo. H. Felton, A. M., M. D., acting	Leland University	Do.
Rev. L. G. Adkinson, D. D	New Orleans University	Do.
Oscar Atwood, A. M	Straight University	Do.
E. A. Alderman, D. C. L	Tulane University	Do.
Rev. Wm. De Witt Hyde, D. D	Bowdoin College	Brunswick, Me.
Rev. G. C. Chase, D. D., LL. D	Bates College	Lewiston, Me.
A. W. Harris, Ph. D., Sc. D	University of Maine	Orono, Me.
Rev. Nathaniel Butler, D. D	Colby University	Waterville, Me.
Thomas Fell, Ph. D., LL. D	St. John's College	Annapolis, Md.
D. C. Gilman, LL. D	Johns Hopkins University	Baltimore, Md.
Rev. John A. Morgan, S. J	Loyola College	Do.
Rev. Francis J. Wagner, D. D	Morgan College	Do.
Charles W. Reid, Ph. D	Washington College	Chestertown, Md.
R. W. Silvester	Maryland Agricultural College	College Park, Md.
Rev. Brother Abraham	Rock Hill College	Ellicott City, Md.
Rev. C. B. Schrantz, S. S	St. Charles College	Do.
Rev. Wm. L. O'Hara, A. M	Mount St. Mary's College	Mount St. Marys, Md.
Rev. James M. Nourse	New Windsor College	New Windsor, Md.
Rev. Thomas H. Lewis, D. D	Western Maryland College	Westminster, Md.
Rev. George Harris, D. D., LL. D	Amherst College	Amherst, Mass.
Rev. W. G. R. Mullan, S. J	Boston College	Boston, Mass.
Rev. Wm. F. Warren, LL. D	Boston University	Do.
Charles W. Eliot, LL. D	Harvard University	Cambridge, Mass.
Rev. Samuel H. Lee, A. M	French-American College	Springfield, Mass.
Rev. Elmer H. Capen, D. D	Tufts College	Tufts College, Mass.
F. Carter, Ph. D., LL. D	Williams College	Williamstown, Mass.
G. Stanley Hall, Ph. D., LL. D	Clark University	Worcester, Mass.
Rev. John F. Lehy, S. J	College of the Holy Cross	Do.
Rev. David Jones, D. D	Adrian College	Adrian, Mich.
Rev. John P. Ashley, Ph. D	Albion College	Albion, Mich.
Rev. August F. Bruske, D. D	Alma College	Alma, Mich.
James B. Angell, LL. D	University of Michigan	Ann Arbor, Mich.
Rev. James D. Foley, S. J	Detroit College	Detroit, Mich.
Hon. Geo. F. Mosher, LL. D	Hillsdale College	Hillsdale, Mich.
Gerrit J. Kollen, LL. D	Hope College	Holland, Mich.
A. G. Slocum, LL. D	Kalamazoo College	Kalamazoo, Mich.
Rev. W. G. Sperry, D. D	Olivet College	Olivet, Mich.
Rev. P. Engel, O. S. B., Ph. D	St. John's University	Collegeville, Minn.
Georg Sverdrup	Augsburg Seminary	Minneapolis, Minn.
Cyrus Northrop, LL. D	University of Minnesota	Do.
Rev. J. W. Strong, D. D., LL. D	Carleton College	Northfield, Minn.
Rev. Thorbjörn N. Mohn	St. Olaf College	Do.
Rev. Geo. H. Bridgman, D. D	Hamline University	St. Paul, Minn.
James Wallace, Ph. D	Macalester College	Do.
Rev. M. Wahlstrom, Ph. D	Gustavus Adolphus College	St. Peter, Minn.
R. M. Lawrence, A. M	Parker College	Winnebago City, Minn.
Rev. Wm. T. Lowrey, D. D	Mississippi College	Clinton, Miss.
Rev. Wm. W. Foster, jr., D. D	Rust University	Holly Springs, Miss.
Rev. W. B. Murrah, D. D., LL. D	Millsaps College	Jackson, Miss.
Robert B. Fulton, LL. D., chancellor.	University of Mississippi	University, Miss.
Zuinglius Moore, A. B	Central Christian College	Albany, Mo.
G. H. Burr, A. M	Northwest Missouri College	Do.
James Rice, A. M	Southwest Baptist College	Bolivar, Mo.
J. B. Tate	Pike College	Bowling Green, Mo.
Rev. B. W. Baker, Ph. D	Missouri Wesleyan College	Cameron, Mo.
Clinton Lockhart, Ph D	Christian University	Canton, Mo.
Rev. E. M. Hopkins, C. M	St. Vincent College	Cape Girardeau, Mo.
Warren I. Moore, A. M	Clarksburg Baptist College	Clarksburg, Mo.
Richard H. Jesse, LL. D	University of the State of Missouri	Columbia, Mo.
Rev. Geo. W. Mitchell, D. D	Grand River Christian Union College	Edinburg, Mo.
E. B. Craighead, A. M	Central College	Fayette, Mo.

III.—College Presidents—Continued.

I.—*Colleges for males and coeducational colleges of liberal arts*—Continued.

Name of President.	University or college.	Address.
J. H. MacCracken, Ph. D	Westminster College	Fulton, Mo.
Rev. C. C. Hemenway, Ph. D	Pritchett College	Glasgow, Mo.
Jere T. Muir, LL. D	Lagrange College	Lagrange, Mo.
Rev. J. P. Greene, D. D., LL. D	William Jewell College	Liberty, Mo.
Rev. Wm. H. Black, D. D	Missouri Valley College	Marshall, Mo.
Joseph J. Pritchett, A. M	Morrisville College	Morrisville, Mo.
Rev. W. C. Hill, A. M	Scarritt Collegiate Institute	Neosho, Mo.
J. R. McChesney	Odessa College	Odessa, Mo.
L. M. McAfee, A. M., chairman	Park College	Parkville, Mo.
C. L. Wolcott	St. Charles College	St. Charles, Mo.
Brother Emery, F. S. C	Christian Brothers College	St. Louis, Mo.
Rev. J. F. X. Hoeffer, S. J	St. Louis University	Do.
Winfield S. Chaplin, LL. D., chancellor.	Washington University	Do.
Rev. Homer T. Fuller, Ph. D	Drury College	Springfield, Mo.
Rev. J. A. Thompson, D. D	Tarkio College	Tarkio, Mo.
Rev. C. J. Kephart, D. D	Avalon College	Trenton, Mo.
Geo. B. Addicks, A. M	Central Wesleyan College	Warrenton, Mo.
Rev. A. B. Martin, A. M	College of Montana	Deerlodge, Mont.
Rev. Thomas Van Scoy, D. D	Montana Wesleyan University	Helena, Mont.
Oscar J. Craig, Ph. D	University of Montana	Missoula, Mont.
Rev. D. R. Kerr, Ph. D., D. D	University of Omaha	Bellevue, Nebr.
W. P. Aylsworth, LL. D	Cotner University	Bethany, Nebr.
Wm. T. Bland	Union College	College View, Nebr.
Rev. [illegible]	[illegible] College	Crete, Nebr.
Rev. Geo. Sutherland, D. D	[illegible] Island College	Grand Island, Nebr.
S. G. Pattison, A. M	Hastings College	Hastings, Nebr.
Rev. E. B. Andrews, D. D., LL. D., chancellor.	University of Nebraska	Lincoln, Nebr.
Rev. M. P. Dowling, S. J	Creighton University	Omaha, Nebr.
Rev. D. W. C. Huntington, D. D., chancellor.	Nebraska Wesleyan University	University Place, Nebr.
Wm. E. Schell, A. M	York College	York, Nebr.
Rev. Joseph E. Stubbs, D. D	State University of Nevada	Reno, Nev.
Rev. W. J. Tucker, D. D., LL. D	Dartmouth College	Hanover, N. H.
Rev. F. Widman, O. S. B., director	St. Anselm's College	Manchester, N. H.
Rev. John Harpes, S. J	St. Peter's College	Jersey City, N. J.
Rev. G. Bien, O. S. B., director	St. Benedict's College	Newark, N. J.
Austin Scott, Ph. D., LL. D	Rutgers College	New Brunswick, N. J.
Rev. F. L. Patton, D. D., LL. D	Princeton University	Princeton, N. J.
Rev. John A. Stafford, S. T. L	Seton Hall College	South Orange, N. J.
C. L. Herrick, Ph. D	University of New Mexico	Albuquerque, N. Mex.
Rev. B. C. Davis, Ph. D	Alfred University	Alfred, N. Y.
Rev. Joseph F. Butler, O. F. M	St. Bonaventure's College	Allegany, N. Y.
Rev. Lawrence T. Cole, Ph. D	St. Stephen's College	Annandale, N. Y.
C. H. Levermore, Ph. D	Adelphi College	Brooklyn, N. Y.
Henry S. Snow, LL. M	Polytechnic Institute of Brooklyn	Do.
Brother Jerome, O. S. F	St. Francis College	Do.
Rev. James J. Sullivan, C. M	St. John's College	Do.
Rev. John B. Theis, S. J	Canisius College	Buffalo, N. Y.
Rev. Almon Gunnison, D. D	St. Lawrence University	Canton, N. Y.
Rev. M. Woolsey Stryker, D. D	Hamilton College	Clinton, N. Y.
Rev. Robert E. Jones, D. D	Hobart College	Geneva, N. Y.
Rev. George E. Merrill, D. D	Colgate University	Hamilton, N. Y.
J. G. Schurman, Sc. D., LL. D	Cornell University	Ithaca, N. Y.
Rev. Thomas E. Murphy, S. J	College of St. Francis Xavier	New York, N. Y.
Alexander S. Webb, LL. D	College of the City of New York	Do.
Hon. Seth Low, LL. D	Columbia University	Do.
Rev. Brother Justin, LL. D	Manhattan College	Do.
Rev. T. J. Campbell, S. J	St. John's College	Do.
Rev. H. M. MacCracken, D. D., LL. D., chancellor.	New York University	Do.
Rev. P. S. MacHale, C. M	Niagara University	Niagara University, N. Y.
Rush Rhees, A. M	University of Rochester	Rochester, N. Y.
Rev. A. V. V Raymond, D. D	Union College	Schenectady, N. Y.
Rev. J. R. Day, D. D., chancellor	Syracuse University	Syracuse, N. Y.
Rev. Leo Haid, D. D., O. S. B	St. Mary's College	Belmont, N. C.
	University of North Carolina	Chapel Hill, N. C.
Rev. D. J. Sanders, D. D	Biddle University	Charlotte, N. C.
Rev. J. B. Shearer, D. D., LL. D	Davidson College	Davidson, N. C.
Rev. John C. Kilgo, D. D	Trinity College	Durham, N. C.
Rev. W. W. Staley, D. D	Elon College	Elon College, N. C.
L. Lyndon Hobbs, A. M	Guilford College	Guilford College, N. C.
Rev. Robert A. Yoder, A. M	Lenoir College	Hickory, N. C.
Edgar Bowers, A. M., acting	North Carolina College	Mount Pleasant, N. C.
Rev. J. C. Clapp, D. D	Catawba College	Newton, N. C.
Chas. F. Meserve, A. M	Shaw University	Raleigh, N. C.
W. E. Abernethy	Rutherford College	Rutherford College, N. C.
Rev. William H. Goler, D. D	Livingstone College	Salisbury, N. C.
Rev. C. E. Taylor, D. D., Litt. B	Wake Forest College	Wake Forest, N. C.

III.—College Presidents—Continued.

I.—*Colleges for males and coeducational colleges of liberal arts*—Continued.

Name of president.	University or college.	Address.
Rev. George F. Kirby	Weaverville College	Weaverville, N. C.
Rev. H. C. Simmons, D. D	Fargo College	Fargo, N. Dak.
W. Merrifield, A. M	University of North Dakota	University, N. Dak.
Rev. E. P. Robertson	Red River Valley University	Wahpeton, N. Dak.
Rev. Ira A. Priest, D. D	Buchtel College	Akron, Ohio.
Rev. Albert B. Riker, D. D	Mount Union College	Alliance, Ohio.
Charles W. Super, Ph. D	Ohio University	Athens, Ohio.
Rev. R. M. Freshwater, A. M	Baldwin University	Berea, Ohio.
Rev. C. Riemenschneider, Ph. D	German Wallace College	Do.
Rev. David McKinney, D. D	Cedarville College	Cedarville, Ohio.
Rev. M. J. O'Connor, S. J	St. Xavier College	Cincinnati, Ohio.
Howard Ayers, Ph. D	University of Cincinnati	Do.
Rev. Godfrey J. Schulte, S. J	St. Ignatius College	Cleveland, Ohio.
Rev. C. F. Thwing, D. D., LL. D	Western Reserve University	Do.
Rev. F. W. Stellhorn, D. D	Capital University	Columbus, Ohio.
Rev. W. O. Thompson, D. D	Ohio State University	Do.
Rev. J. R. H. Latchaw, D. D	Defiance College	Defiance, Ohio.
Rev. J. W. Bashford, Ph. D., D. D	Ohio Wesleyan University	Delaware, Ohio.
Rev. C. Manchester, A. M., B. D	Findlay College	Findlay, Ohio.
Rev. Wm. F. Peirce, L. H. D	Kenyon College	Gambier, Ohio.
D. B. Purinton, Ph. D., LL. D	Denison University	Granville, Ohio.
Ely V. Zollars, LL. D	Hiram College	Hiram, Ohio.
Rev. S. P. Long, A. M	Lima College	Lima, Ohio.
J. H. Chamberlin, Litt. D., dean	Marietta College	Marietta, Ohio.
Rev. W. A. Williams, D. D	Franklin College	New Athens, Ohio.
Rev. Jesse Johnson, D. D	Muskingum College	New Concord, Ohio.
Rev. John H. Barrows, D. D	Oberlin College	Oberlin, Ohio.
Rev. David S. Tappan, D. D	Miami University	Oxford, Ohio.
Rev. Geo. W. MacMillan, Ph. D., D. D.	Richmond College	Richmond, Ohio.
Rev. J. M. Davis, Ph. D., D. D	Rio Grande College	Rio Grande, Ohio.
J. H. Beal, Sc. D	Scio College	Scio, Ohio.
Rev. S. A. Ort, D. D., LL. D	Wittenberg College	Springfield, Ohio.
Rev. John A. Peters, D. D	Heidelberg University	Tiffin, Ohio.
Rev. T. J. Sanders, Ph. D	Otterbein University	Westerville, Ohio.
Rev. S. T. Mitchell, LL. D	Wilberforce University	Wilberforce, Ohio.
James B. Unthank, M. S	Wilmington College	Wilmington, Ohio.
Rev. Louis E. Holden	University of Wooster	Wooster, Ohio.
Hon. Wm. A. Bell, A. M	Antioch College	Yellowsprings, Ohio.
D. R. Boyd, A. M	University of Oklahoma	Norman, Okla.
Wallace H. Lee, A. M	Albany College	Albany, Oreg.
Frank Strong, Ph. D	University of Oregon	Eugene, Oreg.
Rev. Thos. McClelland, D. D	Pacific University	Forestgrove, Oreg.
Rev. C. C. Poling, Ph. B	Lafayette Seminary	Lafayette, Oreg.
H. L. Boardman, A. M	McMinnville College	McMinnville, Oreg.
Thomas Newlin, A. M	Pacific College	Newberg, Oreg.
W. T. Wyatt	Philomath College	Philomath, Oreg.
Willis C. Hawley, A. M	Willamette University	Salem, Oreg.
Rev. George Whitaker, D. D	Portland University	University Park, Oreg.
Rev. W. J. Holland, Ph. D., D. D., LL. D., chancellor.	Western University of Pennsylvania	Allegheny, Pa.
Rev. Theodore L. Seip, D. D	Muhlenberg College	Allentown, Pa.
Rev. H. U. Roop, Ph. D	Lebanon Valley College	Annville, Pa.
Rev. Leander Schnerr, O. S. B	St. Vincent College	Beatty, Pa.
Rev. W. P. Johnston, D. D	Geneva College	Beaverfalls, Pa.
Rev. Aug. Schultz, D. D	Moravian College	Bethlehem, Pa.
Rev. G. E. Reed, D. D., LL. D	Dickinson College	Carlisle, Pa.
Col. C. E. Hyatt, C. E	Pennsylvania Military College	Chester, Pa.
Rev. Henry T. Spangler, D. D	Ursinus College	Collegeville, Pa.
E. D. Warfield, LL. D	Lafayette College	Easton, Pa.
Rev. H. W. McKnight, D. D., LL. D	Pennsylvania College	Gettysburg, Pa.
Rev. Theo. B. Roth, D. D	Thiel College	Greenville, Pa.
Rev. I. C. Ketler, Ph. D., D. D	Grove City College	Grove City, Pa.
Isaac Sharpless, Sc. D., LL. D	Haverford College	Haverford, Pa.
Rev. J. S. Stahr, Ph. D., D. D	Franklin and Marshall College	Lancaster, Pa.
John H. Harris, Ph. D., LL. D	Bucknell University	Lewisburg, Pa.
Rev. Isaac N. Rendall, D. D	Lincoln University	Lincoln University, Pa.
Rev. Wm. H. Crawford, D. D	Allegheny College	Meadville, Pa.
C. A. Bowman, Ph. D	Albright College	Myerstown, Pa.
Rev. Aaron E. Gobble, D. D	Central Pennsylvania College	New Berlin, Pa.
Rev. R. G. Ferguson, D. D	Westminster College	New Wilmington, Pa.
Rev. R. E. Thompson, S. T. D	Central High School	Philadelphia, Pa.
Brother Isidore, F. S. C	La Salle College	Do.
C. C. Harrison, LL. D., provost	University of Pennsylvania	Do.
Rev. M. A. Hehir, C. S. Sp	Holy Ghost College	Pittsburg, Pa.
Rev. C. W. Heisler	Susquehanna University	Selinsgrove, Pa.
Thomas M. Drown, LL. D	Lehigh University	South Bethlehem, Pa.
G. W. Atherton, LL. D	Pennsylvania State College	State College, Pa.
W. W. Birdsall, B. S	Swarthmore College	Swarthmore, Pa.
Rev. L. A. Delurey, O. S. A	Villanova College	Villanova, Pa.

III.—College Presidents—Continued.

I.—*Colleges for males and coeducational colleges of liberal arts*—Continued.

Name of president.	University or college.	Address.
G. E. Brenneman, A. B	Volant College	Volant, Pa.
Rev. J. D. Moffat, D. D., LL. D	Washington and Jefferson College	Washington, Pa.
Rev. W. H. P. Faunce, D. D	Brown University	Providence, R. I.
Harrison Randolph, LL. D	College of Charleston	Charleston, S. C.
A. E. Spencer, A. M	Presbyterian College of South Carolina	Clinton, S. C.
Rev. D. H. Johnson	Allen University	Columbia, S. C.
F. C. Woodward, Litt. D	South Carolina College	Do.
Rev. Francis Y. Pressly, D. D	Erskine College	Duewest, S. C.
A. P. Montague, Ph. D., LL. D	Furman University	Greenville, S. C.
Geo. B. Cromer, A. M	Newberry College	Newberry, S. C.
Rev. L. M. Dunton, D. D	Claflin University	Orangeburg, S. C.
James H. Carlisle, LL. D	Wofford College	Spartanburg, S. C.
Rev. Elmer E. Lymer, D. D	Black Hills College	Hot Springs, S. Dak.
Rev. C. H. French, A. M	Huron College	Huron, S. Dak.
Rev. W. I. Graham, D. D	Dakota University	Mitchell, S. Dak.
Rev. I. P. Patch	Redfield College	Redfield, S. Dak.
Garrett Droppers, A. B	University of South Dakota	Vermilion, S. Dak.
Rev. H. K. Warren, A. M	Yankton College	Yankton, S. Dak.
Rev. John H. Race, A. M	U. S. Grant University	Athens, Tenn.
Rev. A. G. Buckner, A. B	King College	Bristol, Tenn.
Rev. George Summey, D. D., chancellor.	Southwestern Presbyterian University	Clarksville, Tenn.
J. F. Spence, S. T. D., LL. D., chancellor.	American Temperance University	Harriman, Tenn.
Rev. J. E. Lowery, A. M	Hiwassee College	Hiwassee College, Tenn.
G. M. Savage, LL. D	Southwestern Baptist University	Jackson, Tenn.
Rev. R. W. McGranahan, D. D	Knoxville College	Knoxville, Tenn.
Chas. W. Dabney, Ph. D., LL. D	University of Tennessee	Do.
N. Green, LL. D., chancellor	Cumberland University	Lebanon, Tenn.
Chas. E. Stoaks	Bethel College	McKenzie, Tenn.
Rev. S. W. Boardman, D. D., LL. D.	Maryville College	Maryville, Tenn.
Brother Maurelian	Christian Brothers' College	Memphis, Tenn.
J. Hopwood, A. M	Milligan College	Milligan, Tenn.
J. T. Henderson, A. M	Carson and Newman College	Mossycreek, Tenn.
Rev. J. Braden, D. D	Central Tennessee College	Nashville, Tenn.
Rev. E. M. Cravath, D. D	Fisk University	Do.
Rev. Peter B. Guernsey, A. M	Roger Williams University	Do.
Wm. H. Payne, LL. D., chancellor.	University of Nashville	Do.
James H. Kirkland, Ph. D., LL. D., chancellor	Vanderbilt University	Do.
B. Lawton Wiggins, LL. D., vice-chancellor.	University of the South	Sewanee, Tenn.
W. N. Billingsley, A. M	Burritt College	Spencer, Tenn.
Rev. J. L. Bachman, A. M	Sweetwater College	Sweetwater, Tenn.
Rev. Jere Moore, D. D	Greeneville and Tusculum College	Tusculum, Tenn.
Rev. James T. Cooter, A. M	Washington College	Washington College, Tenn.
Rev. John T. Boland, C. S. C	St. Edward's College	Austin, Tex.
Wm. L. Prather	University of Texas	Do.
J. H. Grove, A. M	Howard Payne College	Brownwood, Tex.
T. H. Bridges	Henry College	Campbell, Tex.
Rev. Oscar L. Fisher, D. D	Fort Worth University	Fort Worth, Tex.
Rev. W. F. Lloyd, D. D	Polytechnic College	Do.
Rev. J. B. Quinlan, S. J	St. Mary's University	Galveston, Tex.
Robert S. Hyer, A. M., regent	Southwestern University	Georgetown, Tex.
J. B. Johnson, Ph. D., chairman	Burleson College	Greenville, Tex.
Rev. M. W. Dogan, A. M	Wiley University	Marshall, Tex.
Rev. John Wolf	St. Louis College	San Antonio, Tex.
Rev. T. R. Sampson, D. D	Austin College	Sherman, Tex.
L. A. Johnson, Ph. D., chairman	Trinity University	Tehuacana, Tex.
Addison Clark, LL. D	Add-Ran Christian University	Waco, Tex.
Oscar H. Cooper, LL. D	Baylor University	Do.
Rev. I. M. Burgan, D. D	Paul Quinn College	Do.
Wm. J. Kerr, B. S	Brigham Young College	Logan, Utah.
Rev. W. S. Hunt	Salt Lake College	Salt Lake City, Utah.
Gen. John Eaton, LL. D	Sheldon Jackson College	Do.
Joseph T. Kingsbury, Ph. D	University of Utah	Do.
Rev. M. H. Buckham, D. D	University of Vermont	Burlington, Vt.
Ezra Brainerd, LL. D	Middlebury College	Middlebury, Vt.
Rev. Allan D. Brown, D. D	Norwich University	Northfield, Vt.
Rev. Wm. G. Starr, D. D	Randolph-Macon College	Ashland, Va.
W. B. Yount	Bridgewater College	Bridgewater, Va.
P. B. Barringer, M. D., chairman	University of Virginia	Charlottesville, Va.
Rev. R. G. Waterhouse, D. D	Emory and Henry College	Emory, Va.
F. P. Ramsay, A. M	Fredericksburg College	Fredericksburg, Va.
Rev. Richard McIlwaine, D. D	Hampden-Sidney College	Hampden-Sidney, Va.
Hon. Wm. L. Wilson, LL. D	Washington and Lee University	Lexington, Va.
F. W. Boatwright, LL. D	Richmond College	Richmond, Va.
Julius D. Dreher, Ph. D	Roanoke College	Salem, Va.
L. G. Tyler, LL. D	College of William and Mary	Williamsburg, Va.

III.—College Presidents—Continued.

I.—*Colleges for males and coeducational colleges of liberal arts*—Continued.

Name of president.	University or college.	Address.
A. C. Jones, Ph. D	Vashon College	Burton, Wash.
Frank P. Graves, Ph. D	University of Washington	Seattle, Wash.
Rev. James J. Rebmann, S. J	Gonzaga College	Spokane, Wash.
F. B. Gault, M. S	Whitworth College	Tacoma, Wash.
Rev. Wilmot Whitfield, D. D	Puget Sound University	Do.
Brother Zenonian	St. James College	Vancouver, Wash.
Rev. S. B. L. Penrose, A. B., B. D	Whitman College	Walla Walla, Wash.
Rev. S. F. McClung	Barboursville College	Barboursville, W. Va.
C. A. Young, Ph. D	Bethany College	Bethany, W. Va.
Jerome H. Raymond, Ph. D	West Virginia University	Morgantown, W. Va.
Rev. S. Plantz, Ph. D., D. D	Lawrence University	Appleton, Wis.
Rev. E. D. Eaton, D. D., LL. D	Beloit College	Beloit, Wis.
Rev. H. A. Muehlmeier, D. D	Mission House	Franklin, Wis.
Rev. W. D. Thomas, Ph. D., D. D	Gale College	Galesville, Wis.
Chas. K. Adams, LL. D	University of Wisconsin	Madison, Wis.
Rev. Wm. C. Whitford, D. D	Milton College	Milton, Wis.
Rev. M. J. F. Albrecht	Concordia College	Milwaukee, Wis.
Rev. Wm. B. Rogers, S. J	Marquette College	Do.
Rev. Rufus C. Flagg, D. D	Ripon College	Ripon, Wis.
Rev. A. F. Ernst	Northwestern University	Watertown, Wis.
Elmer E. Smiley, D. D	University of Wyoming	Laramie, Wyo.

II.—*Colleges for women.*

Rev. H. W. Browder, A. M	Athens Female College	Athens, Ala.
Henry Y. Weissinger, A. M	East Lake Athenæum	Eastlake, Ala.
Thos. F. Jones	Union Female College	Eufaula, Ala.
Rev. Robert G. Patrick, D. D	Judson Female Institute	Marion, Ala.
Jas. D. Wade, A. M	Marion Female Seminary	Do.
H. S. Roller	Isbell College	Talladega, Ala.
E. H. Murfee, LL. D	Central Female College	Tuscaloosa, Ala.
Rev. W. F. Melton, Ph. D	Tuscaloosa Female College	Do.
John Massey, LL. D	Alabama Conference Female College	Tuskegee, Ala.
J. G. Lile, A. M	Central Baptist College	Conway, Ark.
Mrs. C. T. Mills	Mills College	Mills College, Cal.
Sister Mary Bernardine	College of Notre Dame	San Jose, Cal.
Mrs. M. A. Lipscomb	Lucy Cobb Institute	Athens, Ga.
Chas. C. Cox, Ph. D	Southern Female College	College Park, Ga.
Rev. Homer Bush, A. M	Andrew Female College	Cuthbert, Ga.
Miss Mabel Head	Dalton Female College	Dalton, Ga.
A. A. Marshall	Monroe Female College	Forsyth, Ga.
H. J. Pearce and A. W. Van Hoose	Georgia Female Seminary	Gainesville, Ga.
Rufus W. Smith, A. M	Lagrange Female College	Lagrange, Ga.
Rev. G. A. Nunnally, D. D	Southern Female College	Do.
Rev. J. W. Roberts, D. D	Wesleyan Female College	Macon, Ga.
T. J. Simmons, A. M	Shorter College	Rome, Ga.
John E. Baker	Young Female College	Thomasville, Ga.
Rev. Joseph R. Harker, Ph. D	Illinois Woman's College	Jacksonville, Ill.
E. F. Bullard, A. M	Academy for Young Women	Do.
Rev. C. W. Leffingwell, D. D., rector	St. Mary's School	Knoxville, Ill.
Phebe T. Sutliff, A. M	Rockford College	Rockford, Ill.
Margaret L. Hill, A. M	College for Young Ladies	Oswego, Kans.
Rev. F. R. Millspaugh, D. D	College of the Sisters of Bethany	Topeka, Kans.
Rev. Benj. F. Cabell	Potter College	Bowling Green, Ky.
Rev. J. C. Ely, D. D	Caldwell College	Danville, Ky.
Rev. Edmund Harrison, A. M	Bethel Female College	Hopkinsville, Ky.
B. C. Hagerman, A. M	Hamilton Female College	Lexington, Ky.
H. B. McClellan, A. M	Sayre Female Institute	Do.
Rev. C. C. Fisher, A. M	Millersburg Female College	Millersburg, Ky.
Mrs. N. S. W. Vineyard	Jessamine Female Institute	Nicholasville, Ky.
A. C. Goodwin, Ph. D	Owensboro Female College	Owensboro, Ky.
A. G. Murphey, A. M	Logan Female College	Russellville, Ky.
William Shelton, LL. D	Stanford Female College	Stanford, Ky.
Rev. F. W. Lewis	Silliman Collegiate Institute	Clinton, La.
T. S. Sligh, A. M	Mansfield Female College	Mansfield, La.
S. A. Myers	Minden Female College	Minden, La.
Rev. H. S. Whitman, A. M	Westbrook Seminary	Deering, Me.
Henry E. Trefethen, A. M., acting	Maine Wesleyan Seminary and Female College.	Kents Hill, Me.
Mary Meletia of Notre Dame	Notre Dame of Maryland	Baltimore, Md.
Rev. John F. Goucher, D. D	Woman's College of Baltimore	Do.
J. H. Apple, A. M	Woman's College	Frederick, Md.
	Kee Mar College	Hagerstown, Md.
Rev. J. H. Turner, A. M	Maryland College for Young Ladies	Lutherville, Md.
C. C. Bragdon, A. M	Lasell Seminary for Young Women	Auburndale, Mass.
Miss Agnes Irwin, dean	Radcliffe College	Cambridge, Mass.

III.—College Presidents—Continued.

II.—*Colleges for women*—Continued.

Name of president.	University or college.	Address.
Rev. L. Clark Seelye, D. D., LL. D.	Smith College	Northampton, Mass.
Mary E. Woolley, A. M	Mount Holyoke College	South Hadley, Mass.
Miss Caroline Hazard	Wellesley College	Wellesley, Mass.
Virginia Southgate, B. S	Albert Lea College	Albert Lea, Minn.
B. G. Lowrey, A. M	Blue Mountain Female College	Blue Mountain, Miss.
Rev. J. W. Chambers, A. M	Whitworth Female College	Brookhaven, Miss.
Rev. George Wharton, D. D	Hillman College	Clinton, Miss.
Hon. A. A. Kincannon	Industrial Institute and College	Columbus, Miss.
J. A. Saunderson, prin	Central Mississippi Institute	French Camp, Miss.
L. T. Fitzhugh, A. M	Belhaven College for Young Ladies	Jackson, Miss.
C. H. Otken, LL. D	McComb Female Institute	McComb, Miss.
J. W. Beeson, A. M	East Mississippi Female College	Meridian, Miss.
Hon. James R. Preston, A. M	Stanton College for Young Ladies	Natchez, Miss.
A. S. Maddox	Union Female College	Oxford, Miss.
S. Decatur Lucas	Chickasaw Female College	Pontotoc, Miss.
Mrs. M. H. Meek	Port Gibson Female College	Port Gibson, Miss.
Mrs. Eva B. Wilkinson	Hamilton College	Water Valley, Miss.
Mrs. W. T. Moore	Christian College	Columbia, Mo.
Rev. S. F. Taylor, D. D	Stephens College	Do.
Rev. Hiram D. Groves	Howard Payne College	Fayette, Mo.
Rev. T. P. Walton	Synodical Female College	Fulton, Mo.
B. T. Blewett, LL. D	St. Louis Seminary	Jennings, Mo.
James A. Beauchamp, A. M	Baptist Female College	Lexington, Mo.
Rev. Z. M. Williams, A. M	Central Female College	Do.
C. M. Williams, A. M	Liberty Ladies' College	Liberty, Mo.
J. W. Million, A. M	Hardin College	Mexico, Mo.
Mrs. V. A. C. Stockard	Cottey College for Young Ladies	Nevada, Mo.
M. H. Reaser	Lindenwood College for Women	St. Charles, Mo.
F. T. Shultz, A. M	Bordentown Female College	Bordentown, N. J.
William E. Waters, Ph. D	Wells College	Aurora, N. Y.
Truman J. Backus, LL. D	Packer Collegiate Institute	Brooklyn, N. Y.
Rev. A. C. McKenzie, D. D	Elmira College	Elmira, N. Y.
	Barnard College	New York, N. Y.
Rev. J. M. Taylor, D. D., LL. D	Vassar College	Poughkeepsie, N. Y.
Archibald A. Jones, A. M	Asheville College for Young Women	Asheville, N. C.
Rev. C. B. King, A. M	Elizabeth College	Charlotte, N. C.
S. A. Wolff, A. M	Gaston College	Dallas, N. C.
Dred Peacock, A. M	Greensboro Female College	Greensboro, N. C.
S. P. Hatton, A. M	Claremont Female College	Hickory, N. C.
M. S. Davis, A. M	Louisburg Female College	Louisburg, N. C.
John C. Scarborough	Chowan Baptist Female Institute	Murfreesboro, N. C.
F. P. Hobgood, A. M	Oxford Female Seminary	Oxford, N. C.
Rev. John H. Clewell	Salem Female Academy and College	Salem, N. C.
Rev. L. D. Potter, D. D	Glendale College	Glendale, Ohio.
Rev. John H. Thomas, A. M	Oxford College	Oxford, Ohio.
Leila S. McKee, Ph. D	Western College	Do.
Miss Mary Evans, A. M	Lake Erie College and Seminary	Painesville, Ohio.
Rev. J. W. Knappenberger, A. M	Allentown College for Women	Allentown, Pa.
Rev. J. Max Hark, D. D	Moravian Seminary and College for Women.	Bethlehem, Pa.
M. Carey Thomas, Ph. D	Bryn Mawr College	Bryn Mawr, Pa.
Rev. Samuel A. Martin, D. D	Wilson College	Chambersburg, Pa.
E. E. Campbell, Ph. D	Irving Female College	Mechanicsburg, Pa.
Frances E. Bennett	Ogontz School	Ogontz School, Pa.
R. Jane De Vore, A. M	Pennsylvania College for Women	Pittsburg, Pa.
Rev. J. A. Riee, D. D	Columbia Female College	Columbia, S. C.
Robert P. Pell, A. B	Presbyterian College for Women	Do.
Rev. James Boyce	Due West Female College	Duewest, S. C.
Lee D. Lodge, Ph. D	Limestone College	Gaffney, S. C.
A. S. Townes	Greenville College for Women	Greenville, S. C.
Rev. M. M. Riley, D. D	Greenville Female College	Do.
B. F. Wilson	Converse College	Spartanburg, S. C.
Rev. B. G. Clifford, D. D., Ph. D	Clifford Seminary	Union, S. C.
Rev. S. Lander, A. M	Williamston Female College	Williamston, S. C.
Rev. S. N. Barker	Sullins College	Bristol, Tenn.
John R. Mack, A. M	Brownsville Female College	Brownsville, Tenn.
T. W. Crowder	Wesleyan Female College	Do.
Robert D. Smith, A. M	Columbia Athenæum	Columbia, Tenn.
T. E. Allen and J. H. Chiles	Tennessee Female College	Franklin, Tenn.
A. C. Bigger, B. S	Howard Female College	Gallatin, Tenn.
Rev. A. B. Jones, D. D., LL. D	Memphis Conference Female Institute	Jackson, Tenn.
Miss V. O. Wardlaw, A. M	Soule Female College	Murfreesboro, Tenn.
	Nashville College for Young Ladies	Nashville, Tenn.
J. D. Blanton	Ward Seminary	Do.
Leonard L. Vann, A. M	Martin Female College	Pulaski, Tenn.
Wm. M. Graybill, Ph. D	Synodical Female College	Rogersville, Tenn.
Charles Carlton	Carlton College	Bonham, Tex.
W. A. Wilson, A. M	Baylor Female College	Belton, Tex.
L. F. Smith, A. B	Chappell Hill Female College	Chappell Hill, Tex.
J. E. Harrison	San Antonio Female College	San Antonio, Tex.

III.—College Presidents—Continued.

II.—*Colleges for women*—Continued.

Name of president.	University or college.	Address.
A. Q. Nash, C. E.	Mary Nash College	Sherman, Tex.
Rev. W. M. Dyer, A. M	Martha Washington College	Abingdon, Va.
Miss Kate M. Hunt	Stonewall Jackson Institute	Do.
William H. Tharp, A. M	Southwest Virginia Institute	Bristol, Va.
Rev. L. H. Shuck, D. D	Albemarle College for Young Ladies	Charlottesville, Va.
Rev. C. F. James, D. D	Roanoke Female College	Danville, Va.
Chas. L. Cocke, A. M	Hollins Institute	Hollins, Va.
W. W. Smith, LL. D	Randolph-Macon Woman's College	Lynchburg, Va.
Rev. J. J. Scherer, A. M	Marion Female College	Marion, Va.
Arthur K. Davis, A. M	Southern Female College	Petersburg, Va.
Rev. James Nelson, D. D	Woman's College	Richmond, Va.
Miss M. P. Duvall	Virginia Female Institute	Staunton, Va.
A. M. Smith, A. M	Episcopal Female Institute	Winchester, Va.
Rev. J. P. Hyde, D. D., LL. D	Valley Female College	Do.
Mrs. H. L. Field	Parkersburg Seminary	Parkersburg, W. Va.
Miss Ellen C. Sabin, A. M	Milwaukee-Downer College	Milwaukee, Wis.

III.—*Schools of technology.*

Wm. Le Roy Broun, LL. D	Alabama Polytechnic Institute	Auburn, Ala.
Barton O. Aylesworth, LL. D	Colorado Agricultural College	Fort Collins, Colo.
Regis Chauvenet, A. M., B. S	State School of Mines	Golden, Colo.
George W. Flint, A. M	Connecticut Agricultural College	Storrs, Conn.
Lyman Hall	State School of Technology	Atlanta, Ga.
Rev. F. W. Gunsaulus, D. D	Armour Institute of Technology	Chicago, Ill.
	Purdue University	Lafayette, Ind.
Carl L. Mees, Ph. D	Rose Polytechnic Institute	Terre Haute, Ind.
W. M. Beardshear, LL. D	Iowa Agricultural College	Ames, Iowa.
Ernest R. Nichols, A. M., acting	Kansas Agricultural College	Manhattan, Kans.
Commander R. Wainwright, U. S. N., superintendent.	United States Naval Academy	Annapolis, Md.
H. H. Goodell, LL. D	Massachusetts Agricultural College	Amherst, Mass.
H. S. Pritchett, Ph. D	Massachusetts Institute of Technology	Boston, Mass.
T. C. Mendenhall, LL. D	Worcester Polytechnic Institute	Worcester, Mass.
J. L. Snyder, Ph. D	Michigan Agricultural College	Agricultural College, Mich.
F. W. McNair, B. S	Michigan College of Mines	Houghton, Mich.
	Mississippi Agricultural and Mechanical College.	Agricultural College, Miss.
W. H. Lanier, A. B	Alcorn Agricultural and Mechanical College.	Westside, Miss.
Rev. James Reid, A. B	Montana College of Agriculture and Mechanic Arts.	Bozeman, Mont.
C. S. Murkland, Ph. D	New Hampshire College of Agriculture and Mechanic Arts.	Durham, N. H.
Henry Morton, Ph. D., Sc. D., LL. D	Stevens Institute of Technology	Hoboken, N. J.
C. A. Colton, E. M., director	Newark Technical School	Newark, N. J.
Frederic W. Sanders, Ph. D	New Mexico College of Agriculture and Mechanic Arts.	Mesilla Park, N. Mex.
Fayette A. Jones, C. E., M. E	New Mexico School of Mines	Socorro, N. Mex.
Barton Cruikshank, M. E	Clarkson School of Technology	Potsdam, N. Y.
John H. Peck, LL. D	Rensselaer Polytechnic Institute	Troy, N. Y.
Col. A. L. Mills, U. S. A., supt	United States Military Academy	West Point, N. Y.
James B. Dudley	Agricultural and Mechanical College for the Colored Race.	Greensboro, N. C.
George T. Winston, LL. D	North Carolina College of Agriculture and Mechanic Arts.	West Raleigh, N. C.
J. H. Worst	North Dakota Agricultural College	Agricultural College, N. Dak.
Cady Staly, LL. D	Case School of Applied Science	Cleveland, Ohio.
Angelo C. Scott	Oklahoma Agricultural and Mechanical College.	Stillwater, Okla.
Thomas M. Gatch, Ph. D	Oregon Agricultural College	Corvallis, Oreg.
John H. Washburn, Ph. D	Rhode Island College of Agriculture and Mechanic Arts.	Kingston, R. I.
Asbury Coward, LL. D., supt	South Carolina Military Academy	Charleston, S. C.
Henry S. Hartzog, B. S	Clemson Agricultural College	Clemson College, S. C.
John W. Heston, Ph. D., LL. D	South Dakota Agricultural College	Brookings, S. Dak.
Robert L. Slagle, Ph. D	State School of Mines	Rapid City, S. Dak.
L. L. Foster	Agricultural and Mechanical College of Texas.	College Station, Tex.
Joseph M. Tanner	Agricultural College of Utah	Logan, Utah.
J. M. McBryde, LL. D	Virginia Agricultural and Mechanical College.	Blacksburg, Va.
Scott Shipp, LL. D., supt	Virginia Military Institute	Lexington, Va.
E. A. Bryan, A. M	Washington Agricultural College and School of Science.	Pullman, Wash.

IV.—Principals of Normal Schools.

Public normal schools.

Location.	Name of institution.	Principal.
ALABAMA.		
Florence	State Normal College	Marshall C. Wilson.
Jacksonville	do	Jacob Forney.
Livingston	Alabama Normal College for Girls	Miss Julia S. Tutwiler.
Montgomery	Montgomery Normal School	
Normal	State Colored Normal and Industrial School.	W. H. Councill.
Troy	State Normal College	Edwin R. Eldridge.
ARIZONA.		
Tempe	Territorial Normal School of Arizona	James McNaughton.
ARKANSAS.		
Pine Bluff	Branch Normal College	J. C. Corbin.
CALIFORNIA.		
Chico	California State Normal School	Carlton M. Ritter.
Los Angeles	State Normal School	Edward T. Pierce.
San Diego	do	Samuel T. Black.
San Jose	do	A. H. Randall.
COLORADO.		
Greeley	Colorado State Normal School	Z. X. Snyder.
CONNECTICUT.		
Bridgeport	Bridgeport Training School	Bcsse E. Howes.
New Britain	Normal Training School	Marcus White.
New Haven	State Normal Training School	Arthur B. Morrill.
Willimantic	do	George P. Phenix.
DELAWARE.		
Wilmington	Wollaston School	Clara Mendenhall.
DISTRICT OF COLUMBIA.		
Washington	Washington Normal School	Mrs. Idaliah G. Meyers.
Do	Washington Normal School, seventh and eighth divisions.	Lucy E. Moten.
FLORIDA.		
De Funiak Springs	Florida State Normal School	C. L. Hayes.
Tallahassee	Florida State Normal and Industrial College.	T. De S. Tucker.
GEORGIA.		
Athens	State Normal School	S. D. Bradwell.
Milledgeville	Georgia Normal and Industrial College	J. Harris Chappell.
IDAHO.		
Albion	Albion State Normal School	J. C. Black.
Lewiston	Lewiston State Normal School	Geo. E. Knepper.
ILLINOIS.		
Carbondale	Southern Illinois State Normal University.	D. B. Parkinson.
Chicago, Station O	Chicago Normal School	Francis W. Parker.
Normal	Illinois State Normal University	John W. Cook.
INDIANA.		
Indianapolis	Indianapolis Normal School	M. E. Nicholson.
Terre Haute	Indiana State Normal School	William W. Parsons.
IOWA.		
Boonesboro	Boone County Normal Institute	B. P. Holst.
Cedarfalls	Iowa State Normal School	Homer H. Seerley.
Dexter	Dexter Normal School	D. P. Repass.
Rockwell City	Calhoun County Normal School	D. K. Bond.
Woodbine	Woodbine Normal School	M. A. Reed.
KANSAS.		
Emporia	State Normal School	A. R. Taylor.

IV.—Principals of Normal Schools—Continued.

Public normal schools—Continued.

Location.	Name of institution.	Principal.
KENTUCKY.		
Corinth	Northern Kentucky Normal School	R. R. Hutchison.
Frankfort	State Normal School for Colored Persons.	James E. Givens.
Hazard	Hazard Normal School	Bailey P. Wootton.
Louisville	Louisville Normal School	W. J. McConathy.
Magnolia	Magnolia Normal College	G. P. Creal.
Temple Hill	Temple Hill Normal College	J. W. Davis.
Upton	Uptonville Institute	J. L. Pilkenton.
LOUISIANA.		
Natchitoches	Louisiana State Normal School	B. C. Caldwell.
New Orleans	New Orleans Normal School	Miss Marion Brown.
MAINE.		
Castine	Eastern State Normal School	Albert F. Richardson.
Farmington	Farmington State Normal School	George C. Purington.
Fort Kent	Madawaska Training School	Mary P. Nowland.
Gorham	State Normal School	W. J. Corthell.
MARYLAND.		
Baltimore	Maryland State Normal School	E. B. Prettyman.
Do	Baltimore Normal School for Education of Colored Teachers.	George Harrison.
MASSACHUSETTS.		
Boston	Boston Normal School	Larkin Dunton.
Do	Massachusetts Normal Art School	George H. Bartlett.
Bridgewater	State Normal School	Albert G. Boyden.
Cambridge	Cambridge Training School for Teachers.	Herbert H. Bates.
Fitchburg	State Normal School	John G. Thompson.
Framingham	do	Henry Whittemore.
Lowell	Training School for Teachers	Gertrude Edmund.
Salem	do	W. P. Beckwith.
Westfield	do	Charles S. Chapin.
Worcester	do	E. Harlow Russell.
MICHIGAN.		
Detroit	Detroit Normal Training School	Harriet M. Scott.
Mount Pleasant	Michigan Central Normal School	Charles McKenney.
Ypsilanti	Michigan State Normal School	Richard G. Boone.
MINNESOTA.		
Mankato	State Normal School	Chas. H. Cooper.
Moorhead	do	L. C. Lord.
St. Cloud	do	George R. Kleeberger.
St. Paul	Teachers' Training School	Miss B. M. Phelan.
Winona	State Normal School	J. F. Millspaugh.
MISSISSIPPI.		
Abbeville	Abbeville Normal School	M. E. Avitt.
Holly Springs	Holly Springs Normal Institute	W. A. Anderson.
Do	Mississippi State Normal School	E. D. Miller.
Paris	Paris Normal Institute	T. M. Anderson.
Sherman	Mississippi Normal Institute	D. H. Davis.
Troy	Mississippi Normal High School	H. D. Wilson.
Walnut Grove	Mississippi Central Normal School	John Rundle.
MISSOURI.		
Cape Girardeau	State Normal School	John S. McGhee.
Kirksville	State Normal School (first district)	W. D. Dobson.
St. Louis	Normal and High School	William J. S. Bryan.
Warrensburg	State Normal School (second district)	George H. Howe.
MONTANA.		
Dillon	Montana Normal School	D. E. Sanders.
NEBRASKA.		
Peru	Nebraska State Normal Training School.	J. A. Beattie.
NEW HAMPSHIRE.		
Plymouth	State Normal School	A. H. Campbell.

IV.—Principals of Normal Schools—Continued.

Public normal schools—Continued.

Location.	Name of institution.	Principal.
NEW JERSEY.		
Newark	Newark Normal and Training School	Joseph Clark.
Paterson	Paterson Normal Training School	Mary R. Doyle.
Trenton	New Jersey State Normal and Model Schools.	James M. Green.
NEW MEXICO.		
Silver City	Normal School of New Mexico	C. M. Light.
NEW YORK.		
Albany	New York State Normal College	Wm. J. Milne.
Brockport	State Normal and Training School	David E. Smith.
Brooklyn	Training School for Teachers	John Gallagher.
Buffalo	Buffalo Normal School	James M. Cassety.
Cortland	State Normal and Training School	Francis J. Cheney.
Fredonia	....do	F. B. Palmer.
Geneseo	Geneseo State Normal School	John M. Milne.
Jamaica	Normal and Training School	A. C. MacLachlan.
New Paltz	State Normal School	Frank S. Capen.
New York	Normal College of the City of New York.	Thomas Hunter.
Onconta	State Normal School	Percy I. Bugbee.
Oswego	Oswego State Normal and Training School.	Isaac B. Poucher.
Plattsburg	State Normal School	Geo. K. Hawkins.
Potsdam	State Normal and Training School	Thomas B. Stowell.
Syracuse	Syracuse High School, Normal Department.	Wm. K. Wickes.
NORTH CAROLINA.		
Elizabeth City	State Colored Normal School	P. W. Moore.
Fayetteville	....do	E. E. Smith.
Franklinton	Albion Academy and State Normal School.	Rev. J. A. Savage.
Goldsboro	State Normal School	P. W. Russel.
Greensboro	State Normal and Industrial School	Charles D. McIver.
Plymouth	Plymouth State Normal School	John W. McDonald
Salisbury	State Normal School	J. O. Crosby.
NORTH DAKOTA.		
Mayville	State Normal School	Joseph Carhart.
Valley City	....do	George A. McFarland.
OHIO.		
Cincinnati	Cincinnati Normal School	Mrs. Carrie N. Lathrop.
Cleveland	Cleveland Normal and Training School.	Miss L. W. Hughes.
Columbus	Columbus Normal School	Margaret W. Sutherland.
Dayton	Dayton Normal School	Grace A. Greene.
Geneva	Geneva Normal School	J. P. Treat.
Wadsworth	Wadsworth Normal School	Frank A. Day.
OKLAHOMA.		
Edmond	Territorial Normal School of Oklahoma.	Edmund H. Murdaugh.
OREGON.		
Ashland	Southern Oregon State Normal School.	W. T. Van Scoy.
Drain	Oregon State Normal School	E. H. Anderson.
Monmouth	State Normal School	P. L. Campbell.
Weston	....do	D. V. S. Reid.
PENNSYLVANIA.		
Bloomsburg	State Normal School and Literary Institute.	Judson P. Welsh.
California	Southwestern State Normal School	Theo. B. Noss.
Clarion	Clarion State Normal School	A. J. Davis.
East Stroudsburg	East Stroudsburg State Normal School.	George P. Bible.
Edinboro	State Normal School	J. R. Flickinger.
Indiana	Indiana Normal School of Pennsylvania.	D. J. Waller, jr.
Kutztown	Keystone State Normal School	Rev. George B. Haneher.
Lockhaven	Central State Normal School	James Eldon.
Mansfield	Mansfield State Normal School	S. H. Albro.
Millersville	First Pennsylvania State Normal School.	E. Oram Lyte.
Philadelphia	Philadelphia Normal School for Girls.	J. M. Willards.
Pittsburg	Pittsburg High School, Normal Department.	C. B. Wood.
Shippensburg	Cumberland Valley State Normal School.	G. M. D. Eckels.
Slippery Rock	Slippery Rock State Normal School	Albert E. Maltby.
West Chester	State Normal School	George M. Philips.

IV.—Principals of Normal Schools—Continued.

Public normal schools—Continued.

Location.	Name of institution.	Principal.
RHODE ISLAND.		
Providence	Rhode Island State Normal School	Fred Gowing.
SOUTH CAROLINA.		
Rockhill	Winthrop Normal College	D. B. Johnson.
SOUTH DAKOTA.		
Madison	State Normal School	W. H. H. Beadle.
Spearfish	do	F. L. Cook.
Springfield	do	J. S. Frazee.
TENNESSEE.		
Nashville	Peabody Normal School	N. H. Payne.
TEXAS.		
Detroit	Detroit Normal School	J. Ray.
Huntsville	Sam Houston Normal Institute	H. C. Pritchett.
Timpson	Timpson High School	J. B. Ramsey.
UTAH.		
Cedar City	Southern branch of the State Normal School.	Milton Bennion.
Salt Lake City	Utah State Normal School	Wm. M. Stewart.
VERMONT.		
Castleton	State Normal School	Abel E. Leavenworth.
Johnson	do	W. E. Ranger.
Randolph Center	do	Edward Conant.
VIRGINIA.		
Farmville	State Female Normal School	Robert Frazer.
Hampton	Hampton Normal and Agricultural Institute.	H. B. Frissell.
Petersburg	Virginia Normal and Collegiate Institute.	J. H. Johnston.
WASHINGTON.		
Cheney	State Normal School	W. B. Turner.
Ellensburg	do	W. E. Wilson.
WEST VIRGINIA.		
Athens	Concord State Normal School	George M. Ford.
Fairmont	Fairmont State Normal School	J. Walter Barnes.
Institute	West Virginia Colored Institute	J. McH. Jones.
Glenville	Glenville State Normal School	W. J. Halden.
Huntington	Marshall College	L. J. Crosby.
Shepherdstown	Shepherd College, State Normal School.	A. C. Kimler.
West Liberty	West Liberty State Normal School	W. B. Cutright.
WISCONSIN.		
Milwaukee	State Normal School	L. D. Harvey.
Oshkosh	do	R. H. Halsey.
Platteville	do	D. McGregor.
River Falls	River Falls State Normal School	W. J. Brier.
Stephens Point	State Normal School	Theron B. Pray.
West Superior	Superior State Normal School	J. C. McNeill.
Whitewater	State Normal School	Albert Salisbury.

Private normal schools.

ALABAMA.		
Huntsville	Central Alabama Academy	A. W. McKinney.
Scottsboro	Scottsboro College and Normal School.	Dr. J. W. Shoemaker.
Tuskegee	Tuskegee Normal and Industrial Institute.	B. T. Washington.
ARKANSAS.		
Arkadelphia	Shorter University	S. H. Jackson.
Belleville	Belleville Normal College	D. F. Montgomery.
Clarksville	Arkansas Cumberland College	J. A. Laughlin.
Little Rock	Arkansas Baptist College	J. A. Booker.
Pea Ridge	Pea Ridge Normal College	B. H. Caldwell.
Southland	Southland College and Normal Institute.	D. G. Phillips.
Sulphur Rock	Sulphur Rock College	J. W. Decker.
Wilmar	Drew Normal Institute	J. L. Spence.
Woodberry	Woodberry Normal Institute	Andrew Cooper.

IV.—Principals of Normal Schools—Continued.

Private normal schools—Continued.

Location.	Name of institution.	Principal.
CALIFORNIA.		
Oakland	Gilson's Normal and Special Training School.	J. C. Gilson.
COLORADO.		
Denver	Denver Normal and Preparatory School.	Fred. Dick.
DISTRICT OF COLUMBIA.		
Washington	Kindergarten Normal Training School.	Mrs. Louise Pollock.
Do	Woman's League Kindergarten Training School.	Mrs. Anna E. Murray.
FLORIDA.		
Jasper	Jasper Normal Institute	Wm. A. Cate.
Liveoak	Florida Institute	Rev. Geo. P. McKinney.
Orange Park	Orange Park Normal and Manual Training School.	Ernest R. Latham.
Whitesprings	Florida Normal College	Thomas B. Kirk.
GEORGIA.		
Atlanta	Spelman Seminary	Miss Harriet E. Giles.
Demorest	Demorest Normal School	J. S. Jennings.
Greensboro.	Thomas Stocks Institute	N. H. Ballard.
Macon	Ballard Normal School	George C. Burrage.
Monroe	Johnston Institute	John Gibson.
Savannah	Beach Institute	Julia B. Ford.
Thomasville	Allen Normal and Industrial School	Amelia Merriam.
ILLINOIS.		
Addison	German Evangelical Lutheran Teachers' Seminary.	E. A. W. Krauss.
Bushnell	Western Normal College	W. W. Earnest.
Dixon	Northern Illinois Normal School	J. B. Dille.
Do	Steinmann Institute	Charles A. Steinmann.
Galesburg	Galesburg Kindergarten Normal School	M. Evelyn Strong.
Hoopeston	Greer Normal College	J. C. McClure.
Macomb	Western Illinois Normal School and Business Institute.	I. F. Meyer.
Mount Morris	Mount Morris College	J. G. Royer.
Onarga	Grand Prairie Seminary	Fred C. Demorest.
Oregon	Wells School for Teachers.	E. L. Wells.
Rushville	Rushville Normal and Business College.	Maxwell Kennedy.
INDIANA.		
Anderson	Anderson Normal University	William W. Croan.
Angola	Tri-State Normal School	L. M. Sniff.
Borden	Borden Institute	H. A. Buerk.
Corydon	Ohio Valley Normal School	E. S. Hallett.
Covington	Indiana Normal College	Olive E. Coffeen.
Danville	Central Normal College and Commercial Institute.	J. A. Joseph.
Elkhart	Elkhart Normal School	J. Ellen Haynes.
Fairmount	Fairmount Academy and Normal School.	Elam Henderson.
Indianapolis	Indiana Kindergarten and Primary Normal Training School.	Eliza A. Blaker.
Marion	Marion Normal College	C. W. Boucher.
Mitchell	Southern Indiana Normal College	D. B. Gilbert.
Portland	Portland Normal, Music, and Law School.	L. M. Holmes.
Valparaiso	Northern Indiana Normal School	H. B. Brown.
IOWA.		
Afton	Afton Normal and Business College	W. O. Mullin.
Algona	Northern Iowa Normal and Commercial School.	A. J. Lilly.
Bloomfield	Southern Iowa Normal, Scientific, and Business Institute.	A. A. Williams.
Carroll	Carroll Normal and Business College	A. E. Whitten.
Decorah	Valder Normal School	C. H. Valder.
Denison	Denison Normal School	W. C. Van Ness.
Des Moines	Highland Park Normal College	C. C. Rearick.
Glidden	National Normal School and Business College.	E. L. Essley.
Humboldt	Humboldt College	J. P. Peterson.
Kossuth	Kossuth Academy	Rev. J. McGaughey.
Lemars	Lemars Normal College	R. E. Hatton.

IV.—Principals of Normal Schools—Continued.

Private normal schools—Continued.

Location.	Name of institution.	Principal.
IOWA—continued.		
Mount Pleasant	Howe's Academy and Teachers' Training School.	S. C. Howe.
Newton	Newton Normal College	G. W. Wormley.
Nora Springs	Nora Springs Seminary	H. A. Dwelle.
Ottumwa	Ottumwa Normal School	Martha A. Peck.
Perry	Perry Normal School	Will M. Tarr.
Shenandoah	Western Normal College, Shenandoah Commercial Institute and Musical Conservatory.	J. M. Hussey.
Vinton	Tilford Academy	T. F. Tobin.
Waukon	Waukon Business College and Normal School.	L. Eells.
KANSAS.		
Conway Springs	Normal and Business College	S. D. Crane.
Great Bend	Central Normal College	H. F. Harris.
Marysville	Modern Normal College	J. G. Ellenbecker.
McPherson	McPherson College, Normal Dept	C. E. Arnold.
Nickerson	Nickerson Normal College	Ed. B. Smith.
Salina	Salina Normal University	Charles Swisher.
Winfield	Southwest Kansas College, Normal Department.	Chester A. Place.
KENTUCKY.		
Blaine	Blaine Normal School	G. Milton Elam.
Bowling Green	Bowling Green Business College and Southern Normal School.	H. H. Cherry.
Corinth	Northern Kentucky Normal School	Marion Pfanstiel.
Fulton	Fulton Normal and Business College	G. R. Haley.
Hardinsburg	Breckinridge Normal College	D. S. Roberts, jr.
Irvine	Irvine Training School	Thos. P. Throop.
Lexington	Chandler Normal School	Fannie J. Webster.
Madisonville	Western Kentucky Normal School	H. Evelyn Brooks.
Morehead	Morehead Normal School	F. C. Button.
Waddy	Central Normal College	R. A. Burton.
MAINE.		
Hampden	Hampden Academy	George C. Webber.
Lee	Lee Normal Academy	James D. Murphy.
Springfield	Springfield Normal School	Flora A. Mason.
MARYLAND.		
Ammendale	Ammendale Normal Institute	Brother Christian.
Buckeystown	Buckeystown Normal Training School.	F. R. Neighbours.
MASSACHUSETTS.		
Boston	Kindergarten Training School	Lucy Wheelock.
Waltham	Notre Dame Training School	Sister Georgiana.
Worcester	Kindergarten Normal Class	Anna C. Rust.
MICHIGAN.		
Fenton	Fenton Normal School and Commercial College.	W. A. Stevenson.
Owosso	Oakside School	Mrs. Josephine M. Gould.
Petoskey	Graves Normal Academy	M. O. Graves.
MINNESOTA.		
Madison	Normal School of the United Norwegian Lutheran Church.	O. Lokensgard.
New Ulm	Dr. Martin Luther College	John Schaller.
MISSISSIPPI.		
Blue Springs	Blue Springs Normal College	Frank Snipes.
Burgess	Burgess Normal Institute	Cuthbert Spencer.
Houston	Mississippi Normal School	H. B. Abernethy.
Iuka	Iuka Normal College	H. A. Dean.
Lake Como	Lake Como Normal School	Homer M. Knowles.
Louisville	Louisville Normal School	J. A. Hall.
Plattsburg	Winston Normal School	J. A. Hall.
Poplar Springs	Poplar Springs Normal College	John D. Mitchell.
Tougaloo	Normal Department Tougaloo University.	Frank G. Woodworth.
Yale	Oakland Normal Institute	G. A. and J. T. Holleys.
Walnutgrove	Mississippi Central Normal School	Jno. R. Tally.

IV.—Principals of Normal Schools—Continued.

Private normal schools—Continued.

Location.	Name of institution.	Principal.
MISSOURI.		
Chillicothe	Chillicothe Normal Business and Shorthand College.	Allen Moore.
College Mound	McGee College	E. E. Taylor.
Eldorado Springs	Eldorado Normal and Business College.	W. H. Miller.
Gainesville	Gainesville Normal School	A. P. Selsor.
Licking	Licking College	Gilbert Lay.
Mill Spring	Hales College	W. H. Hale.
Pleasant Hope	Pleasant Hope Normal Academy	J. F. Martin.
Stanberry	Stanberry Normal School	John E. Fesler.
Thornfield	Thornfield Normal Institute	J. E. Smith.
Weaubleau	Weaubleau Christian College	J. Whitaker.
NEBRASKA.		
Fremont	Fremont Normal School	W. H. Clemmons.
Normal	Lincoln Normal University	M. E. Phillips.
Santee Agency	Santee Normal Training School	Alfred L. Riggs.
Wayne	Nebraska Normal College	J. M. Pile.
NEW YORK.		
New York	Teachers' College	Seth Low.
NORTH CAROLINA.		
Asheville	Normal and Collegiate Institute	Rev. Thos. Lawrence.
Beaufort	Washburn Seminary	F. S. Hitchcock.
Kings Mountain	Lincoln Academy	Lilian S. Cathcart.
Lumberton	Whitin Normal School	D. P. Allen.
Poes	Buies Creek Academy	Rev. J. A. Campbell.
Raleigh	St. Augustine's School	Rev. A. B. Hunter.
Traphill	Fairview College	Edwin J. Johnson.
Wilmington	Gregory Normal Institute	Geo. A. Woodard.
Winston	Waters Normal Institute	C. S. Brown.
NORTH DAKOTA.		
Grand Forks	Northwestern Normal College	John J. Swengel.
OHIO.		
Ada	Ohio Normal University	H. S. Lehr.
Canfield	Northeastern Ohio Normal College	Morris J. Hole.
Dayton	St. Mary's Academy	Brother Michael.
Defiance	Defiance College	John R. H. Latchaw.
Ewington	Ewington Academy	F. F. Vale.
Fayette	Fayette Normal University	J. E. Dodds.
Lebanon	National Normal University	J. W. Withers.
Middlepoint	Western Ohio Normal School	P. S. Morgan.
New Philadelphia	John P. Kuhn's Normal School	John P. Kuhn.
Piketon	Southern Ohio School of Pedagogy	Levi B. Moore.
Tremont City	Western Normal University	B. L. Barr.
Woodville	Teachers' Seminary	Theo. Mees.
PENNSYLVANIA.		
Ebensburg	Ebensburg Normal Institute	H. T. Jones.
Huntingdon	Juniata College	M. G. Brumbaugh.
Muncy	Lycoming County Normal School	Call P. Bastian.
Pittsburg	Curry College	G. H. Kane.
SOUTH CAROLINA.		
Aiken	Schofield Normal and Industrial School	Martha Schofield.
Charleston	Avery Normal Institute	Morrison A. Holmes.
Do	Wallingford Academy	Rev. David Brown.
Frogmore	Penn Normal and Industrial School	Miss Ellen Murray.
Greenwood	Brewer Normal School	Rev. J. M. Robinson.
SOUTH DAKOTA.		
Sioux Falls	Lutheran Normal School	Rev. A. Mikkelsen.
TENNESSEE.		
Birchwood	Rutherford Graded School	R. T. Rutherford.
Chattanooga	Chattanooga Normal University	H. M. Evans.
Dickson	Dickson Normal School	Wade and Loggins.
Edgewood	Edgewood Normal School	H. D. Fetzer.

IV.—Principals of Normal Schools—Continued.

Private normal schools—Continued.

Location.	Name of institution.	Principal.
TENNESSEE—continued.		
Fountain City	Holbrook Normal College	Jas. C. Blassingame.
Greenbrier	Central Tennessee Normal and Commercial School.	N. J. Pritchard.
Holladay	Holladay Independent Normal School.	A. A. Lindsey.
Hornbeck	West Tennessee Normal College	W. L. Willingham.
Huntingdon	Southern Normal University	J. A. Baber.
Jonesboro	Warner Institute	H. L. Peterson.
Maryville	Freedman's Normal Institute	L. H. Garner.
Memphis	Le Moyne Normal Institute	A. J. Steele.
Morristown	Morristown Normal Academy	Judson S. Hill.
Orlinda	Orlinda Normal College	Wm. McNeeley.
Sparta	Dibrell Normal Institute	W. T. Garrett.
TEXAS.		
Brenham	Blinn Memorial College	C. Urbantke.
Castroville	Divine Providence Academy	Mother M. Florence.
Commerce	East Texas Normal College	W. L. Mayo.
Crockett	Mary Allen Seminary	Rev. John B. Smith.
Hearne	Hearne Academy, Normal, and Industrial School.	John F. Anderson.
Whitesboro	Whitesboro Normal College	C. L. and N. Adair.
UTAH.		
Provo City	Brigham Young Academy	Benj. Cluff.
VIRGINIA.		
Lawrenceville	St. Paul Normal and Industrial School.	Rev. James S. Russell.
Norfolk	Norfolk Mission College	W. M. Kiraham.
Reliance	Shenandoah Normal College	J. S. Gruver.
Richmond	Hartshorn Memorial College	Lyman B. Tefft.
Rocky Mount	Piedmont Normal College	J. P. Matthews.
Scottsburg	Scottsburg Normal College	S. H. Thompson.
Stuart	Stuart Normal College	I. A. Briggs.
Willis	The Mountain Normal School	J. H. Rutrough.
WEST VIRGINIA.		
Harpers Ferry	Storer College	Ernest Earle Osgood.
Summersville	Summersville Normal School	W. G. Brown.
WISCONSIN.		
Milwaukee	National German-American Teachers' Seminary.	Emil Dapprich.
St. Francis	Catholic Normal School of the Holy Family and Pio Nono College.	Rev. M. J. Lochemes.

CHAPTER XXV.

APPLIED (OR ECONOMIC) GEOGRAPHY.

INTRODUCTION.

The enormous expansion of American, English, and German international trade; the acquisition of vast transoceanic possessions, especially on the part of Great Britain; the sleepless instinct of gain that opens up markets in the most remote countries for the products of labor in farm and factory, quickened by ever increasing speed through the aid of mechanical power; the annihilation of distance by contrivances never dreamed of a few generations ago, all these factors have combined to change both matter and methods of the study of geography in the schools, and to give this study a new character.

Time was when a mere description of the earth's surface, and memorizing of names of States, cities, mountains, lakes, and rivers constituted the sum total of what the child of the elementary school derived from the study of geography. In secondary schools the study was rarely more than a mere foil to history.

Then followed the wonderful development of the natural sciences during the middle of the nineteenth century, which gave a new impetus to geography. It became the common focus of many of the natural sciences, and under the name of "nature study" the subject of geography almost lost its identity, at least its former vassalage to history changed to servitude to the new trend of thought. Physical geography, or rather topography, was considered the only part of geography worthy of study, and to some extent it is so still.

But recent historical events have called for a change louder than the wise counsel of farseeing men, who had from time to time urged the advisability of emphasizing the human element more than was done. To-day it is made clear to us that geography deserves to be more than a handmaid of history on the one hand, or a mere drudge in the service of nature study on the other hand. It demands a place and dignity of its own, combining the objects of the two methods, the historical and the scientific, and besides, offering to the student a useful agency in bringing him in contact with commercial elements. Advocates in Europe and America eloquently press the claims of geography to a separate and independent position in the curricula of schools of every kind. But among the educational institutions which call for a new departure in the teaching of geography, the commercial and other technical schools in Europe are the most insistent, as will be seen from a report of Prof. A. J. Herbertson, of Edinburgh, Scotland, reprinted in this chapter.

Before the paper of this eminent authority is presented, it seems proper to show that in the United States the necessity of a change has also been foreseen.

OPINIONS OF EDUCATORS IN THE UNITED STATES.

The three special reports issued by authority of the National Educational Association: The report of the committee of ten on secondary school studies, dated 1893; the report of the committee of fifteen on elementary studies, dated 1895; and the report

of the committee of twelve on rural schools, dated 1897, may be quoted as clearly setting forth the attitude of teachers in this country on the subject. Of course, it is well understood that there have been isolated expressions from time to time pointing out the faulty methods in teaching geography, but the general awakening to the need of a change in the character and aims of that study is of rather recent occurrence. While as yet few chairs for the study of geography have been established in higher institutions of learning in this country and in England, the universities, and the polytechnic and commercial schools of college and university rank in France, Germany, Austria, and Switzerland have fostered the study most assiduously, so that when a new departure for the study of geography was necessitated by historical events and the awakened commercial spirit of the times, German and French scholars aided the movement generously.[1] In continental Europe the commercial schools have special atlases differing from those of other schools in paying particular attention to facts of commercial importance.

The committee on secondary school studies, mentioned before, discussed geography in a subcommittee, the report of which contains the following statement regarding the order of treatment based on the students' mental processes. It will be seen that this document emphasizes chiefly physical geography.

The conference offer, by way of suggestion, the following scheme. The appended remarks bear in part upon the educational philosophy entertained, in part upon the purpose of the work, and part upon the methods of execution. Reduced to a sentence the scheme is, first, see; next, reproduce; then study the productions of others; and, meanwhile, ponder and reason on all.

1. *Observational geography.*—In the judgment of the conference, observation should go before all other forms of geographical study and prepare the way for them; its object being (1) to develop the power and habit of geographic observation, (2) to give the pupils true and vivid basal ideas, and (3) to arouse a spirit of inquiry and a thirst for geographical knowledge. This work of observation should begin with those features that lie immediately about the pupils and so fall easily within the reach of their direct study and ready comprehension. In rural districts, the natural features of the surface will obviously form a large part of the study; while in cities, the artificial features must largely take the place of these. In the one instance, natural geography, as seen in the forms of the land, the hills, valleys, plains, meadows, divides, streams, lakes, etc., will predominate; while in the other artificial or humanistic geography will receive leading attention, as streets, railways, wharves, harbors, parks, plats, wards, etc.; but something of both these groups of subjects may be found and utilized in both localities. Neither should be neglected, for the pupils need not only to acquire clear ideas of the things by which they are chiefly surrounded but type ideas of the things which characterize other localities and of which they need to form correct ideas without being able to see them. Observation, however, should not be confined simply to the passive fixed features by which pupils are surrounded. They should observe the agencies that produce surface changes, such as winds, rains, floods, thawing, freezing, cultivation, etc. The temporary streams that follow heavy rains represent on a small scale many of the natural processes by which surface features are produced. From these immediate agencies, the observations should extend to the phenomena of the weather and the climate, such as temperature, winds, clouds, seasons, etc. As a step toward the understanding of mathematical geography, so called, the children should be led to observe the shifting of the sun north and south with the seasons and to measure the amount of this by the length of shadows at noonday in the different months of the year. They should compare these by means of a record kept for the purpose. In like manner, they should observe the movements of the stars and other heavenly bodies. As a step toward the study of the distribution of plants and animals and an insight into their dependence upon temperature, soil, food, etc., the pupils should be encouraged to observe the differences of plants on uplands, lowlands, marshes, etc., and upon sandy, clayey, gravelly, or stony ground, and to note the habitual dispersal of animals and insects in the neighborhood, and also their relations to each other, as in forming or frequenting forests, prairies, meadows, etc. As a step toward the study of the human elements in geography, observations should be made upon the population and its distribution; upon home occupations and productions; upon local political boundaries, as

[1] See also Chapter XXX of the Annual Report of the Commissioner of Education for 1896-97.

wards, school districts, city or town limits, etc.; and upon the location of cities, villages, railways, canals, etc. Thus, by a little ingenuity and industry, a large part of the features that make up the substance of geography in the large sense may be found illustrated close at home, and, if suitably studied, the basis may be laid for clear conceptions of those features which lie beyond the range of the child's observation.

Observation should not only begin the work in geography but should continue throughout the entire course and beyond. If scholars are not educated so as to continually observe geographic features and note their significance whenever they are brought in contact with them, whether during school days or afterwards, the school work fails of its most important possibilities. The pupils' first observational work is necessarily of the simpler and more superficial kind. As knowledge and insight increase, they should see more and more of the geographic phenomena that come before them and see deeper and deeper into their significance and receive increasing pleasure and profit from them. To this end, every opportunity for observational work in geography should be eagerly embraced. Excursions for the special purpose should be made as frequently as practicable, formally or informally, in school hours and out of school hours, by classes and by individuals. Advantage should be taken of incidental excursions in which the class or any of its members participate. The little trips and longer travels of members of the class should be taken advantage of. Late in the course, special studies of certain geographic features may be taken up with success and profit.

2. *Representative geography.*—Immediately after the making of observations should come their reproduction in the form of descriptions, sketches, maps, models, etc. The instruction of the teacher falls far short of its highest efficiency if the early work is merely observational and receptive. The great end of education is to create productive ability. One important form of this is representative production. Besides having value in itself, the description of features that have been seen and their representation by sketches, maps, or models reacts upon the observational work and induces a clearness, sharpness, and definiteness that it would not otherwise be likely to take. Not only this, but it leads the scholars to realize what maps, descriptions, etc., really mean. By this means pupils are lead up naturally to an ability to read with vividness, ease, and full understanding the maps and descriptions which constitute the medium of the larger part of their later studies, and such ability to read is of supreme importance in all subsequent work.

3. *Derivative or descriptive geography.*—When pupils have gained true and vivid basal ideas by observation and have by reproducing these acquired a realistic sense of the meaning of maps and an ability to read them in the full and proper sense of the term, they are prepared to pass on to a formal study of descriptive geography. In this the observational and representative work of others than themselves is made the basis of study. The pupils are not now studying the earth's surface, but "a description of the earth's surface." The work is not direct and immediate, but derivative and secondary. The pupils can not carry their own observations over more than a very small fraction of the earth's surface, and their work upon even this small portion must in the nature of the case be very imperfect. Their great dependence must therefore be upon the work of others, the work of geographical experts, and hence descriptive geography must embrace much the largest portion of their attention. The common mistake is that it embraces too nearly all of it, and the observational and reproductive efforts which are necessary to give the study of descriptions its greatest serviceability are neglected. These should be continued throughout the course running parallel with the descriptive study and supplementing and vivifying it.

4. *Rational geography.*—It has already been urged that the pupils should be induced to observe changes and processes as well as the simple passive facts of geography, and that there should thereby be laid the foundation for an understanding of the origin, the development, and the future history of geographic features. This is the introduction of rational geography as distinguished from the mere noting and memorizing of facts. This phase of the subject, which leads the pupils into the reason of things, should be assiduously cultivated, for it is the soul of the science. It should, however, be carefully adapted to the capabilities of the pupils, particularly in the earlier stages of the study. They should not be forced beyond their capacity to comprehend the nature of the agencies that have rendered geography what it is. On the other hand, there is an equal danger of underestimating the capacities of pupils to see into the reasons for natural operations. It is as dangerous to allow their capacities to lie undeveloped as it is to overload them with reasonings they can not understand and to force them to carry these in a mere verbal form by an effort of memory. The reasonings should be such as they can follow understandingly if not work out themselves. If they merely commit them to memory they

are as dead as other things simply memorized and lose entirely the rational element. It may not be wholly without value in some cases to give to children a statement of the causes of phenomena even though they are unable to understand the methods of their operation, but it should be clearly understood that this is not teaching the scholars to reason concerning phenomena, or even to follow reasonings concerning phenomena, but merely to memorize the reasons of phenomena.

It is not recommended that rational geography be dissociated from observational and descriptive geography, but rather, on the contrary, that it be intimately connected with these and that it be introduced so as to give them life and significance. To do this skill and discretion must be used respecting the way in which the rational element is introduced and the extent to which it is carried.

It will be noticed that the committee proposing the foregoing mode of treatment does not lay the chief stress on the political, ethnographical, and commercial features, but mainly on physical geography as the groundwork of the study. President Charles W. Eliot, the chairman of the committee of ten, thus concludes his comments upon the report of the subcommittee:

Their conception of physiography is a very comprehensive one. In short, they recommend a study of physical geography which would embrace in its scope the elements of half a dozen natural sciences, and would bind together in one sheaf the various gleanings which the pupils would have gathered from widely separated fields. There can be no doubt that the study would be interesting, informing, and developing, or that it would be difficult and in every sense substantial.

The committee of fifteen on elementary studies, appointed by the same association in 1894, and reporting in 1895, evidently viewed the subject from a different standpoint as will be seen from the following quotation of the report on correlation of studies:

Geography has preserved the comprehensiveness of meaning [it had in the Middle Ages] as a branch of the study in the elementary schools down to the present day. After arithmetic, which treats of the abstract or general conditions of material existence, comes geography with a practical study of man's material habitat and its relations to him. It is not a simple science by itself, like botany or geology or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoology, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature your committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is remote and to be studied for its own sake. It is, therefore, a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural differences of climate and lands and waters and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is, therefore, the first central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter process of civilization, which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the rain distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centers, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil, and general configuration of land

masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of geographical difference quite early in the course of study. Setting out from the idea of the use made of the earth by civilization, the pupil in the fifth and sixth years of his schooling (at the age of eleven or twelve) may extend his inquiries quite profitably as far as the physical explanations of landscapes and climates. In the seventh and eighth years of school much more may be done in this direction. But it is believed that the distinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on the opposite side of the globe is followed with more interest in this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization and their natural advantages for contributing to the world market, is of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era in which public opinion is organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people; they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power in tracing back toward unity the various series of causes. What educative value there is in geology, meteorology, zoology, ethnology, economics, history, and politics is to be found in the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your committee is of the opinion that there has been a vast improvement in the methods of instruction in this branch in recent years, due in large measure to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds, and straits around the world. He enlivened this to some extent by brief mention of the curiosities and oddities in the way of cataracts, water gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations, and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map drawing. The study of watersheds and commercial routes, of industrial productions and centers of manufacture and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter process of industry and commerce by which each difference is rendered of use to the whole world and each locality made a participator in the productions of all.

Prof. Geo. P. Brown, of Bloomington, Ill., commenting on this utterance, makes the following remarks, which clearly set forth the distinction between the two former methods of treatment of the subject:

The doctrine of this section upon the educative value of geography and its relation to human life will be accepted by most teachers. The elementary school must study the earth as the home of man. This gives emphasis to the industrial and commercial features of the study. The teachings of the report are in substantial accord with those of the Herbartians. We study physical geography that we may know better our fellow-men and our relations to them. The relation of this branch to history on the one side and to science on the other is a notable example of that idea of correlation which would teach each subject in the light of the knowledge of all others to which it is naturally related. The social order combines geography, history, natural science, the industries, and the characteristics of the people into a very close unity. The Herbartians and all good teachers demand that this unity shall be recognized in the school. The demands that some are making to have the emphasis placed upon the nature element rather than upon the human element are not sanctioned by this report. Geography is in part a natural-science study and in part a sociological study.

Sociology and nature are so intimately related in it that much of the latter must be known in order to understand the former. The time has certainly come for expunging much of the "sailor geography" from our course of instruction.

The report of the committee of twelve on rural schools also comments on the study of geography as follows:

The committee of fifteen has already advanced the opinion that the industrial and commercial idea is the central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, productions, races of men, religion, political status, and occupation of the inhabitants, and it explains how these differences have arisen in some measure through cosmic and geological influences. It should be the teacher's object to make the pupil understand, just as early as his growing capacity admits, the peculiarities of his habitat, leading him to study the land and water formations in his neighborhood, and giving him power to recognize in the visible landscape about him the invisible forces that worked in the past and still are at work in the present, molding these shapes and forms. On the basis of this knowledge of the elements of difference produced by nature in soil, climate, and configuration of the landscape, he should explain the grounds and reasons for the counter process of civilization which struggles to overcome these differences by bridging the rivers and tunneling the mountains, by using steamboat and railroad so as to unite each particular habitat with the rest of the world. He should see how man adapts to his needs the climate of each place by creating for himself a comfortable temperature, using for this purpose clothing and shelter, as well as fuels of wood and coal or derived from oils and gases to protect from cold; and, on the other hand, utilizing ice or power fans, and creating easy access to summer dwellings on the heights of mountains or at the seashore to mitigate the heat. He turns the soil into a laboratory, correcting its lacks and deficiencies by adding what is necessary to produce the crop which he desires. He naturalizes the useful plants and animals of all climes in his own habitat. It is evident that the details of the process by which differences of soil, climate, and production arise, important as these are, should not be allowed to occupy so much of the pupil's time that he neglects to study the counter process of industry and commerce by which man unites all parts of the earth to his habitat, and progressively overcomes the obstacles to civilization by making climate and soil to suit himself wherever he wishes.

To restate this important point in a word, it is true that the deeper inquiry into the process of continent formation, the physical struggle between the process of the upheaving or upbuilding of continents, and that of their obliteration by air and water; the explanation of the mountains, valleys and plains, islands, volcanic action, the winds, the rain distribution, is indispensable to a comprehension of the physical environment. But the study of the cities, their location, the purposes they serve as collecting, manufacturing, and distributing centers, leads most directly to the immediate purpose of geography in the elementary school, for it is the study of that civilization in which the pupil lives and moves and has his being.

Keeping this human standpoint in view all the time as a permanent interest, the inquiry into causes and conditions should proceed concentrically from the pupil's use of food and clothing to the sources of the raw materials, the methods of their production, and the climatic, geologic, and other reasons that explain their location and their growth. It is important in this as in all matters of school instruction to avoid one- idedness. Although the human factor should receive the most emphasis, special care should be exercised lest the nature factor should be neglected.

A very instructive essay on the subject was recently submitted to the Manchester Geographical Society, and published in its journal. The author is Dr. A. J. Herbertson, lecturer on industrial and commercial geography, Heriot-Watts College, Edinburgh, Scotland. The following is the paper:

The Position of Economic Geography in Education.

The movement for improved commercial education is part of a great change which, during the present century, has profoundly modified, in a greater or less degree, almost every civilized nation of the world. The nineteenth century has been marked by an extraordinary development of commercialism, an unprecedented acceleration of production, an enormous development of facilities of transport, and, consequently, of distribution, the constant opening of new markets, and the rapid exploitation of new lands. The consequent increase of population has led to the keenest competition both in production and distribution, and to a growing sense of the importance of the scientific study of both. Attention was at first chiefly paid to the scientific study

of production, or technical education, and is now being directed to the organization of a similar scientific study of distribution, or commercial education. To no country is this of more importance than our own. At the beginning of the present century Britain possessed a variety of advantages, many of them accidental and temporary, which appeared to ensure to it the commercial supremacy of the world. It was then impossible to foresee the rapid acceleration of mechanical invention and material progress which has done so much to equalize the nations of the world in the struggle for existence. At the beginning of the twentieth century we are starting little, if at all, ahead of our competitors, and this is the more serious, inasmuch as we have all been brought up to believe in the commercial superiority of Britain as part of the world's foreordained and unchanging order. Fortunately it is now becoming recognized that the day of lucky accidents is practically over, and that the time has come to organize commercial progress. Our competitors know this at least as well as ourselves, and have recognized, on the whole, perhaps earlier than we, that the successful merchant or trader requires, no less than the teacher or doctor, a strictly professional training. It is not, of course, denied that life supplies an empirical training by rough methods of its own. The battle between scientific and empirical methods has already been hotly fought on the question of the training of teachers, and it is not necessary here to recapitulate the arguments. It is now generally agreed that the empirical method is long, laborious, and wasteful. This most people will be willing to admit in the case of commercial education also, and the problem is therefore narrowed to that of suggesting, so far as our present experience admits, of various practical steps which should, and could, be taken at the present time.

ECONOMIC GEOGRAPHY IN SCHOOLS.

The object of school is not to train the young for special professions, but to educate them—that is, so to draw out the whole of their latent faculties, not forgetting the sense training, that at the end of the school years they are well qualified to begin, and to profit by, a more specialized professional training. The great task is not to impart information about isolated branches of knowledge, but to help pupils to realize that they are dealing with the actual problems of a living world, and that their success in any department of life will depend on their understanding of the problems it presents and their solution of them. Teachers protest against any further subdivision of subjects as detrimental to the true educational well-being of their pupils, and rightly maintain that too early specialization merely results in leaving the pupil stultified—neither well educated, nor even well instructed. It can not be too clearly understood that in the matter of geographical education we are entirely with them. Nothing could be more mischievous, or more useless, than premature specialization in certain aspects of geography, which can only be taken with advantage after a thorough and sound general education. The best service the school, whether primary or secondary, can be asked to render to the cause of commercial education is to improve and widen its general geographical teaching, laying stress on principles, on relations of cause and effect, on the influence exercised by geographical conditions on all the activities of man, and therefore, incidentally on his commercial and economic ones, in which many lessons will also be suggested by the events of the day. If this were done, the task of our various commercial institutions, at a later stage, would be a comparatively easy one, and it is precisely the absence of this preliminary geographical training which renders it so difficult for the specialist teacher of economic and commercial geography to do any but the most elementary work with his pupils.

The writer's experience, both as a teacher and as an examiner correcting papers from all parts of the United Kingdom is, that while there has been progress in the methods of geographic teaching in recent years, much remains to be done; that too little attention is paid to principles, and that the physical basis of political and economic geography is too much neglected. Before any great improvement can be looked for, teachers must themselves receive special geographical training. The programme for the new science schools which the Scottish Education Department have proposed may be taken as an indication of what will soon be required in all schools. The need for trained teachers to carry out such a programme is obvious, and it is all the more necessary as more time must be given to geography in most schools, which can be done without damaging other subjects only by a judicious use of the geographical aspects of those subjects. For instance, much elementary physics can be grouped with physical geography, applied mathematics with map making, and a free combination of history with physical geography as well as political geography may well be attempted. This will become increasingly possible as the codes grow less rigid and teachers are permitted to draw up their own syllabuses subject to the depart-

mental criticism. In this matter the Scottish department has again made a great step forward in their new code.

Such improvement in general education at school is a necessary preliminary to improvement in special education in commercial colleges. Without a proper grounding at the day school nothing but the most elementary work can be done at the commercial school and college, and this elementary work is practically all that is done at present. A great advance in the quality of work in commercial colleges will take place when the quality of that done in our primary, but more particularly our secondary, schools is improved.

IN THE COMMERCIAL SCHOOL AND COLLEGE AND AT THE UNIVERSITY.

Geography is at once a necessary part of the business man's stock of knowledge, and one of the best educative elements in his training.

The scope of geography as a tool will vary from place to place. In a great commercial seaport the leading routes, ports, and markets of the world would be more fully treated than in a manufacturing center, where only special ports, routes, and markets would require this detailed consideration. In one region some parts of the world are of more importance than others; the geography of these would require to be known in detail.

We may consider the needs of three different classes, each demanding a different scheme of education. (1) There are those going into business immediately on leaving school and who wish to supplement their knowledge by attending evening classes. (2) There are those who can afford to give more of their time to study, and take one or two years in a commercial college, or continue their studies in such a college combined with their daily work. (3) There are those who wish to specialize in the study of commercial subjects, and devote three or four years to this. These we may distinguish as elementary, intermediate, and advanced commercial training.

Elementary commercial education: The commercial evening school.—In the commercial evening school the geography course should be continued for at least two, and, if possible, for three years. In each year the student should gain a greater grasp of the principles of economic geography, as well as a more extensive knowledge of the distribution of economic products, and of trade centers and routes. In these two or three years a thorough knowledge of the economic conditions of the British Isles, of the principal British colonies, and of the leading commercial countries of the world should be gained, as well as of the economic aspects of general geography. This is not so impossible if the preliminary training has been satisfactory. At present most teachers of economic geography find they have to spend much time in imparting to their pupils an elementary knowledge, more particularly of the principles of geography. Hard and fast syllabuses issued by a central department, and applying to all schools, are very undesirable; but carefully considered suggestions would be useful to the teacher in making up his programme, more particularly at present, when no very definite tradition as to the content of economic geography exists.

Each teacher should be at liberty to draw up his own programme, which should depend on the economic conditions of the center, and also on the interests of the teacher himself. Any examinations should be conducted—as far as this is possible—on the teacher's syllabus and not on those of a central body. While no definite syllabus should be prescribed, a few suggestions may be found useful.

There are several ways in which such a class may be profitably conducted:

(1) For instance, a detailed study of the economic products of the home region, and of the regions with which it trades, might be made the means of imparting the most important detailed information that is required by the business man, and at the same time form the basis for a study of the main principles of economic geography.

(2) The British Isles may be taken as the area for detailed study, and the principles deduced from the facts learned in connection with them, such as the climatic control of wheat farming, the coal control of industry, and so on.

(3) Another useful method of beginning the study of commercial geography is to revise the facts of general geography from an economic point of view; to study the circulation of the atmosphere, for instance, and its relationship and effect on navigation, or the distribution of heat and its relationship to different types of plants.

Each of these methods has been adopted by one or other of the teachers at present active in our evening commercial schools. In a few years the experience gained will allow each teacher to find out what is really best for his pupils. At the same time an occasional meeting of teachers of geography to discuss methods would be a useful means of hastening this.

What is required most at present is an extension of commercial schools and a

better coordinated curriculum for the pupils who wish to obtain a commercial certificate at them. For this certificate economic geography ought to be one of the compulsory subjects, and each student should have at least two sessions in the classes in this subject before entering for examination.

Intermediate commercial geography: The commercial college for day students.—Many parents who feel that they can not afford to send their boys to a university or to a commercial college for full training desire to continue the education of their sons for at least one or two years after leaving school in some higher institution. In commercial colleges provision should be made for the training of such pupils, and also for another type of pupils such as we find among the law students of the Scottish universities. In Edinburgh and elsewhere law apprentices are permitted to attend university classes one or two hours a day during their apprenticeship. This might well be extended to youths beginning business who would devote part of the day to acquiring a knowledge of practical business, and during another part be continuing their general education, specialized along economic lines. Commercial colleges and the faculties of commerce in our universities should provide for the needs of such students. The courses for such students should be more advanced and thorough than those of the commercial evening school. The main difference from the training in the evening school should be the greater insistence on the principles of economic geography combined with a study of the history of commerce, more particularly in the nineteenth century, thus giving the pupils a sound knowledge of the causes bringing about the great economic development of present times. Such a training for those who will become the managers or principals of great businesses is of the utmost consequence. At present practically no systematic provision is made in this country for this education. Both in technical and commercial matters the country has become thoroughly alive to the necessity for proper education, and steps to insure it are gradually being taken. Already our technical schools may be called satisfactory, and it is hoped that in a very few years our commercial departments will be equally advanced. Both in technical and in commercial matters, however, there is a great lack of opportunity for higher education. This higher education is quite as essential as the more elementary.

Higher economic education: The faculty of economics in the university.—Those who are going to lead in the economic world need as thorough a training as those who lead our navies and armies. It may be said that the most valuable training will be in the actual world, and of course this is quite true; but to make this experience of the actual world of greatest service it is necessary to put our leaders in possession of a thorough knowledge of economic facts and principles, and, above all, to give them the power of applying the principles to the facts, to train their power of judgment and of prompt and efficient action. Economic geography from this point of view is no mere collection of statistical data, either of distribution of commodities or of the means of distributing commodities. It is not even confined to a study of the movement of commodities from place to place. An economic leader must be capable not merely of surveying the world with an economic eye and seeing all the economic movements that are taking place, but he must have a vision of the economic possibilities of regions and markets still undeveloped. He must be able to realize possibilities as well as actualities. Only in this way can we train men who will organize the victories of peace.

The task of training such leaders in the world of industry, trade, and finance is one which should fire the imagination of all our university authorities, more particularly those situated in great industrial and commercial cities, such as London, Birmingham, Manchester, Liverpool, Leeds, and Glasgow.

The economic, however, is not the only aspect of applied geography which should be dealt with in a modern university. A geographical training should be given to men of affairs, civil servants, consuls, explorers, and missionaries, as well as to business men. Provision should be made for special courses which would be useful to engineers, physicians, soldiers, and, in the maritime cities, also to sailors.

In all universities the application of geography to teaching should form one of the most important features of the work of the department. Just as the training of the business man is a natural interest of the universities of our great cities, so the training of the teachers for the economic schools fits in well with the plans of the older universities.

In the economic side of every university a very thorough training must be given to the students. In addition to the theory and history of economics and other subjects taught in the economic schools of such universities as Pennsylvania, although not yet in this country, economic geography should be an essential subject. This should include not merely an intimate knowledge of the descriptive geography of the different countries of the world, from an economic point of view, but should deal

with such facts as their weights and measures, their customs regulations, and the nature of their ports and their facilities of communication by land and sea. It should include a study of the different races of the world from an economic point of view, considering their customs and prejudices, the nature of their clothing and utensils and their wants, more particularly those which can be supplied by our manufacturers. The student should have practical acquaintance with the produce of different parts of the world (Waarenkunde), although this need not necessarily be taught by the geographer.

The student should be accustomed to deal with statistics of all kinds and should know the principal publications of our own and foreign countries where economic information can be obtained. Reports issued by the boards of trade, agriculture, and other Government departments, reports by our consuls, and other official publications should be perfectly familiar to him, and he should be trained not merely to consult, but to interpret, such documents; in other words, he must learn the way to handle geographic tools. A knowledge of the use of tools alone is not sufficient. The power to direct the using of tools is even more important. The habit of interpreting statistical and other reports, as well as of acquiring the information they contain, is essential in a successful merchant or financier. In the economic geography course, therefore, great stress should be laid on a thorough understanding of the principles of economic development, and as far as possible this should be applied not merely to the interpretation of the present economic conditions, but also to a forecast of those of the near future. The economic possibilities of many parts of our empire, the possibility of making new or of extending old markets, should be constantly studied.

The economic section of a geographical department must, therefore, be equipped not merely with highly skilled teachers, but with adequate apparatus. The geographical department should be as extensive, and would probably prove as expensive, as any other department in the university. It requires its special institute as much as physics or chemistry or any other subject which has at once an academic and an economic interest.

The geographer has to know his types; he has to accumulate his samples as the biologist does; he needs more books and maps, more photographs and specimens, than any other teacher in a university, and these usually of a more expensive kind. The staff must be that of experts. Not merely one geographer is wanted in a modern university, but at least half a dozen, each of whom is a specialist in some section of the subject. Each teacher should be an expert in either one great region or in one aspect of geography. The specialist in one continent or country should every now and then be afforded facilities for visiting it. He should correspond with and as far as possible know personally the other leading authorities on his own region. All the important publications relating to that country should be systematically added to the departmental library under his charge. Each expert should be responsible for the up-to-date character of the books, maps, specimens of his own special area. He should keep a card catalogue of published matter dealing with his special region, and should be able to give information to the business man as well as to the student on any subject connected with his particular region. While teaching should form part of his duties, general research and the direction of research should take up a large proportion of his time.

In the library, map, photographic, and museum departments it is desirable that there should be the closest possible cooperation between the geographical department of the university, the local chamber of commerce, and the geographical society. All of these bodies are constantly accumulating literature, etc., of economic interest, which it would be well to unite into one collection arranged in a uniform manner. The collections should be so arranged that they are always easily studied, and they should be housed near enough the business center of the town, as well as the university, that both the business men and the university students would find it easy to make constant use of them. This institute might well be the center from which the loan collections of all kinds might be sent out to the towns round about, in the manner which Mr. Sowerbutts has suggested for his proposed commercial museum. In this way the closest connection would be maintained between the academic and the commercial world. The work of the geographical department would be given not merely the theoretic completeness of the university department in the matter of research and of teaching, but both of these would be so determined by the practical needs of the community that the pupils trained by the geographical department would possess a thorough knowledge and practical power of dealing with concrete economic problems, and by it the research work published would have a completeness and a practical utility whose importance it would be difficult to exaggerate.

Dr. Herbertson, the author of the preceding paper, presented also a report of what is being done in some other countries in regard to the study of applied geography, and this report contains a number of statements of facts that will be welcome to educational authorities everywhere. It is therefore reproduced in full. The following is the report:

Report on the Teaching of Applied Geography.

[Prepared at the request of the council of the Manchester Geographical Society. By Dr. A. J. Herbertson, F. R. S. E., F. R. G. S., lecturer on Industrial and Commercial Geography, Heriott-Watt College, Edinburgh.]

INTRODUCTORY.

Just as geography may be defined as a special way of looking at the greater organisms that make up the world—its mountain and river systems, its plant and animal associations, its races of men and their organizations—so applied geography may be defined as a special way of looking at geography, a limitation and a specialization of the study of it from one point of view. For the business man this point of view is an economic one, for the medical man a climatic and demographic one, for the missionary an ethnic and ethical one.

There is one aspect of applied geography which is not dealt with at all in this report—the educational one. The educational aspect has been too much neglected both by schoolmasters and by geographers. It is not sufficiently realized that all departments of geography should not necessarily be taught in school, but that a good teacher must make a selection. The limitations he will put on geography will vary with the locality wherein he lives, and the future work of the pupils he teaches. The choice of the most educative elements of geography is a difficult one, and requires considerable knowledge and great judgment. * * *

The applications of geography to military, medical, and missionary purposes can be very briefly dealt with, as, at present, the subject is practically not included in the curricula of most colleges and schools training for these professions.

In addition to the very elementary geography required for entrance to the military school, geography is studied in connection with history, and military topography is another subject taught.

The following letter, from one of the leading missionary societies, summarizes the customs of most:

"In reply to your questions concerning the instruction of missionaries in geography, I am afraid that I have not much information to give.

"(1) Our committee have not thought it necessary to require any more special knowledge of geography from missionary candidates than is represented by an ordinary English education.

"(2) Owing to the extent of the society's operations, and to the impossibility of foreseeing special vacancies in the mission field, we are not able, as a rule, to assign candidates to any particular mission until near the time for them to sail, and hence we can not do much in the way of giving instruction to individual new missionaries concerning the special geography of the country to which they go. As soon as we do know to what particular mission a particular candidate is going, we do what we can to help him obtain, before he sails, such knowledge of the country as is likely to be of use to him. This would have more to do with the people and their history, customs, and religions, than with the physical features and productions of the country; and we seek to do this by lending him books and by putting him in touch with retired missionaries or those at home on furlough.

"I ought, perhaps, to add that our medical advisers make a special study of the climates of the different countries to which our missionaries are sent, in order to be able to advise us as to the suitability of individual candidates for this or that field, and that we, of course, also keep ourselves informed as to the kind of food to be obtained in any country, so as to be able to advise recruits what supplies to take with them. Beyond this we do not make any special study of the products of the different countries, as our missions are not in any sense commercial."

It would certainly add to the admirable work already done by so many missionaries, both as missionaries and geographers, if a more careful training, more particularly in human geography, could be given to them than the slight elementary knowledge they gain at school and the special information they obtain from experts and standard works in the hurried weeks immediately before their departure for the mission field.

A certain amount of geography is no doubt taught in the public health depart-

ments of the leading medical schools, but as far as can be learned no systematic study of medical climatology or demography is given in any of our medical schools.

At the present time the idea of applied geography is perhaps limited in most minds to that of economic geography, or even to purely commercial geography. There are many reasons for this, the pressing practical need for the recognition of this aspect of geography being the most important. Technical education has recently been organized throughout the country, and may be said to be developing in a satisfactory way. Having turned our attention to the practical scientific study of production, we must now do the same for distribution. The school for the practical scientific study of the means of distribution—the commercial college—has not yet had the attention paid to it that it ought to have and that it will have. In such a college the commercial side of geography should have a very important place. Commercial geography is the study of the alteration of existing distributions of commodities and of the means by which these changes are effected. It corresponds to the study of circulation in the human subject. It is not a statical, morphological study of a dead world, but a dynamic, physiological study of a living one. Hence it is at once a most attractive and a most difficult subject—one requiring careful preparation of the pupil and still more careful and thorough training, combined with a wide experience of the world, of men and of their economic activities on the part of the teacher.

It is to this aspect of applied geography that this report is almost exclusively confined, and it contains a summary of the results of an inquiry into the existing state of affairs in this and other countries, such as can be gained from correspondence and perusal of documents, a selection of which is given in an appendix.

THE PRESENT POSITION OF ECONOMIC GEOGRAPHY IN OUR EDUCATIONAL SYSTEM.

To ascertain the present position economic geography holds in our educational system many teachers of commercial geography were approached in person or by letter, and a correspondence was entered into with the managers or directors of technical and commercial colleges and others interested in the subject. In addition, a circular letter was sent out by the society to all the chambers of commerce in this country, asking for information about the teaching of commercial geography in their district, and what steps, if any, each chamber had taken to promote its study. Answers were received to this letter from 31 chambers, and in a number of cases led to a correspondence with other local authorities.

A large number of the chambers of commerce replying, while stating that they had done nothing directly to found courses in commercial geography, expressed sympathy with the idea of having them, and some urged the great need there was for them. One secretary in the north of England wrote: "Boys leaving any kind of school in this country are not acquainted with an elementary knowledge as to the location of the chief towns of their own and other countries. I have known an intelligent boy state Rotterdam was in Belgium and ask if a letter to Pontypridd required a foreign stamp."

The following letters are typical of another set of answers:

"In reply to your inquiry respecting the teaching of commercial geography in this district, I regret to say that we as a chamber consider that instruction in this important matter does not receive the attention it deserves.

"Outside the ordinary school curriculum there are few opportunities for its study, and a special committee of the chamber is now engaged in striving to find the means for encouraging an interest in this and kindred subjects.

"The chamber is not making any special efforts to promote the teaching of commercial geography, although we have been endeavoring for some years to give special prominence to commercial education generally, but owing to the lack of cooperation of the educational authorities we have been unable to effect our purpose at present.

"I have made inquiries of the scholastic authorities in the neighborhood, and am informed that all the teaching in the higher grade schools on this subject is in this direction, the masters giving prominence in their lessons to matters connected with productions, industries, and trades of various countries."

One chamber, which reports that commercial geography is taught in secondary schools, adds: "An evening class was opened some years ago in commercial geography, but the attendance was so very small that the governors were obliged to close it."

A number of chambers try to promote the teaching of commercial geography by giving certificates and prizes on the results of examinations on the subjects, and the London chamber has organized special commercial examinations (see later). Some chambers have succeeded in getting commercial geography made a course in the local technical school, and others are making arrangements for such a step next session. Some chambers have a list of firms giving preference to candidates for situa-

tions who possess a commercial certificate, but in a few cases commercial geography has no place among the subjects necessary for this certificate.

The agencies at present engaged in directly spreading a knowledge of commercial geography are: Secondary schools, some of which have special classes in the subject for advanced pupils; evening continuation schools, technical and commercial schools and colleges, the university colleges and the university extension societies, and the geographical societies.

It is not possible to discover how many secondary schools have special classes for commercial geography. Those which do usually prepare their pupils for examination in the subject by one or other of the authorities noted below. It is a debated subject whether commercial geography should be taught as a special subject in our secondary schools, and the writer of this report, while admitting it may be desirable in special circumstances, is strongly of opinion that as a rule it ought not to be attempted, and that the time would be much better spent in giving pupils the thorough grounding in the facts and principles of geography, which they so rarely get at present. No good teacher of geography, however, will ever omit to point out to pupils who can appreciate the points the economic applications of the geography lesson.

For the continuation schools a very satisfactory syllabus has been prepared by the educational department for the guidance of teachers, and it has the great advantage of being a syllabus the teacher is not bound to follow, but one which he can modify to suit local needs. (See Appendix A.) The number of continuation schools teaching commercial geography in England and Wales in 1897–98 was 495, and payment was claimed for 12,460 pupils.

In Scotland in 1897–98 geography was taught to 18,191 pupils in 237 departments of continuation schools.

Many of our technical colleges have a commercial department, and in most of them which have this department commercial geography is taught. The syllabuses vary very much, depending partly on local conditions, partly on different conceptions of the content of commercial geography. In some cases the syllabus is peculiar to the institution, in others it is that of one of the chief examining bodies.

Special attention must be called to the efforts to promote sound teaching of commercial geography in the West Riding of Yorkshire. The county council have arranged for a special set of Saturday lectures on commercial geography for teachers. These are given by Mr. E. R. Wethey, M. A., F. R. G. S., whose syllabus is appended. A special set of slides is prepared for each lecture. The lectures have been very successful, and the secretary of the Heckmondwike Chamber of Commerce reports: "Commercial geography is taught here at the higher schools both in day and evening classes. The school teachers attend the county council classes at Leeds on Saturdays and reproduce the lectures here with the use of the lantern slides."

The training of commercial geography teachers is of the utmost importance, and it is satisfactory to be able to report that it has been undertaken in several other centers, making use of the University Extension organization.

During the winter of 1898–99 University Extension courses in economic geography were given in different parts of England, but mainly in London, and are well attended. The examinations have not yet been held, but last year the results in cases coming under the writer's personal observation were very satisfactory.

In 1898–99 four courses, each of 25 lectures, dealing with different branches of economic geography, attended by 358 pupils, were given in connection with the London University Extension Society, one of the courses with the cooperation of the London school board. Other courses in geography were given by University Extension lecturers of Oxford (2), Cambridge (3), London (3), and Victoria (1), which had only an indirect connection with economic geography or none at all.

Hitherto the universities have paid no attention to economic geography as a special subject for students of geography or of economics. This winter Liverpool University College, in conjunction with the chamber of commerce and the technical instruction committee of the county council, founded a school of commerce. Commercial geography is one of the subjects. The school of commerce is, however, at present only an evening one, and corresponds to that of Nottingham University College and to the technical evening colleges elsewhere, and not to the faculty of commerce that now exists in several foreign universities. The importance of such a faculty of commerce has been ably urged by Mr. Chamberlain for Birmingham, and should become part of the universities in all our large cities.

One institution in this country, however, can be compared with some of the best foreign ones—the London School of Economics, where lectures are given in economic geography.

So far as the writer can learn the University Extension lectures, those in Leeds to

West Riding teachers, and those in the London School of Economics, are the only means of gaining instruction in aught but the rudiments of economic geography at present available in this country.

The various geographical societies, by their lectures and journals, do much to promote an extension of our knowledge of commercial geography, and none more than the Manchester society. The museum proposed by the society will prove of great service to those who have access to it; and it is an essential part of the new scheme that arrangements be made for lending small sample collections of economic interest to the schools and colleges which affiliate themselves with the society. This will facilitate the carrying out of one of the recommendations of the education department in the north of England. (See Appendix A.) The unique work of the "Victorian" lecturers of the Manchester Geographical Society must be mentioned in this report. In 1898–99 many lecturers dealt with various parts of the British Empire and other lands, from an economic as well as a geographic point of view.

Several organizations exist for examining the pupils trained in commercial geography. Commercial geography is not a subject necessary for the College of Preceptors' commercial certificate, but it is part of commercial English for the intermediate education board for Ireland, and commercial history and geography form one compulsory subject for the commercial certificate of the local examinations of Edinburgh University. In England several bodies are specially concerned with the examination of students of commercial geography—the London Chamber of Commerce (examinations in London, Southampton, and Jersey); the Society of Arts (Birmingham and elsewhere); the Union of Lancashire and Cheshire Institutes, and several county councils, which give commercial scholarships and exhibitions and conduct special examinations for candidates, like the Lancashire County Council.

What is needed at the present time in this country seems to the writer to be:

(1) A clearer idea of what should be taught as economic geography; for the impression his experience leaves is that far too many of the faults of the old methods of teaching geography are still retained. Wearisome and useless lists of capes, islands, rivers, and mountains may not be given, but they are too often replaced by equally objectionable lists of exports and imports.

(2) Means for training teachers of geography and business men who wish to learn more than the most elementary facts and desire to become experts. The universities and university colleges are the bodies on which the duty of doing this should fall.

(3) At the same time an expansion of University Extension lectures and the formation of advanced classes in the subject in our technical and commercial colleges are much needed. The writer's experience is that the first year at a commercial geography class only suffices to prepare a pupil to begin a thorough study of the subject, and that much good work is lost both to pupil and teacher through there being no opportunity for continuing the work together.

ECONOMIC GEOGRAPHY IN FOREIGN EDUCATIONAL SYSTEMS.

Without personal inspection of the different kinds of commercial schools and colleges at home and abroad it is very difficult to form a very decided opinion on the question whether other countries are more advanced than our own in the teaching of economic geography. In all countries special attention is now being directed to commercial education, and every year new schools are being started, and the scope of those already existing greatly enlarged. Probably the facilities at present available for learning elementary commercial geography are almost as good in this as in other countries; but the British teacher labors under the disadvantage that his pupils are not so well prepared to profit by his teaching as those of Continental countries such as France, Switzerland, and Germany; and he himself can not find the means of obtaining a geographical training such as most foreign teachers possess.

There can be no hesitation, however, in pointing out that greater facilities for higher training in economic geography exist in some foreign countries than at home, and it is necessary to emphasize the need for adequate provision of higher economic education in this country.

A summary of the information received from various foreign correspondents is given here, and extracts from some of the syllabuses sent are printed in the appendix.

France.—The director of secondary education in France has kindly drawn up the following valuable statement on the position of economic geography and the history of commerce in the commercial schools of France:

"The teaching of geography and the history of commerce has an important place in the syllabuses of the higher commercial schools and the commercial colleges of France. The final examinations of these institutions give the successful pupils a

coveted dispensation in the matter of military service, and this attests their importance.

"In the commercial schools, as in the lycées, the study of economic geography is based on an exact knowledge of the physical structure and the political conditions of a country. The French programmes have never encouraged the introduction into the lessons of lists of agricultural products, of manufactured articles, of means of communication, and of commercial statistics under the pretext of adapting geography to the needs of practical education. It is made a means of giving the pupils a true education; that is to say, of developing their powers of reasoning and of initiative. For this purpose the section of physical geography is in no ways limited. The masters, however, are recommended to avoid the faults of useless erudition, and to adapt the physical geography to the end in view. For instance, if they have to touch on the domain of geology, it ought to be to furnish general notions about the composition of the most fertile soils, and to indicate the distribution and the importance of the common minerals. In studying climates they ought to teach what is of importance for agriculture, and how climate affects ocean navigation. In describing the mountains they ought to insist upon the distribution of valleys, passes, and slopes. In dealing with rivers they ought to show how their length, depth, and variations make them suitable for navigation. The same precautions are enjoined in studying the conditions of animal and vegetable life.

"This essential discipline is easier in our commercial high schools owing to the custom of associating history and geography in education. It appears to our educational authorities, or at least to the greater number of them, that a real adaptation of the geographical studies, such as their limitation to the social facts of the diffusion of wealth, has its foundation in the historical method. Our pupils seem to be trained by this discipline to direct their interests toward the ideas which explain the relationship of the human societies to the regions in which they are settled, or are commencing to be settled, by commerce and by colonization. We have tried to orient our commercial education like our classical education, by the philosophy which is necessary to it. Hence it is that the history of commerce is a subject intimately allied in its educative work with the study of history properly so called, and of geography. Formerly the history of commerce was confined to an account of the mere general facts of exchange, and an explanation of economic doctrines; now our instruction in the history of commerce tends to become explanatory and evolutionary. The descriptive lessons are always combined with an examination of the geographical conditions of each people and of each epoch. In short, the programmes of history, commercial or other, and of geography are harmoniously and strictly bound together. At any rate, we attempted by the formal instruction and by the tendency given to the final examinations to arrive at this result.

"It is probable that an approaching modification of the entrance examination to the higher commercial schools will give a powerful and efficacious sanction to the reforms of which we have just sketched the spirit. At present the entrance examinations are entirely oral as far as regards geography. In future a written examination in the form of questions, of problems, and of a dissertation will be compulsory. Consequently the candidates will hereafter be trained, not merely in an exact knowledge of descriptive geography, but also to coordinate their information, and to deduce well-reasoned conclusions. Alongside the course in theory there will be a course in applications. The power of judgment will be developed, and that of pure memory minimized. We consider that geographical education will not bear fruits except under such conditions.

"In the examination for our professorat commercial there will be the same endeavor to associate the geographical teaching with the greastest possible number of other studies. In the higher examinations geography is not allied to the history of commerce nor to the political economy, which are treated by themselves, for we are guaranteed against an abuse of specialism by the age and maturity of the student. We ask the candidates, however, after a brief preparation, to discuss a question in economic geography in a foreign language. This ingenious examination has given us the greatest satisfaction. Owing to the complex character of this text we are assured that the future professors, sent on a mission to a foreign country, are not merely trained in the current language, but have lived among the people of the country in which they have visited, have heard the discussions in different kinds of societies, and have read much. In this respect we are fully satisfied with the results.

"In general outline such are the principles which dominate our teaching of economic geography. They are of the same nature as those which inspire all our secondary education."

Economic geography has an important place in the curriculum of the L'Ecole des Hautes Etudes Commerciales, which is supported by the Paris Chamber of Commerce.

This school prepares students intended for business or industrial life for positions in banks or in railways, for the consular and the civil service, and for commercial teaching. The pupils are those who have passed through the Lycée or other secondary schools, and must be over 16 years of age. An entrance examination is required. A special preparatory school has been formed for preparation for this examination.

Belgium.—Twelve special commercial schools exist in Belgium. The most important are those connected with the Universities of Brussels and Liége and the Higher Institute of Commerce in Antwerp.

At these institutions the course extends over two years, but for those entering the consular service a third year is required.

The pupils at the Antwerp Higher Institute of Commerce have to pass an entrance examination on the general subjects of instruction in the Athénées, Colleges and Gymnasia, and a preparatory course is also given at the institute for this examination, in which physical geography forms a part. A commercial museum, library, and laboratory form part of the institute.

German Empire.—The following quotation from an interesting and valuable report on Commercial Education in Germany, by Mr. Consul Powell (Diplomatic and Consular Reports, Miscellaneous Series, No. 483, 1898), summarizes the present condition in Germany:

"There existed in 1891 in the German Empire 165 commercial continuation schools, of which 65 had been started since 1885. In Prussia there were 77; in the other States, particularly Saxony and Baden, 88, only one of which was founded by the Imperial Government. Town councils founded 23; chambers of commerce, 11; merchants' guilds, 20, and others by associations and private munificence. The State granted a subvention to 54, and town councils to 68.

"A higher order of commercial education is found in the secondary commercial schools, sometimes improperly styled commercial academies, and are either independent establishments, as those of Leipsic, Dresden, Chemnitz, and others, or only special branches attached to the higher public schools, as at Munich, Zittau, Frankfort-on-the-Main, Flensburg, and a few other places.

"The intention of these commercial academies is to benefit those young men who, before entering business, wish to devote a few more years to the further cultivation of higher branches of commercial knowledge, and to perfecting themselves in modern languages. On the other hand, the 'Handelsschulen,' which are based upon or joined to the national school or secondary school system, teach German, foreign languages (always English and French, oftentimes Italian and Spanish), history, geography, mathematics, natural science, drawing, commercial history, banking, exchange, commercial law, bookkeeping, political economy, knowledge of merchandise, and technology.

"It is now stated that the Prussian Government are next session going to introduce a bill in the Landtag to provide a considerable sum of money for the support of commercial education, not only with reference to the education of clerks, but also as a new department in University Extension, and it has been deemed advisable to imitate the example of Leipsic with its recently opened commercial university, and to attach to a number of universities a special branch for the teaching of commercial knowledge in its more advanced and scientific regions, similar to the polytechnica at Karlsruhe and Darmstadt, which, so far as I am able to ascertain, were the first to adopt the Leipsic method.

"At Aix-la-Chapelle, Berlin, Hanover, and other places possessing polytechnic institutes, special departments for commercial instruction are to be added, the efficiency and success of which can hardly be doubted. In short, the great interest in commercial education which has now been aroused in the various governments of Germany is sure to produce very considerable results before long."

Dr. Sigismond Günther, professor of geography in the Polytechnicum at Munich, has sent an account, of which the following is a summary:

"Our school gives a complete course in commercial and economic geography every year, two hours per week being devoted to it. In winter extra-European countries, and in summer Europe, are dealt with. The course is compulsory for all who aspire to become custom-house officers. Except this school, there is no other in Bavaria dealing with this subject from an academic point of view, but a proposal has been made to organize a course in this branch of applied geography at our industrial metropolis—Nüremberg. Except for this, there is no advanced instruction in economic geography, although it is naturally a subject taught in the elementary commercial school."

In Leipsic, the Public Commercial School (Oeffentliche Handelslehranstalt) is nearly seventy years old, and is now under the charge of the chamber of commerce. In the division preparing youths who have finished their school course for business geography is taught two hours a week in each of the three classes.

Dr. Kurt Hassert is giving a course of lectures of three hours per week in the University of Leipsic, and also in the Commercial University (Handels-Hochschule) on the geography of the world, transport, and trade.

Dr. T. Delius, lecturer in English and in economic geography in the newly formed commercial department of the Royal Polytechnicum, at Aix-la-Chapelle, has kindly supplied the following information:

"For some time past there has been a movement on foot for a higher commercial education on the plan of our university system, but it has not as yet resulted in the establishment of a new institution except in Leipsic. Last year they tried the experiment at Leipsic of admitting young business men to the university lectures on the same footing as the other students, and the experiment seems to be successful. We are trying here a different arrangement, viz, the addition of a commercial department to the technical one already in existence. There will be lectures on all the principal subjects that interest business men: Political economy in all its branches, commercial law, commercial arithmetic, 'waarenkunde' (knowledge of merchandise), modern languages, commercial geography, etc., so as to provide for the needs of a higher education for business men.

"For economic geography only two lectures a week are provided at present, but I hope to obtain more before long. In the winter session I intend to lecture on America, Australia, Africa, and Asia, while my colleague, Dr. Lehmann, is going to lecture two hours a week next summer on general economic geography and Europe. This arrangement will probably be modified at no distant date, but at present the whole thing is in an embryonic state. The funds for the new department are not provided by the State, but by the chamber of commerce and other commercial corporations. We are going to establish a commercial museum in connection with our department. We have funds for 'Waarenkunde' and for a collection of coins—the latter of which is under my charge in the summer session. I lecture on measures, coinage, etc. Besides, I intend to establish a geographical collection—especially literature—monographs, etc., referring to economic geography."

Netherlands.—Mr. W. R. Bischop, honorary secretary of the Netherland Chamber of Commerce in London, has kindly obtained the following information from Mr. J. Yzerman, of Amsterdam, lecturer in geography at the Commercial High School at Amsterdam, through the intermediary of Dr. J. H. H. Hülsmann, head master of the same school:

"In all Dutch schools the pupils go through an elementary course of geography. There is no special training in commercial geography, except in those schools which are specially devoted to the education of pupils in commercial matters.

These schools are: (1) The Commercial High School at Amsterdam, where a course of lectures is delivered twice a week, extending over two years. This school is organized by the municipality of Amsterdam.

"*Syllabus.*—The Netherlands, and its colonies and possessions, is the special subject treated in these lectures, but the most important European countries—e. g., England, Germany, France, Belgium—and the most important non-European countries—e. g., the British colonies, Egypt, China, Japan, United States of America—also receive careful attention. The industries, commerce, connections by sea and railway and telegraph, the transport arrangements, the ports and markets of those countries, are studied. The physical condition, climate, the food, etc., are described. Full statistics are given. These are mostly derived from consular reports. The statistics for the Netherlands and its colonies and possessions receive most consideration.

"In former years 'Zehden's Commercial Geography' was used, but as it gives most particulars about other countries than the Netherlands, and very little about the Netherlands, the pupils have had to rely on the lectures delivered by the teacher.

"(2) The private Commercial High School at Amsterdam. We know commercial geography is taught at this school, but we have no particulars of the course of instruction.

"(3) Twentsche Commercial and Industrial School at Enschede. The manufacturing district in Holland, in the province of Overysel, is called Twente; it is the Dutch Lancashire. The curriculum lasts one year. The programme includes the Netherlands, its colonies and possessions, and the countries which have most commerce with it. The highways of the world's commerce are also treated.

"(4) The Commercial Class at Rotterdam. The curriculum lasts a year, two lectures a week. The programme includes the principal countries of Europe. The special subjects are: The centers of industry, the commercial highways by land and water, the condition of the agriculture, and the principal commercial towns. Plants—cotton, flax, poppy, etc.—which have importance in commerce and industry are dealt with, and special attention is given to their cultivation, their peculiarities, their transport, etc. The chief markets for the raw products and for manufactured goods are described.

"In connection with the schools or classes numbered (1) and (4) a public high school exists, where the pupils are, more than at the other public high schools in the Netherlands, taught with a view to a subsequent special commercial training. The education at those two public high schools lasts three years. Pupils enter generally when they are 12 years of age.

"Only pupils who have successfully passed through the three years' curriculum at these public high schools, or their equivalent elsewhere, can follow the whole course of lectures delivered at these commercial high schools. Such training, however, is not necessary for pupils who want only to attend to the lectures on one or two special subjects.

"At the Commercial High School at Amsterdam lectures are delivered like those at Rotterdam with regard to the raw products of industry and commerce (wares and merchandise). This forms a special subject, and is not treated in connection with commercial geography.

"The above are the chief points of the report which has been sent to me.

"Commercial geography is taught in the Netherlands in the two principal commercial towns, and in the principal seat of industry.

"The idea of the educational system in the Netherlands is that commercial geography can only be taught successfully if the pupil has a sound knowledge of the general geography of the world. It is not taught to children under the age of 15 years, and only to pupils when they have had such an education as will enable them to follow such a subject intelligently. It is only taught to those intending to follow a commercial career.

"Commercial geography is looked upon in the Netherlands as a special subject of teaching. This is why it is taught in a thorough manner. The better the grounding in general education the pupils have the higher the standard is that the teacher can aim at."

United States of America.—The University of California has founded a college of commerce of full academic rank. Prof. George Davidson, who has been over fifty years in the United States Coast and Geodetic Survey, and whose travels are counted by hundreds of thousands of miles, has been appointed to the geography chair. His course this winter deals with the Pacific; its currents and winds and highways of commerce, and countries bordering the Pacific; the nature of these countries and of their peoples; their various products and manufactured articles; their inland transportation; and their relation to the great highways of commerce. A commercial museum is attached to the college.

The University of Chicago has also founded a college of economics and politics; but as yet no provision has been made for the teaching of geography.

The economic schools of several other American universities are very important, but except for lectures upon transport, usually associated with transport law, geography is not a subject dealt with in them.

The Commercial Museum in Philadelphia deserves special mention, although it does not as yet have any systematic courses of instruction in connection with it. Some of its monographs on economic geography are such as should be prepared in the economic section of the geographical department in a modern university. Some of the specimens of its great collection are arranged geographically, and the museum ought to be a great center for teaching economic geography. Commercial museums should form part of the necessary equipment of every geographical department, although not necessarily on the elaborate scale of the great one in Philadelphia.

CONCLUSIONS.

1. There is a growing realization of the importance of commercial geography in all commercial countries. In many centers of our own country, more particularly in the industrial regions of England, so much has been done in the way of forming classes on the subject in the evening schools that it is coming to have a more important place in the evening continuation schools everywhere.

2. On the other hand, there is no consensus of opinion as to what commercial geography is, or what should be the successive stages in which it is taught. The diversity of syllabus, however, is a good feature, for every region has its own particular economic conditions, which should largely determine the details of the syllabus.

3. One difficulty most teachers of commercial geography in Britain have to contend with is the lack of geographical training in their pupils, and much time has to be spent in teaching them what they should have learned at school. The syllabus of the entrance examination of the École des hautes études commerciales in Paris is an example of the knowledge required abroad before a pupil is admitted into an

advanced commercial school. The need for improving the quantity and the quality of the teaching of geography in our schools, where it is so often neglected, is a very pressing one, and must be attended to if the special training of the evening and day commercial schools and colleges is to be of much value. A thorough and sound commercial education can only be based on a thorough and sound general education.

4. Another difficulty is that teachers have to teach themselves, and at present hardly anything is done to help them to do this. More advanced teaching in economic geography is even more necessary than an extension of elementary teaching. At present practically no provision is made to systematically give advanced instruction in economic geography, and this is not likely to be done until the matter is seriously taken up by the universities. The directors of industry and commerce need this systematic training even more than their subordinates, and it is of vital importance that the universities and the more advanced technical colleges should see to the adequate provision of the means of teaching this subject, as the Germans and Americans are beginning to do.

It would seem, therefore, that the continental nations are ahead of us in the more thorough training given in geography in schools; that, like ourselves, they have become thoroughly alive to the importance of a sound special training for young business men after their school years, for which they are now making provision, and in the matter of advanced economic training they have moved ahead of us.

Some of the writer's views about the economic section of a geographical department are outlined in the accompanying paper. In conclusion, he has to thank the numerous correspondents who have so readily answered his many questions, and, above all, the Manchester Geographical Society and its energetic secretary for the opportunity of making this survey of the present position of the teaching of economic geography.

APPENDIXES.

Appendix A.

SYLLABUS OF EVENING CONTINUATION SCHOOL CODE IN COMMERCIAL GEOGRAPHY, ENGLAND AND WALES, 1898.

A good grounding in the physical features of the earth's crust, the variations in climate and in animal and vegetable life should have been received before a scholar enters upon the study of commercial geography, which deals with the geographical distribution of commercial commodities, chiefly food, with raw and manufactured products and minerals, and with various facilities and hindrances to trade.

The full course is divided into three stages, as follows:

Elementary stage.—The British Isles, means of communication and transit by land and by water, the trade routes and facilities for communication with all the more important countries of the world.

Intermediate stage.—One British colony, India, and one foreign country; the commercial relations of each with Great Britain and with other countries as affecting the interests of Great Britain.

Advanced stage.—Some one branch of British trade to be thoroughly studied, commencing with the cultivation or production of the raw material, its distribution, and conveyance, manufacture, markets for finished products, duties and tariffs (if any), competition of other countries.

It is suggested that each country should be dealt with on lines similar to the following:

(1) Position, configuration, and climate, and their influences on the prosperity of the country. (2) Raw productions: (*a*) Mineral, (*b*) vegetable, (*c*) animal: How and where found, how rendered of commercial value, for what used, and price (fluctuant or otherwise). (3) Manufactures and markets therefor. (4) Means of transport and communication (natural and artificial). (5) Exports: Natural or artificial (tariffs) restrictions to the development of trade. (6) Imports: Natural or artificial (tariffs) restrictions to the development of trade. (7) Seaports, river ports, and other commercial towns. (8) Trade routes traversed by British ships bearing imports and exports. (9) Foreign competition encountered by British merchants and extent thereof.

The course should embrace the study of the localities where and the geographical and local conditions under which the various commodities are produced; the means of transit, and the trade routes available, both for inland and for export, together with the distances and ordinary modes of conveyance to important markets; the quantities available for export, and the actual recent rates of export to various countries;

neutral markets and extent of British trade with them; the quantities in demand as imports, and the extent to which this demand is met by various foreign countries; the capacities of countries for commercial development, including both old and new countries; weights and measures, currencies, tariffs, postal and telegraph arrangements, and social and political characteristics likely to affect trade; ports and harbors, light-houses and light-ships, coaling stations. Maps showing the districts producing the more important natural and manufactured commodities should be made use of.

Special maps, showing rivers, canals, railways, cables, steamship, caravan trade routes, and producing districts should be obtained.

It would be helpful if the students were required to draw a series of charts or maps, each of them illustrating some particular characteristic of the country under revision, and on the following lines, showing: (1) Contour of the land, lines of drainage, and particular localities of the river basins. (2) Distribution of mineral products (details can be obtained and filled in from the text-book). (3) Distribution of vegetable products. (4) Distribution of industries. (5) Canal, railway routes, and trade lines. (6) Steamship routes to nearest countries and trade centers, etc., until each characteristic has been so exhausted.

In order that the students may see and examine the real objects spoken of, it is recommended that a well-chosen museum for practical teaching be provided. Where a commodity is being dealt with, it would be well to show it not only in its natural state, but also in the various stages of manipulation to which it is subjected before the useful article is produced. When the exhibition of the object is only imperfect, pictures of the object, with its native surroundings, should be shown.

Appendix B.

CITY OF LIVERPOOL SCHOOL OF COMMERCE.

[Mr. Clarence G. Dyall.]

Geography.—*Commercial.*—General survey of the trade of the United Kingdom, with particular reference to Liverpool. The imports and exports of the United Kingdom, and the areas in which the imports are used and the exports manufactured. Causes determining trade and locality of manufacture. Geography of great commercial products: Cotton, wheat, petroleum, timber, tobacco, wool, etc.; chief countries of production of these articles and their condition; chief countries of consumption. Trade rivalry of other countries with the United Kingdom. Great trade routes and lines of communication, with particular reference to the cheap and rapid transport of wheat, cotton, petroleum, etc., from the place of production to that of consumption.

CHAPTER XXVI.

A REVIEW OF SWEDISH GYMNASTICS.[1]

[By Theodore Hough, Assistant Professor of Biology, Massachusetts Institute of Technology; Instructor in Physiology and Personal Hygiene, Boston Normal School of Gymnastics.]

The term "Swedish Gymnastics" is usually understood to mean, in this country at least, a system of physical training designed to meet certain demands in the education of childhood and youth; and, since the question of its utility is at present largely or chiefly concerned with its use in schools, it will be well to begin our discussion with this phase of the matter.

If it is a function of education to train the growing individual for usefulness in life, physical education must demand attention in any proper scheme of educational work, since the capacity for usefulness is so largely determined by the physical health of the individual. It is perfectly true that we find cases in which, owing to unusual mental power, success has been attained in spite of physical defects and even of moral defects. We see cases where success has similarly been attained because of moral qualities and in spite of very moderate mental power or of physical weakness. But such cases are the exception. If you study great masses of people, you will find that serious defects in physical power are almost certain to hamper life's work. That work may be done, but it involves a severe struggle. In a large percentage of cases it is not done, and life becomes a succession of failures. It is, after all, on the physical man that we build. The leaders in life's activities are almost without exception men of strong physical constitution; a large percentage of the failures are men of weak constitution; and any system of education which impairs physical vigor and leaves men physically unequal to the work of life is unworthy of encouragement,—is, indeed, radically wrong.

The physical condition of health of a human being at any age until growth is completed is the result of a process of physical development. In actual life, Athene does not spring full-fledged from the brow of Jove, nor Venus from the foam of the sea. For 175,200 hours the most varied physiological activities have been at work to make the man or woman of twenty years; and, could we read but deep enough, we could see that the conditions which obtained during each of those hours have contributed their share to the final structure, the health, the possibilities of that living being.

Development, in short, is the result of three factors:

1. *Heredity.*—It is not necessary to attempt a definition of this term. It is the expression of the structure and characters of the fertilized ovum from which all the cells of the body are derived. It gives us the living material upon which we must work in education, and at once determines the possibilities, the limitations, and, to a certain extent, the course of training.

2. *Environments*, both of the body as a whole and of each of its units, the living

[1] This paper was given, practically in its present form, in May, 1899, as a lecture before the students of the Boston Normal School of Gymnastics, and subsequently, in June, 1899, before the physical training conference at Springfield, Mass.

cells. This would include the external conditions of life and the chemical and physical character of the blood. Under it we would include the food supply, the surrounding temperature, clothing, the care of the young by the parents, the hygienic conditions of the dwelling, bathing, and so on.

3. *Activity* of each cell and of the body as a whole. By activity I do not mean simply muscular activity; that is merely the activity of one kind of cell—the muscle fibre. The discharge of a nervous impulse from a nerve cell is a case of similar activity in another kind of cell; the process of secretion is similarly another case of activity in a gland-cell; and so with each kind of cell in the body. Now, we have satisfactory evidence in most cases that the growth of the cell is profoundly influenced by its functional activity and can not be complete without this activity. If a growing muscle fiber never contracts, it can not develop into a healthy adult fiber. A growing nerve cell which never sends an impulse over its axon can not become an efficient nerve cell. A growing pancreas which never secretes pancreatic juice can not grow into a perfect gland. The classical example of this is the failure of the motor cells of the cervical cord to develop when the arm has been amputated about the time of birth. Under such circumstances the nerve cells do not send impulses out over their axons, and accordingly take on characteristic degenerated forms. Moreover, within certain limits the efficiency of an adult cell is proportional to the amount of activity it has had during development. The muscle fiber which has been used is capable of doing work which one which has been used but slightly can never be trained to perform. "You can not teach an old dog new tricks," is one way of saying that the greatest possibilities of training belong to the period of growth, and this is especially true of physical development. We can do for the physical man before the age of 21 what it is absolutely impossible to do between 20 and 60.

The three factors, then, at work in development are heredity, environment, activity. Heredity should determine what education is to attempt and the general course which its operations should follow. Environment demands attention to the hygienic conditions of the home and the school, to clothing, feeding, bathing, etc. The greater part of the work of education, however, is directed toward giving such guidance to the activities of the body, and especially to the volitional activities, as shall produce the best physical, mental, and moral results. Now, if what has already been said be true, it is clear that muscular activity is a necessary factor in the development of the physical man. Not only is it necessary to the proper development of the nervous and muscular systems, but over and above this, in subsequent life health is so intimately dependent on muscular activity, and muscular activity is so hard to maintain in a physically defective body that some sort of physical training must go along with study in youth to make our educational scheme complete.

When we examine farther into the matter, we see that not only does muscular activity play an important part in general in the development of the child, but that different neuro-muscular mechanisms develop best at different periods of life. Accordingly, the muscular activity of the child is directed chiefly toward the development of the mechanisms of accustomed movements, such as those of walking, running, and, in general, of movements which involve the use of large masses of muscles and produce coordination of these muscles. Later, activity takes on more distinctively the character of skilled movements, which cultivate manual dexterity, the more perfect use of language, etc. Going along with these, we naturally find the growth of the more complicated mental processes, this mental development generally, though not always, continuing in full force long after the motor mechanisms are acquired.

Nature, however, does not make the adult man as a machinist does a piece of mechanism, by completing one thing before beginning another, and then, when every part is complete, putting all together into a harmonious whole. The curve of work on each mechanism would overlap the curve of work on other mechanisms, but the maximum points of these curves would be different.

A moment's consideration of the previous discussion brings out clearly the fact that the mental education of the child begins at the time when his physical development is still going on, and that the work of the schoolroom is a direct hindrance to normal physical development. The child must give up his play in order to learn his lessons. He must sit still, and that, too, in what are frequently unsuitable desks, made without reference to the proportions of his body. It is, indeed, very doubtful whether the highest physical development is ever consistent with the best mental training; the boy as he leaves our schools can never be capable of the same endurance that we find among more uncultured peoples who live under otherwise favorable surroundings; nor is there any physiological reason why he should reach such a state of physical development, considering the work which he has to do in life. But it is not necessary that he should leave school with impaired health; it is not even necessary that he should be hollow chested, stoop shouldered; it is not necessary that he should have an awkward carriage; it is not necessary that he should be physically lazy, disinclined to take the very moderate amount of exercise which the maintenance of his health demands.

The mental training of youth, in other words, has introduced an unnatural physical environment, which, if not corrected, will in nine cases out of ten tell upon subsequent bodily health, and so in too many cases upon mental and moral health as well. If no attention were paid to mental training, if our children never went to school, physical training would be for the greater part unnecessary. It is, therefore, one of the main functions of physical education to correct the injurious effects of the unnatural environment created by mental education, and to do this without endangering the efficiency of that mental training.

Such is the starting point of the Swedish system, in common with most other systems. Whether it adopts the correct means or not, it goes to work with the right object in view. Its purpose is not to train athletes, although it may be developed in that direction; it is primarily an attempt to conserve the physical man during his mental training, so that, when the period of schooling is over, he shall have a body physiologically capable of sustaining him in the work of his life.

Not only is its purpose correct, but its general attitude in approaching the practical problems is also correct. Its work, in other words, does not run to doing difficult feats on particular pieces of apparatus; the Swedes claim—and with justice—that they do not adapt their work to apparatus, but their apparatus to their work. Far be it from me to claim that this is a virtue found only in this particular system; but in certain other systems this point is not properly guarded; and in any system corrective exercises, to be effective, must be carried out under the guidance of trained teachers. It is a fact not fully appreciated, even among those who believe in exercise in general, that the best physical development comes from the proper use of very many different movements; that the use of one group of muscles going along with the improper use of other groups of muscles, although for the time being serving the general hygienic purposes of exercise, may produce anatomical results which can only be described as deformities; and that this is especially apt to be the case where movements are improperly executed.

Gymnastics, moreover, as developed in Sweden, has kept in view another matter of very considerable practical importance; it is necessary in our schools that comparatively large numbers of students shall receive physical training at the same time; and it is impossible to avoid this condition entirely, even with the most favorable arrangement of the study schedule. Largely for this reason the use of large and cumbersome apparatus, which occupies an amount of floor space entirely out of proportion to the number of students which it can accommodate, is avoided, and the work is done either by using free standing movements alone or else these with the addition of work on apparatus which can be arranged along the walls or ceiling of the room or can readily be removed, leaving the entire floor clear for the class

drill.[1] The movements chosen at the same time exercise all the muscles of the body and yet can be carried out simultaneously by large classes. Thus we have introduced the gymnastic drill, which is employed not solely for its value as a drill, but because a single instructor can do effective work with a large number of students at the same time. This is a matter of great practical importance. The drill is far superior to individual gymnasium work. This is seen at once if one realizes the fact that if physical training is to accomplish the very desirable end of producing correct proportions, form, and carriage of the body the instructor must be able to observe quickly the work of a large number of students in every movement they make. With ordinary apparatus work, such as is used in most of our gymnasia, this is impossible, because fifty or a hundred different students are each doing a different thing. The drill likewise has the advantage of supplying an incentive to every student to do the movement correctly, in that others are doing the same thing at the same time. For these practical reasons the gymnastic drill, whether with apparatus or without it, is the ideal form of gymnasium work.

We often hear critics sneer at this feature of the system. In a recent article in the American Physical Education Review we read of "that nervously exhausting and deadening drill known as the Swedish gymnastics, which, by the name of educational gymnastics, adds fatigue to fatigue by taking the initiative away from the child and forcing him to pay constant and close attention to the orders of the teacher, that he may execute with precision entirely uninteresting and conventional movements." I have no disposition to underrate the value of spontaneous play in the development of the child. By all means encourage the child to play, and make this a part of the school day. Nor do I advocate undue attention to gymnastic work. I advocate giving only so much of this as is necessary to correct the physical or physiological faults resulting from schoolroom work. Nor do I deny that any drill, any gymnastic work, may be "nervously exhausting and deadening," this depending on the teacher, the main factor upon which the success of all gymnasium work depends; but, granting all this, I must insist that gymnastics, when properly used, can produce advantageous physiological results, which can not be produced by play alone. It does not do to forget the fact that while play will do for a savage or a kitten what we try to do for our school children by gymnastics, the material upon which the factor of play works in these cases has not been subjected to conditions which actively produce deformities or deficiencies. Superintendent Seaver well stated the purpose of school gymnastics as the antidote of the school desk. Take the most common example, that of stoop shoulders and contracted chest. Will it be claimed that these can be corrected by spontaneous play alone? Personally I have seen too many cases which could not be brought into agreement with such a theory to allow me to accept it, and even in many cases where play exerts a corrective influence the same results can be more surely and more economically accomplished by gymnastics. And we deny absolutely that gymnastics need be a bore.

The last paragraph indicates the position of Swedish gymnastics in physical training, and this must not be lost sight of by those who would understand it. It will be more fully shown in later parts of this paper that physical training presents two distinct although not mutually exclusive sides—the general hygienic and the corrective. While Swedish work gives to a very considerable extent the general hygienic effects of exercise, it is primarily concerned with the corrective side; and it may be well to define clearly at this point what is meant by corrective gymnastics. The effects of the physically specialized life of the school, and, indeed, of most forms of specialization, manifest themselves in two ways—in anatomical changes and in awkwardness or peculiarity of movement of the body as a whole. Strictly speaking, the

[1] The word drill is always used in this paper in a sense similar to its use in military drill, and never in the sense in which it is frequently employed in the literature of gymnastics, where it means a definite series of movements performed in unison by a class, as, for example, in a "dumb-bell drill."

term "corrective" should be used only with reference to that gymnastic work which attempts to remove anatomical and physiological faults. In point of fact, the exercises which are used to do this are essentially the same as those used to prevent the same faults, and no hard and fast line can be drawn between remedial and preventive gymnastics. It is therefore convenient to include the two under the single term corrective, which is thus used in this paper. It will subsequently be shown how gymnastics can have this corrective effect.

The most distinctive feature of Swedish work is the fact that it never loses sight of the corrective element. This is its primary purpose. Gymnastic movements which, though graceful in themselves, have a marked tendency to produce some anatomical fault are rigorously excluded. Even those which, though not open to this criticism, only result in the ability to do some gymnasium trick of little or no use in practical life are relegated to a subordinate place. The basis of training of its teachers is kinesiology. The anatomy of the skeleton—the joints and the muscles—is studied most carefully, not, as Du Bois-Reymond would have us believe, in order that the pupil may be conscious of what particular muscle he is contracting, but because it furnishes the only means of understanding the effect of a definite movement on the skeletal parts, and so of estimating its corrective value. Such study is for the preparation of the teacher, not for the pupil of the gymnasium floor. It is not even necessary that the teacher should think of the kinesiology of a movement at the time he gives a command, but his use of a certain movement should ultimately, consciously or unconsciously, rest on this basis.

This characteristic of Swedish work is at once its greatest strength and its greatest weakness. It is its greatest strength because no other physical trainers can show such theoretical knowledge of kinesiology or such successful practical application of that knowledge in corrective work. The Swedes have worked out this part of the subject with singleness of purpose, and they have made the field their own. On the other hand, it is its greatest weakness. At times individual teachers have forgotten that corrective work is not the whole of physical training. It has been pushed to a needless extent and at times to the exclusion of outdoor work, which is more attractive and which also produces an amount of endurance which indoor corrective work can not. Nor can there be any doubt that these corrective exercises have at times been given in a manner that strongly suggests an operation in orthopedic surgery without anæsthetics. There is a right way and a wrong way of doing all things, and it would be strange indeed if some teachers had not taken the wrong way and failed to infuse into their work that personal element of interest and enthusiasm upon which its success very largely depends. I will even go farther and say that there are few fields which offer such opportunities for the successful exercise of all the qualities of a bore as does that of Swedish gymnastics. This follows from the fact that it is systematic, and anything systematic is peculiarly liable to such abuse. But this is no valid argument against the use of the system. Is it a valid argument against the study of the English language and literature that so many of its teachers do most fearfully and wonderfully bore their pupils with it?

Having dealt with these more general features of the problem, we may now pass to the consideration of these which have to do with the system itself. And, first, let us say that the Swedes are right in having a system. The "day's order" is the point of most attacks. Some critics seem utterly unable to understand that anything systematic should be anything but monotonous, and so it would be were each day's work like that of each preceding day. The "day's order," however, involves no such idea. Apart from the fact that, as the pupils work more and more in the gymnasium, new exercises are introduced—a thing not easily done, by the way, with large numbers in the ordinary apparatus work—the "order" only affects the general classes of movements, and within each class of span bend, heave, back, abdominal movements a very large amount of variety is possible, and, in point of fact, is util-

ized in the work of different days. There can be no doubt that a poor teacher can make a Swedish drill an insufferable bore; but a poor teacher can make anything a bore, and usually does so.

One of the main points of physiological interest is the matter of progression, as seen from day to day and in the day's order itself. As to the former, all must agree that in any course of training one should begin with simpler work, and as the body improves in physical condition more and more difficult work should be attempted. This is the essence of training. The heart, the vaso-motor system, the respiratory system, the mechanism of heat regulation, and the nervous coordination of the more fundamental positions and movements must all be trained by use to work together. Pupils can do the more difficult exercises properly only as they have become fitted to do them by having experienced the benefits of simpler work. It is not my purpose to show how the Swedish system does this, as I am not aware that anyone has denied that it is capable of any degree of refinement in this kind of progression. I shall linger long enough on the subject only to say that any system of physical instruction should make clear the necessity of this factor of training if the greatest benefits are to be obtained from muscular exercise at any time of life. Many a man loudly, but ignorantly, proclaims that exercise does not benefit him, simply because he began with a 50-mile bicycle ride or a hard bit of mountain climbing.

Coming to the second kind of progression, the day's order itself, let us say again that, even if the particular sequence of movements adopted is not required by the nature of the case, it is better in general that the majority of teachers shall have some system to guide their work. It is putting it very mildly to say that very few teachers of gymnastics will ever have that commanding genius which will enable them to conduct classes upon the basis of general knowledge of muscular exercise; few even have that originality which would enable them to work out for themselves a rational method of work in physical training. Even if there were no system each teacher would inevitably evolve one. In other words, most teachers would soon fall into certain ruts; and it is simply a question whether you are going to have a system which represents the ruts into which the individual mind has more or less unconsciously fallen or a system which is the result of organized effort, both on the theoretical and on the practical side, for many years. In other words, the work of the teacher of gymnastics is the practice of an art, and it is obviously better that accumulated experience should form the basis of work, even though we grant at the same time that every effort should be put forth to encourage independence and originality.

The Swedes insist that their system is based on correct physiological principles. This may or may not be true. Advocates of the system should, however, avoid making the statement that, as a matter of history, it was deduced from the physiology of the human body. The fact is that the Swedish system of gymnastics was for the most part developed to its present form before modern physiology was more than in its infancy. Ling died in 1839, and it was not until 1860 or 1870 that the several discoveries of physiology began to be coordinated into a satisfactory body of scientific knowledge. No doubt Ling and his successors made good use of the physiological knowledge they possessed; no doubt they constantly endeavored to work from physiological knowledge as a starting point; no doubt they subjected their work to the best physiological criticism they could give it, and no doubt a great deal of this was good physiology and produced good results. But, granting all this, it is not wise to claim that the system was deduced from physiology. It is an art; and whatever use may have been made of pure science in its development, yet if it is successful that success is quite sure to be due to practical experience of results—the true test of any art which deals with the human body. A bridge can be built on the basis of scientific knowledge alone, but only because we know all about its parts and can calculate exactly what each one can do. It is quite conceivable that a civil engineer should design a new kind of bridge which introduces entirely new features for sustaining the

weight, and yet know beforehand that the structure will do exactly what he expects of it. That is one of the highest triumphs of exact science. But the science of the workings of the human body, or physiology, has not yet reached such a degree of exactness. Much less had it reached it in Ling's day. It is with gymnastics as it is with medicine. Physiology suggests, and often its suggestions are correct. It aids in interpreting results, and so may be an indispensable aid; but, after all, a physician does a certain thing because he has done it before and found that it produced the effect he desired. And the practical teacher of gymnastics gives certain movements because—although what he knows of physiology may have suggested them, and although he feels more confident in using them—because he believes they are physiologically correct; yet, after all, he uses them because he has tried them in the past and found that they work. And if the Swedish system is worthy of confidence as a practical method it is because it rests ultimately on this basis.

I have spent the time I have in emphasizing this point because I know that incorrect physiological claims have been made in support of certain things done. Various writers present us a body of so-called physiological knowledge which, to say the least, does not commend itself to physiologists; and I may as well tell you frankly that if an uncandid opponent of the system should desire to make fun of it he would find ample occasion for doing so in many of the physiological statements which have been given in explanation of its day's order. I have seen this done myself, and that with most pronounced success.

But anyone who should make this a reason for rejecting the system in part or in whole would only advertise his own lack of common sense. The Swedish system of gymnastics, like every other system, is not what is written in books, but what is practiced on the floor of a gymnasium. As I have said, it is an art which has been developed with a certain end in view, and is built upon practical experience of results. If good results are achieved, the system is sure to rest to that extent on a sound physiological basis.

Now, the Swedish system does achieve good results. Comparison of the entering junior and the graduating senior classes of this school proves this—not a comparison of the two classes during the drill hour in the gymnasium, but more especially off the gymnasium floor; and I have never seen it questioned that the results obtained in Sweden are eminently satisfactory, at least from the point of view of corrective work. What, then, are the strong points of the system which enable it to produce its physiological effects?

1. Every group of muscles in the body is given its appropriate functional activity. We have thus produced the effects of use upon these muscles and upon the nerve cells which innervate them. The various neuro-muscular mechanisms become more perfect machines, capable of doing the work demanded of them at any time. In connection with this, valuable secondary effects are produced upon other organs, such as the aid to peristalsis with abdominal movements, the increased efficiency of the respiratory mechanism, etc.

2. Closely connected with this is the correction of faults of posture by properly chosen contractions of the various groups of muscles in the body. The muscles adapt themselves to the work of the skeleton and the skeleton adapts itself to the work of the muscles. Thus the dorsal muscles of the neck will lengthen and the ventral muscles shorten when the weight of the head is allowed to bend the neck forward. When the pectoral muscles are exclusively used and the pull they exert on the shoulders is not corrected by contractions of the muscles of the back the latter group of muscles lengthen, while origin and insertion of the pectorals come closer together. The result is round shoulders, the skeletal parts accommodating themselves more or less to this condition. When the erect posture is not carefully maintained and improper curvatures of the spine result the antagonistic muscles and ligaments of the spinal column likewise accommodate themselves to the changed condition, those on

the concave side growing shorter and those on the convex side growing longer. Consideration of these deformities show that they are produced in two ways—by improper positions and by the use of one set of muscles with concomitant disuse of their antagonists. In both cases one set of muscles becomes longer—i. e., origin and insertion come to lie farther apart; while the other becomes shorter—i. e., origin and insertion come to lie closer together.

The trouble is corrected, first, by such work as will passively stretch the shortened muscles and ligaments; in response to which stretching they lengthen. Thus the correction of the fault of round shoulders begins with the stretching of the pectoral muscles by contractions of the back muscles or by other means. In addition to this, we must strengthen by use the muscles whose antagonistic play maintains the proper relation of the skeletal parts, the purpose of this obviously being to make such muscles sustain the continuous contraction demanded of them without undue fatigue.[1] Mere difference in the strength of antagonistic muscles will not of itself produce skeletal deformity. Such deformity is apt to result, however, when this difference of strength goes to the extent that one group of muscles is too weak to sustain efficiently the work demanded of them. When they fatigue in this way exactly the same thing happens as in a "tug of war," when the greater fatigue of one side gives the victory to the other. These considerations also make it clear that, where both antagonistic muscles are too weak and consequently relax their support to such skeletal structures as the vertebral column, skeletal deformities may result even when the muscles in question are of equal strength. Undoubtedly many cases of improper curvature of the spine have their origin in this cause.

Whether or not this is the complete physiological explanation, there can be no doubt that such deformities, when not too grave, can be corrected in the manner indicated, and it is in this field that gymnastic work in our schools does what play alone can not do. When, for example, stooped shoulders have been acquired by faulty position, spontaneous play gives no stimulus to bring about that contraction of back muscles which will correct the fault. Indeed, in many cases play only accentuates the fault, because of the natural tendency to use the stronger muscles and to disuse the weaker ones. This must be especially true of unregulated play, and even with supervision attention can not in general be given to the manner in which a movement is made. Play is therefore not a practical method of corrective work.

3. The work not only trains the neuro-muscular mechanisms of isolated movements to a high degree of efficiency, but also trains these mechanisms to work together. In other words, it trains the power of nervous coordination of movements. Just as the separate cells of the body become more efficient by being used, so these cells learn, as it were, to work together by performing as accurately as possible those movements which call for their cooperation. Hence the stress which is laid upon balance movements and also upon the proper execution of movements involving considerable coordination. Awkwardness is for the most part only another name for the bad habits formed by doing things in the wrong way. It is avoided or corrected by doing them in the right way.

Every effort is made, moreover, to facilitate this correct performance of more or less complicated movements, and it is partly for this reason that the element of undue fatigue is avoided. The same rule is insisted upon in one of our most successful methods of language study. The lesson must not exceed fifteen or twenty

[1] Not only does a fatigued muscle exert a less powerful pull than a fresh muscle, but the feeling of effort under these conditions becomes an unreliable indication of the amount of work done. If a dynamometer be arranged so as to record the work done at every moment of the effort and not merely the maximum pull, it is found that toward the last, when every effort is being made, and, to judge from our feelings, with more or less success, to add one pound more to the record, in point of fact the muscle is not doing half the work it did at first; and when we remember what an important part these afferent impulses of the "muscular sense" must play in guiding the work of the antagonistic muscles which maintain proper position it at once becomes clear what a difference it makes whether or not we rely for such work upon muscles which are strong enough to sustain it.

minutes, and must be interrupted as soon as fatigue shows itself. The correct idiomatic use of the language is acquired by the correct repetition of the idioms of the language, i. e., by the acquisition of habits which can be acquired only by correct use. To attempt to speak these idioms when one is fatigued with previous study means that a large percentage of them will be incorrectly given, with the result that, if bad habits are not acquired, the mental path of easiest conduction for the correct habit is no longer the clear and unmistakable one it should be. Precisely the same thing is true of what may be called the grosser movements of the body. To do them correctly is to blaze a clear and unmistakable trail of nervous conduction. To do them incorrectly is to confuse that trail with misleading signs, which must be unlearned.

A very striking feature of the highly coordinated movements used in the Swedish gymnastics is the fact that so many of them are performed with one or both feet on the ground and supporting the weight of the body. Such is the case with all balance movements. The significance of this is at once seen when it is remembered that it is exactly this coordination which is of greatest use in everyday life. An equally great sum total of coordination is required by the more difficult feats on the horizontal or parallel bars or the trapeze, but the skill thus acquired is useful, for the greater part, only in the performance of similar tricks on such pieces of apparatus. I can personally recall cases of men who were most excellent athletes of this kind and yet whose gait was anything but graceful. Now it is a legitimate demand on any gymnastic training in schools that it shall produce not only correct proportions of the body at rest, but also graceful carriage of the body in locomotion; and the principle of training by use shows us clearly that this is to be accomplished chiefly by the use of movements and positions in which, the weight of the body being supported on the feet, equilibrium must be maintained in difficult positions.

4. The need for training to do the more difficult work is kept in view. Students attempt particular movements only as they are provided with the proper physiological agents therefor by previous work. The exercises, in other words, progress from the simpler to the more difficult, and are so chosen that the former directly prepare for the latter. No other work compares with the Swedish in this respect.

5. Full and free respiration is always insisted upon. In many forms of physical exertion there is a tendency to diminish, or even suppress entirely for a time, the respiratory movements. At times, of course, this is absolutely necessary, as when, in lifting heavy weights by the arms, the thorax must be made rigid to assure a firm point of origin for the working muscles. The condition is even then, however, objectionable from the standpoint of the organism as a whole. Probably one of the chief benefits of muscular exercise is brought about through the accompanying increase in the breathing movements. We can not at present positively affirm or deny that this is because of the increased amount of oxygen taken to the tissues,[1] although such an

[1] We have good reason to believe that merely increasing the ventilation of the lungs does not increase the percentage of oxygen in the blood, nor the amount taken up by the tissues. The tissues do not take more oxygen because more enters the lungs. On the contrary, their consumption of oxygen is conditioned upon the amount of chemical change taking place in them, and this in turn is largely dependent upon their work. It is almost certainly, moreover, a mistake to assume that during muscular exercise all cells of the body profit by a quickened circulation and a more ready access to oxygen. The percentage of oxygen in arterial blood being practically constant, the amount of oxygen offered any organ will be determined by the amount of blood flowing through it and not by the ventilation of the lungs; indeed, we know that in general the blood supply to internal organs is distinctly diminished during muscular exercise, in order to compensate for the increased supply to the muscles and the skin. Whenever there is an increased amount of blood flowing through an organ, more oxygen will, it is true, be offered to its cells, but it will be taken up by them only as their chemical processes call for it. We have, moreover, good reason to think that the mechanism of respiration, including the heart, provides, under ordinary conditions, far more oxygen than even the working tissue can use. The blood leaving an organ frequently, if not generally, has half the oxygen with which it entered the organ; and this remains true even when the organ is working, the increased blood flow being more than sufficient to compensate for the increased consumption of oxygen.

explanation is frequently given with an assurance which betrays complete ignorance of some well-known physiological literature. It must be remembered, however, that the respiratory movements produce other effects upon the organism than ventilation of the lungs. They aid in the return of blood to the heart and they are an important factor, if not the most important factor, in causing the flow of lymph in the lymphatics. Thus their increase during muscular exercise aids the heart at a time when it is apt to be overworked and increases largely the flow of lymph, not from the working organs alone, but from all organs of the body. This is not the place to describe the physiological importance of the lymph flow. Let it suffice to say that there is good reason to believe that a good, steady lymph flow from an organ is an important condition of its healthy nutrition and that the increase of lymph flow from all organs of the body brought about through the increased respiratory movements is one of the chief agents through which muscular exercise favorably affects the body as a whole.

It is therefore quite conceivable that the breathing movements may be sufficient to supply all the oxygen needed for muscular work and to remove the large amounts of carbon dioxide produced thereby, and yet not be the aid to the circulation of blood nor to the flow of lymph that they should be; and, if this be true, it is a proper function of physical training to train the power of full and free respiration under all possible conditions. It is a matter of common experience that there is a marked tendency to insufficient respiration whenever work presents the least element of effort. I have seen this frequently among bicyclists in going up even slight inclines; they seem to put all their energy into volitional muscular contractions and to have little left for respiration; respiration is, as it were, held in abeyance until the effort is over, and then they must stop to "puff and blow." Now, it is just as easy—nay, easier—to maintain full and deep respiratory movements during the performance of most work, and when this is done there is less of subsequent fatigue. Moreover, as I have attempted to show, the general hygienic effects of the exercise are most probably enhanced by this deep breathing. It would, indeed, seem that all considerations point to the advisability of gymnastic training cultivating the habit of deep breathing; and whether the Swedes give the correct reason for the practice or not, it is a fact that its importance is everywhere recognized in their practical work. The mobility of the ribs is kept at its maximum, the capacity of the thorax is enlarged where that is possible or advisable, while the special respiratory exercises do their part in training the breathing mechanism to the full measure of its working capacity.

6. The carrying out of definite movements with accuracy and precision is a training in volitional control. It increases the efficiency of the mechanism of skilled movements. One who has had such training in carrying out great numbers of movements at the word of command can do with the muscles what it is unlikely that he would be able to do otherwise. The body becomes more "supple," which means largely that the number of its possible movements is largely increased, or, more correctly expressed, the number of its possible movements is not reduced as life advances, and we tend to limit the movements of the body to the few which some sedentary occupation calls for. It prevents the narrowing of the field of volitional control, and it is especially important that the field of volitional control shall not be narrowed during the period of development.

To prevent any misconception, it may be well to state clearly that this increase of volitional control does not mean that a person can at once perform some new kind of work as well as those who have become accustomed to that work by long practice. Almost all special kinds of work involve the more or less constant use of certain groups of muscles, or else, as in swimming or rowing, they involve the acquisition by practice of a coordinated nervous mechanism of accustomed movements. A man with such complete volitional control will have to strengthen still more the muscles

which rowing, for example, involves; he will also have to acquire the nervous mechanism of the movement, but he can learn to row accurately and easily sooner and with less expenditure of effort than can a man without such volitional control.

This effect is of psychological importance. Health depends on exercise, and whether we are inclined to take exercise or not depends partly on the use we can make of our bodies. Exercise is necessarily monotonous to the man who has but few muscles to use, few movements to make. There is an impulse to take the exercise that health demands when the individual has the conscious power which comes from volitional control of many movements. In other words, there is a love of movement, natural to the child, and a priceless possession from the hygienic point of view to the adult, which we should never allow to slip away from us.

7. In a later portion of this paper we shall have occasion to discuss the relations to each other of the two purposes of physical training, corrective work, and the general hygienic effects of exercise, as well as the extent to which the day's order fulfills the latter purpose. We may here anticipate these discussions, however, merely to say that Swedish gymnastics, properly done, produce in a high degree those general effects of exercise which favorably affect the health of the organism as a whole.

I must not be understood as saying that each of the above seven objects is accomplished only by Swedish gymnastics. Some of them are distinctive, while others are not. The essential characteristic of Swedish work is that it aims at and secures in a remarkable degree all these results; and I believe that the secret of its success is to be sought here rather than in minor details of the "day's order," which is simply the practical method adopted of achieving these physiological ends.

The exact form of the "day's order" is not simply the expression of a physiological idea. Certain things are done because they are not the most feasible under given conditions. Moreover, in gymnasium work there is a psychical as well as a purely physiological element; and nothing can be worse than to neglect this in practice. A class is not put directly to executing back or lateral trunk movements; the effect of such a course upon the interest of the class in its work had better be left to the imagination. It is, moreover, only partly for physiological reasons that each movement is given at the time when it can best be performed or least interfere, by introducing the element of fatigue or otherwise, with the proper execution of other movements. Any explanation of the work must therefore take account of other considerations than those which are purely physiological.

The exercises of the day's order may be classified as follows:

1. Introductory movements, which include order movements and movements of the extremities.
2. Span-bending movements.
3. Heave movements.
4. Balance movements.
5. Back movements.
6. Abdominal movements.
7. Lateral trunk movements.
8. Running, jumping, vaulting, and games.
9. Slow-leg and respiratory movements.

The common nomenclature is retained as far as possible, although certain objections may be made to it. Indeed, the names are denotative rather than connotative; and so long as this is understood there is but little objection to the use of the common terms. I have, however, dropped the old term "leg movements" and substituted therefor the more accurate term, "movements of the extremities." The old term is not only misleading, but is associated with certain very questionable physiological explanations, and should be abandoned.

Postponing for the moment the description of these classes of movements and the

reasons for their sequence, we may classify the exercises of the "day's order" from the physiological point of view as follows:

1. Activities of limited motor mechanisms
   - Span bending.
   - Heave.
   - Back.
   - Abdominal.
2. Activities involving a high degree of general coordination
   - Lateral trunk.
   - Extremities.
   - Balance.
3. General bodily activities of considerable intensity
   - Vaulting.
   - Jumping.
   - Running.
   - Games.

The order movements have been omitted from this classification because they are not of physiological importance; likewise the slow-leg and respiratory movements, because of the very special function for which they are used. The purpose of the first group is to correct or prevent deformities; of the second, to give ease and grace of carriage; of the third, to produce as far as possible the general hygienic effects of exercise. Finally, the three groups overlap to a very considerable extent.

The term activity is used to emphasize the fact that it is not simply the muscles which are being trained, but the nervous system as well. Indeed, it is more than this, for still other organs, notably those of the vascular and respiratory systems, take part in such muscular work.

The course of the day's order and the reasons for using each kind of movement at its particular time may then be given as follows:

1. *Introductory exercises.*—Included under this head are a great number of movements which have previously been classified under order movements and leg movements. The term "order movements" really denotes the purpose rather than the character of the movement. They have been described as "intended to attract the minds of the pupils to the approaching gymnastic work; to induce them to assume that fundamental position and carriage best suited to the physiological interests of the body, from which other gymnastic movements start and to which they return before a relaxed position of rest is assured." There can be no question that a large number of exercises do actually serve this purpose, and that the ordinary drill begins with them; and I can see no objection to the continued use of this term to indicate the purpose of many of the introductory commands of the day's order. On the other hand, as has been pointed out, the term does not describe the character of the movement as do the others; nor do order movements constitute a well-defined class of exercises. To the term "leg movements" I have two objections—it gives a false impression of the real character of the work, and it is connected historically with what is quite indefensible physiology. With regard to the latter objection, I have no intention of discussing the point here. The purpose of this paper is not to discuss what has been written about the Swedish system, but to describe what it is in actual practice on the floor of the gymnasium. I shall therefore confine myself to the statement of what is done during this part of the day's order, and the physiological results achieved thereby. As to the former objection, while it is perfectly true that leg movements are used and form a large percentage of the work done, yet it is also true that movements of the neck, shoulder, and arm are used often simultaneously with those of the legs. The former have no doubt been regarded as order movements, and, as used, serve this purpose; but they serve other purposes as well. The stretching of the shoulder muscles, for example, which is the most prominent characteristic of the various "arm extensions," has a very important corrective effect upon the form of the shoulder region; and while it may be claimed that this is included in the statement about order movements that "they are intended to induce the pupils to assume that carriage best suited to the physiological interests of the body," yet

we should then be compelled to include in the same category span-bend, heave, and back movements—in short, all activities of limited mechanisms which correct faults of posture and carriage. Moreover, these leg movements would then not form, as a matter of sequence, a separate class from order movements; and, finally, the movements of the upper extremities play their part—and a very considerable part it is—in the redistribution of blood, which has been improperly attributed to leg movements alone.

It seems to me that we should describe more accurately what is done by grouping both under the head of introductory exercises, which have two objects in view—first, to serve the general purpose of order movements; and, secondly, by calling into use the largest muscular masses of the body, to produce, without undue fatigue, some of the most important results of muscular exercise, among which may be especially noted a marked redistribution of the blood, more going to the working muscles and the skin and less to abdominal organs. Such work is not so specialized as that which immediately follows, and for this reason is most suitable for beginning the lesson. Incidentally it serves corrective purposes, both in the training of simpler motor mechanisms and also to some extent in coordination.

2. *Span-bending movements*, which consist of certain backward flexions of the trunk which have the effect of straightening the thoracic region of the spine, of vaulting the chest forward, and of increasing the chest capacity and mobility of the ribs.

3. *Heave movements*, which consist of various exercises in a hanging position and others which have the effect of expanding the upper part of the chest by lifting it upward. Incidentally, they also develop the arms and upper trunk muscles. Heave movements follow span-bending movements, because they are more vigorous in character; and it is claimed that, as a matter of experience, they are apt to produce a certain amount of soreness in the abdominal muscles, which is for the most part avoided if they are preceded by span-bending movements.

In these first three movements a considerable amount of work has been done, the intensity of the work increasing to a maximum in the heave movements. This work involves—indeed, is the result—of katabolic muscular changes which produce heat and discharge on the lymph and blood large quantities of waste substances. The body reacts to these conditions, and the general physiological results of exercise follow. These are directed primarily to getting rid of waste products; incidentally, they provide food and oxygen for the anabolic processes which at once begin to make good the loss of muscular fuel substance. In order to get rid of the heat, the cutaneous arterioles dilate, and the secretion of perspiration is greatly increased; these agents are aided by the increased volume of air heated in the lungs and the increased evaporation of water from the surfaces of the respiratory tract. The temperature of the blood rises slightly, though perhaps not more than a degree centigrade. In order to get rid of the carbon dioxide, the breathing movements and the rate of the heart beat are increased; the circulation through the lungs is consequently quickened, but it is a mistake to assume that the amount of blood flowing through all organs of the body is increased. In point of fact, the arterioles of the intestine, the kidney, and probably the liver and spleen, constrict, thus diminishing the blood flow through them. It is probable, though not proved, that the blood flow through the brain is usually somewhat increased, though at times it may be unchanged or even diminished. In all these vascular changes the cardiac, the vasoconstrictor, the vasodilator centers work together, so as to maintain the aortic pressure at the normal height or somewhat above it. The pumping action of the contracting muscles aids in the flow of blood and lymph away from them; and the augmented respiratory movements, by increasing the aspiration of the thorax, aids the return of blood and lymph from all organs. Especially important is this effect upon the lymph flow, since an increased lymph flow from an organ means increased circulation of lymph in the tissue spaces around the cells, and hence a more equal and rapid distribution

over the surface of the cell of the food material and oxygen derived from the capillaries, and a more effective return of waste products to the capillary wall for removal. Other organs are thrown into activity to complete the oxidation of certain katabolic products of muscular activity; and the presence of an increased amount of some of these products in the blood changes the chemical character of the blood, and so the environment of all cells of the body. It is, moreover, not improbable that, so long as these are not present in excessive amounts, the changes thus produced may favor the healthy life of other cells; muscular activity would, from this point of view, produce an internal secretion; but the matter needs further experimental study.

These are the general physiological effects of all muscular exercise, and their amount is proportional to the intensity of the exercise taken. It is to them that the "freshening" effects of exercise are due. The movements of the extremities, span-bend movements, and heave movements, therefore, in addition to the special corrective function which each performs, by calling into play large groups of muscles, serve the additional purpose of "freshening up" the class without producing such fatigue as may interfere with the proper execution of subsequent coordinative or corrective movements; and it is only after these are given that the general physiological effects are pushed to their maximum point of intensity in vaulting, jumping, running, and games.

In accordance with this plan we now pass to—

4. *Balance movements*, "which bring about a coordination of muscular contraction in all parts of the body, and by demanding equilibrium in difficult positions train the sense of correct and graceful posture." Movements of the extremities, back and lateral trunk movements, and others involve coordination of muscular contraction in all parts of the body, and hence are to that extent balance movements. The training of the sense of equilibrium, in other words, is not confined to this part of the day's order, but is merely its chief feature and special purpose.

Balance movements are introduced at this time for several reasons. They make an agreeable change in the nature of the work, which in the immediately preceding movements has been confined to activities of limited motor mechanisms; since more of these follow in the various trunk movements, a certain amount of monotony in the general character of the work is avoided. Moreover, no muscles important in maintaining equilibrium on the feet have been worked very hard; and hence, in the absence of local and general fatigue, finer coordinative work can be executed. Finally, balance movements throw most work on the leg muscles, and hence to a certain extent rest the trunk, which, having been concerned in heave movements, has still to perform those movements which involve the various flexions of the spinal column. When the various balance movements have once been learned, they are profitably introduced elsewhere, and especially where fatigue is present; their use in that case trains still more the sense of equilibrium in difficult positions. It is clear, however, that they should first be learned under the most favorable conditions before being used under unfavorable conditions.

The previous corrective movements of limited motor mechanisms have to deal with muscles which act upon the upper ribs or with their immediate antagonists. After balance movements we pass to a group—(5) back, (6) abdominal, and (7) lateral trunk movements, which produce flexions of the spine (dorsal, ventral, and lateral). Such movements not only train the use of the muscles concerned, but are also the chief means of correcting and preventing faults in the growth of the spine. This is especially true of back movements, which also correct the carriage of the shoulder blades. In addition to this, abdominal and lateral trunk movements, "by alternating increase and decrease of abdominal pressure, favorably affect the work of the digestive organs.

The comparatively short space devoted to the description of these three classes of

movements does not indicate their relative importance in the day's order. In point of fact, they are surpassed by no other class in corrective value. Through them we secure correct carriage of the trunk, depending, as this does, upon the proper play of the great groups of antagonistic muscles especially concerned in and strengthened by such movements; and it is the weakening of these muscles through disuse which is the chief cause of the tendency to "slump," against which a recent magazine editorial enters a timely protest, as being all too characteristic of American life.

The order in which they are given is, for the most part, immaterial.

8. *Vaulting, jumping, running, and games.*—These exercises at the same time command a high degree of coordinated muscular action and constitute the most severe work of the day's order. The previous balance movements train the sense of what has been called "statical" equilibrium, or equilibrium of the body at rest. Vaulting and jumping, on the other hand, train the sense of "dynamical" equilibrium, or equilibrium of the body in motion, and in this case of motion which involves considerable muscular work.

It is hardly necessary to add that they are not features peculiar to Swedish gymnastics, and that they serve the same purpose, no matter by whom used. They form, in fact, an indispensable part of all gymnastic training. The greatest stress, however, should be laid on the proper execution of the movements. It is not, for instance, the height of the jump which is of importance, but the way in which it is carried out and the proper landing which follows. In addition to the coordinative value of these movements, they, together with running and games, involve rather intense physical work, and produce in the highest degree the general physiological effects of muscular exercise already described. These effects are allowed to "approach, but never to exceed, the limit where breathlessness in its graver form sets in."

9. *Slow-leg and respiratory movements.*—It is a well-known fact that on stopping suddenly any very vigorous exercise certain disagreeable symptoms are apt to result. These are characterized by a very evident heart beat, at times grave breathlessness, and feelings of fulness about the head, in which the throbbing of the pulse can often be distinctly felt. These symptoms are most pronounced immediately upon stopping—at least it is at that time that they most affect consciousness. For the present it is sufficient to understand that at times symptoms of distress follow exercise, and that in practically all cases which do not involve actual exhaustion the symptoms are much less pronounced—so far, at least, as consciousness is concerned—if we do not stop at once, but gradually pass from the more intense work through less intense forms to rest. This is a recognized practice in the care of horses. No jockey is allowed to stop a horse immediately after the finish of a race, and it is hard to believe that the popular impression that such a course is more or less apt to produce temporary or permanent injury to the animal is entirely without basis in fact. It can not be said that all severe work is sure to be followed by symptoms of distress, nor need we be surprised to find that these symptoms may or may not appear under what seem at first sight identical conditions. In a class of 20 people perhaps not more than half would show marked distress after a given run, for the simple reason that the same work may be severe to one and easy to another; and in the same individual the same work may be severe one day and easy the next. But, granting all this, it would seem a safe course to avoid this distress as far as possible; we do not know that it is always harmful; but it looks suspicious, and we certainly do not know that it is never harmful. The history of many pathological conditions of the heart and the circulation points too clearly to excessive muscular work as having to do with their causation to justify us in ignoring any warning that may accompany such work. It is for this reason that the severe exercises of the day are immediately followed by slow leg movements (such as comparatively rapid marching), accompanied or followed by respiratory movements. The reason usually given for this—

that "the accelerated action of the heart must be normalized" and "free respiration restored"—is unsatisfactory. The accelerated heart action will, in point of fact, come back to the normal if the organism be left to itself, and free respiration will also be restored. It seems much more accurate to say that these movements afford very great assistance to the heart in maintaining an efficient circulation. They thus prevent distress, and hence, no doubt, danger, while the organism is adjusting itself to the changed conditions of rest.

As I have said, it can not be claimed that these movements are necessary in all cases. They are probably unnecessary, for example, in very strong individuals, in whom vigorous work does not produce the cardiac acceleration seen in those not so strong; but they are advisable with the majority of people and probably necessary with a large number. It must not be forgotten that the mission of gymnastics is not primarily to the athlete, nor is its chief purpose the training of athletes. In accomplishing the purposes of physical training outlined in the beginning of this paper we have no reason to believe that the cultivation of great strength is necessary, nor, in view of the conditions of life among people to-day, is it desirable. The athlete is as much a specialist as the student of Sanskrit literature; and the great muscular strength and bodily endurance under physical strain which is his specialty is no more necessary for the health of the business man or student than is a thorough training in astronomy or physics to the athlete as such. I am convinced that it is a mistake to attempt to cultivate a healthy sentiment for rational physical training among people generally by means of the athletic ideal alone. So far from encouraging the rational use of exercise by all, it certainly at times tends to discourage it, simply because the ideal is unattainable to the vast majority of men, and it is entirely out of place among women. The Swedes have avoided this error successfully. Without discouraging athletics they recognize that the athlete is a specialist and that there is a physical training needed by all classes—by people who can never be athletes, the vast majority of whom react less rapidly and less perfectly to sudden changes in the state of the body as regards muscular activity than do those trained to the highest degree of physical endurance. Hence it is advisable with drill work with large classes "to warm up" to the more intense work more or less gradually, and not to pass immediately from this to rest.

Any account of the day's order fails to do it justice which does not emphasize the element of progression so skillfully carried out. In each group of movements the student passes to those requiring greater coordination and greater strength only after he can do simpler movements involving the same general groups of muscles. This is merely the principle of training, but nowhere is more attention given to it than in the system we are considering. Compare it, for example, with the method of giving directions to individual students for the use of apparatus for the next three or four months, and then giving new directions for more difficult work only after that time. The Swedish drill can stand this comparison and should invite it, for it is clear that only in drill work can any proper system of daily progression be carried out successfully in large classes; and daily progression in large classes is a thing which, it seems to me, we have a right to demand of any gymnastic work which professes to be physiologically correct and practically available.

The mere recount of these groups of movements of the day's order certainly sounds uninteresting enough. In point of fact, it is only the skeleton upon which the system is built, and no more describes a day's drill with a good teacher than does the human skeleton betray the life of the human body. I have already said that a poor teacher can make a Swedish drill an insufferable bore. In fact, the ability to make gymnasium work attractive and interesting is absolutely necessary to anyone who is to undertake that work. Swedish gymnastics will not be a success without this. But will any other gymnasium work be a success without it?

Critics of the system have made, it seems to me, two very great mistakes—one class has deluded itself into thinking that it has criticised the system, when it has only criticised certain physiological or other statements which have been made about the system; another class goes no further than the skeleton upon which the whole thing is built, and then pronounces the system itself "as dry as bones." Neither mistake would have been made had the system been studied on the floor of the gymnasium and with reference to the aims which it seeks to accomplish.

In physical training two aims are preeminently important:

1. The general effects of bodily exercise, including the acquisition of that amount of physical endurance which the special conditions of each individual life demand. I place this first, for it is the chief object of physical training.

2. Correction of physical faults, both deformities of the muscular and skeletal systems and deficiencies in the nervous control of the body. I have tried to show that this is rendered necessary by the specialization of life, and is especially necessary with that specialization which marks the period of development, and which may be summed up in the words, "the school desk."

The primary purpose of the Swedish system of gymnastics is the second of these objects. Its system of movements is based on a most careful study of kinesiology. It studies the effects of the innumerable possible movements upon the development of the body—that is to say, upon form and carriage—and it makes use of such movements as are known to be fitted to accomplish the corrective effects desired. It gives these movements in that way which will best insure with all members of the class their proper execution and greatest corrective value; that is, in the form of a drill and to the word of command; and it gives them with constant reference to such progression, both in the work of each day and especially in the work of successive days, as to secure the effects of training without undue fatigue or strain.

It does not entirely satisfy the demands of the body for general exercise. No gymnasium work does. The Swedish system is not all of physical training; and if some of its advocates have claimed that it is, such claims are merely the result of overenthusiasm and do not demand serious consideration. It starts with the assumption that corrective work is needed, and that this must be an essential part of all gymnastics, but it endeavors to give this in such a way as shall not sacrifice the more general hygienic effects of muscular activity. To what extent it accomplishes this depends largely on the teacher, partly upon the gymnasium facilities. It is not automatic; it will not succeed in incompetent hands, but unless you are ready to deny the need of all corrective work in physical training it does not demand qualities of its teachers other than those which all physical training requires.

We hear much to-day about the immense superiority of outdoor games to indoor gymnastic work; and there can be no doubt that in most, if not all, our American colleges for men there is a marked tendency away from the gymnasium. Nor need we be surprised at this. When gymnasia were first built at our colleges the entire work of physical training, apart from that of class and college teams, was confined to the gymnasium, which thus came to assume a rank of exclusive importance to which it was not entitled. Moreover, this gymnasium work has rarely, if ever, been under sufficient supervision. It is not too much to say that the American idea of a gymnasium has been an elaborate building with expensive apparatus in which the innocent student in search of health might pull on various weights "with nervously exhausting and deadening monotony." Such has been the experience of the majority of men who have tried such work, and the tendency to the exclusive use of games is simply the unanswerable proof of the failure of the system. It is not a valid argument against well-directed gymnastics. In fact, both the gymnasium and outdoor games have special functions in physical training, and one can not replace the other. On the contrary, one supplements the work of the other. For producing

the general physiological results of exercise, outdoor work is immeasurably superior. Bicycle riding, canoeing, rowing, tennis, golf, skating, etc., not to mention the games of earlier life, should constitute and, as a practical matter, must constitute the chief means of physical training; but while they well serve these more general and more important purposes, they are not conveniently used at all times of the year, and they have only limited corrective value; they do not remedy faults of posture, of carriage, of gait, and those interested in physical training should see to it that the welcome increase of interest in outdoor exercise does not produce neglect of the corrective work which the gymnasium alone can give.

CHAPTER XXVII.

THE FUTURE OF THE COLORED RACE.

I.

THE OPPORTUNITY AND OBLIGATION OF THE EDUCATED CLASS OF THE COLORED RACE IN THE SOUTHERN STATES. AN ADDRESS DELIVERED BEFORE THE AGRICULTURAL AND MECHANICAL COLLEGE FOR NEGROES, AT NORMAL, ALA., MAY 29, 1899, BY REV. A. D. MAYO, A. M., LL. D.

I do not appear before the faculty and students of the Agricultural and Mechanical College to discuss what the newspapers and politicians call "the race question" in the Southern United States. What is here called the "race problem," under another form, is equally pressing in the Northern States of the Union. It is only one section of the radical problem raised by that new departure in human affairs, the original Declaration of American Independence, fought out through eight terrible years of the war of the Revolution, and finally embodied in the Constitution of a republican government for the United States of America, declared, substantially, by Mr. Gladstone to be the most remarkable achievement of original statesmanship ever struck out by any body of men in the history of mankind.

The motive power of that new government and order of society, now a century old—the great political dynamo that generates the force which moves and illumines the national life—is the radical idea, then for the first time deliberately adopted by any government, that it is possible to construct a nationality in which "all orders and conditions of people" can live together, each man, woman, and child a vital part of the whole, every member protected in all the fundamental rights of human nature, including the sovereign right to strive for his own highest possibility of manhood or womanhood, and all working together for the common good.

That lofty idea of our new American nationality is only the translation into public affairs of the idea of human nature and possibility announced by Jesus Christ in the Sermon on the Mount, the Lord's Prayer, the Beatitudes, the Golden Rule, and the Law of Love. After an eighteen-century struggle upward out of the darkness of a paganism which held to the fundamental heresy of antiquity that every superior man was a brevet deity and all the rest of the world human trash, "in the fullness of time" this great American new departure sent greeting back to Palestine and began the mighty experiment of educating all orders and conditions of people upward toward that American sovereign citizenship, which truly achieved is the loftiest position in the world, made possible to every son and daughter of God.

Of course, it was not to be expected that ideals so lofty could at once be wrought into the actual life of any people. The entire history of this Republic during its first century is only a record of the intermittent progress toward this exalted declaration. It was only after the most terrible civil war of modern times, involving the slaughter of half a million of the flower of American youth, and the disappearance of the earnings of an entire generation of the people in the form of powder and shot, with the complete overthrow of the entire organization of human society through half the national area and its reorganization through the entire extent that we were able to include the whole American people in the world's great roll of honor, Amer-

ican citizenship, and with that the perilous attempt to confer on every man the last and most eminent right of free suffrage. Even this was only another attempt to legislate an ideal into the common life of the nation—an attempt whose realization remains for our children.

But this has been gained. "The past is secure." We begin the twentieth century of our Lord and the second century of the nation with the all-around agreement that hereafter this sovereign obligation to educate all orders and conditions of people toward the high ideal of American society shall proceed by the agencies of peace. "Peace hath her victories no less renowned than war."

From this time onward all the forces of the higher civilization of the twentieth century are to be concentrated and worked to their uttermost to solve the original American problem: How can all these peoples who, since the dawn of history, have lived in a chronic state of active warfare, only broken by more or less brief periods of truce, here, in the world's greatest Republic, be educated up to living together in a government and order of society consecrated to the highest welfare of all? And for the solution of this mighty problem the American people presents to the world the most original of all its many "new inventions," the people's common school. This, the most central and powerful of all our present agencies of American civilization, is practically a little republic, planted in 250,000 schoolhouses, in every State, Territory, county, city, township, and hamlet of this broad land. It is, when truly understood, fitly organized, and well conducted, the most complete and influential representative of the practical religion announced and lived by the great Teacher, Statesman and Savior of mankind.

The American ideal of manhood and womanhood is the same as that announced and lived by Him, so fitly named by the poet, "the first true gentleman that ever lived." The motto of "the first society" in this Republic is simply the old scripture: "Let him who is greatest among you be your servant." The American ideal of personal superiority that overrides every theory of race, class, culture, power, manhood, or womanhood of the past, is that all superiority of the individual is only another opportunity to serve the whole. We shall never reach the impracticable dream of the optimistic philanthropist—a millennium where all people will be equal in all respects. The law of human superiority through its myriad of forms will forever assert itself; it is to-day as relentless and masterful here as in any of the older nationalities or in any period of history. All discussion of this most puerile of fancies is idle breath. The only question left us to discuss, by the Providence that sets limits and bounds to every soul, is what are the opportunities and obligations of every man, every class, every race, in its relations to the mass of mankind? And here we face the everlasting ordinance: The Son of man and Son of God comes into this world "not to be ministered unto, but to minister." The end of all activity in the family, the church, the school, the state, through all the higher agencies of civilization, in every Christian land, is to educate the whole people into the complete possession and use of their own superiorities toward the idea of the law of service. This is all there is in the "race question" of the South, and the larger question of the welfare of all the races and classes now represented in the 75,000,000 American people.

It is doubtless an interesting question, What are the opportunities and obligations of the 65,000,000 American people, made up from the ingathering here of all the European nationalities, toward the 10,000,000 new-made colored citizens in the United States, and the 10,000,000 strangers in the islands of the sea that may be thrown upon us by the providence of the past year of successful war? But I do not discuss this question to-day, although never declining to discuss it, when presented upon proper conditions, as an American and not a local or sectional question, at a fit time and place. To-day I propose to talk, not at long, but at short, range. I propose to inquire, What are the opportunities and obligations of the 100,000 more or less youth of the colored race who, in contrast with the remaining 9,900,000, may be

called educated in respect to this vast multitude, more than twice as numerous as the entire population of the United States under the first Presidency of Washington? For this body of the 100,000 colored people this inquiry transcends all others, just now, in importance. For, according to the way in which this opportunity and obligation are understood, accepted and lived out by this 100,000, will depend, not only the present welfare of the 10,000,000 colored race at home, but in large measure the future policy of the nation in dealing with the coming multitudes that the providence of God may bring, through years to come, within the expanding influence of the national life.

Let us, at first, try to understand the actual condition of affairs among the 10,000,000 of the colored race in the Southern States, as far as relates to their higher development. The air is darkened, and the sunlight of common sense, not to say common humanity, is now obscured by a flock of theories. But we may as well remember that this great problem is fianlly to be solved by those who best understand the facts of the case, and have the broadest and most profound apprehension of the eternal principles of justice and love, to which all our human affairs must sooner or later adjust themselves.

What is the actual condition of the 10,000,000 of the colored race in these sixteen United States, which creates the opportunity and obligation of the 100,000, more or less, who to-day, by the favor of Providence and largely through the benevolence of friendly people in both sections of the country, are recognized as the educated class?

After twenty years of careful observation in every Southern State, each of which I know geographically and educationally as well as I know my native State (Massachusetts), I see a few evident facts.

1. I see that no people in human history has made such progress out of the underworld of paganism and barbarism, from which we all emerged, in three hundred years, as the colored people of the United States. I certainly do not undertake to defend the institution of negro slavery. But that man must be blind who does not see that the 6,000,000 people who in 1865 stepped over the threshold of the nation's temple of liberty, were in every essential respect another people than their ancestors in the dark continent—perhaps the majority of whom were there not a hundred and fifty years before. In all save the education that comes through schools and books, the colored race, in 1865, at the close of the civil war, had laid the foundations of all education in the three great acquirements that underlie our Christian civilization. They had learned the art of continuous and profitable work. They had learned the English language, the language of the people that leads in the idea of constitutional republican government. They had accepted the Christian religion, according to the creeds and ideals of conduct prevailing among the vast majority of the American people. With all its defects, the American people, at that period, had made the most headway in the organization of Christian ideals of life in their form of society and government, of any people. The whole people was responsible for the condition of these 6,000,000, of whom it could be said that, on the whole, their transition from African barbarism and paganism to American citizenship had been accomplished with less suffering and general demoralization than the similar elevation of any European people during the past thousand years.

How this came about no theologian, sociologist, or statesman has yet been fully able to explain. But practical, everyday men, who are doing the work of this world, have come to the conclusion, after eighteen centuries of a half-paganized and half-Christianized civilization, that God Almighty is the great moral economist of the universe. Whatever may be the status of man as he comes into this world, no man is permitted to get out of this world until, by his own will, or over his will, he has contributed something to the common cause of the uplift of the human race. If there indeed be an eternal hell, no eternal sinner can get there without, at some point in his doleful journey, he pays toll at some gate of heaven. The rela-

tion of the American people to the present 10,000,000 colored American citizens will finally be judged by history, from the fact of the progress of the colored race during its two hundred and fifty years' residence in the country, as revealed by its condition in the year of final emancipation, in 1865.

Indeed, so evident was this fact that the people then representing the Union, in due time after the close of the civil war, was moved to confer upon these 6,000,000 of freedmen the highest earthly distinction—full American citizenship.

This act now certainly appears the most hazardous experiment of the kind in history. But it was only an extension of the established practice of the whole country which, in 1860, had already admitted to full citizenship great multitudes of the lower orders of European immigrants; hundreds of thousands of whom were, in several essential ways, less prepared to use worthily this supreme gift than many corresponding thousands of the more intelligent of the colored folk. In fact, this act was a compliment to the training of the colored people in the South. And no statesman to-day is wise enough to decide with confidence, whether things in the United States would have been, on the whole, better at the beginning of the second century of the national life had not this happened.

But the most grievous result of this experiment has not been to the white, but to the colored man himself. Every European people has been compelled to reach its present condition of political and social emancipation through a thousand years of war, pestilence, and famine. Every step in the rough road has been gained only after a generation, sometimes a century, of conflict that has made Europe the cemetery of the human race. But the American colored man received more than any European people has yet gained, with no conspicuous effort of his own. Still, the everlasting law abides, that nothing worth having in this world is won and held save through the extreme of toil, suffering and sacrifice. Our 10,000,000 colored people in the United States are now passing through their own wilderness on their way to the promised land, which, to-day, to all save a superior class, is like a far-away mountain range on a distant horizon, sighted now and then through clouds and storms and mists by the dwellers in the valley below.

Doubtless there are still some great advantages in the situation. It is such an advantage as no people in history has yet enjoyed, that the final destiny of this people can be wrought out through the agencies of peace. We are certainly approaching that new and blessed era when "Sword, Pestilence, and Famine," the three terrible teachers of the past, are being remanded to ancient history. In their place the colored man is now invited to take his place in the great university of the new American life, whose faculty consists of Professor Free Labor, Professor Free Church, and Professor Free School, with the good will of every wise and benevolent man and woman in Christendom, and such a prize on the gleaming mountain top has never yet allured the hopes and strung the nerves of any race of men. Surely no people on earth, at any time in a similar condition of the colored race in these States, has had so much to encourage it, so many friends, such powerful forces working in its behalf, as these 10,000,000, represented by this institution of learning and civilization in which we are gathered to-day.

2. But another thing I see, just as plainly as what has now been stated. I can not help seeing that more than half the 10,000,000 of these colored people are still weighted with the bottom disability to the use and enjoyment of full American citizenship, an illiteracy that still holds practically in bondage 60 per cent of the entire number. In the six States where what is called the "Race problem" is now the most stringent—Louisiana, Alabama, Georgia, South Carolina, Mississippi, and North Carolina—this illiteracy, during the present decade, has ranged from 60 per cent of all persons over 10 years of age in North Carolina and Mississippi, to 64 per cent in South Carolina, 67 per cent in Georgia, 69 per cent in Alabama, and even to 72 per cent in Louisiana. In the District of Columbia, where the national Government, in connection with the

District, supports the best common school system in the country for the colored race, 35 per cent of these people over 10 years of age are illiterate, largely from the constant drifting in of the poorer classes from the neighboring States.

It is certainly a great tribute to the American people of all sections that during the past thirty-five years this illiteracy of the colored race has been reduced 40 per cent. Especially is it honorable to the Southern people, that $100,000,000 have been expended, chiefly by the white race, under conditions that we all know, during the past thirty years, for the education of the freedmen in common schools. It is also honorable that the North and the nation, from the beginning of the civil war to the present day, have probably contributed an equal sum. The Christian people of the Northern States are now spending more than $1,000,000 a year, largely for the superior education of Southern colored youth. But this does not change the stubborn fact that 60 of every 100 colored people in our own 16 Southern States, men, women, and children, above the age of 10, are living to-day in the most unfortunate of all conditions—illiteracy.

We are all the time discussing this question of illiteracy at cross purposes. It is regarded simply as an ignorance of letters; and we are reminded that the use of letters, five hundred years ago, was the luxury of the few, and that within the memory of living men the majority of people in Christendom was in this condition. We are called anew to admire the model virtues of people unable to read and write. An entire literature has sprung up concerning the colored race, in which the moral and social excellencies of the old-time slave population are duly magnified, sometimes to the extent that we suspect the author never heard of a respectable colored man who could read and write. But all conditions of this sort are perilous or harmless, according to their social and civil environment. Illiteracy in these United States to-day is no longer an amiable or, except under conditions rapidly passing away, an excusable weakness. Illiteracy in Alabama to-day means ignorance, superstition, shiftlessness, vulgarity, and vice, rolled together in the person of one illiterate man or woman, and concentrated as the bottom slum and slough of every American community. It is indeed a great black ocean, pestilent, hideous, malarious, under every State, community and family, steaming up death and destruction through all the lowlands of our American semicivilization and drifting in its poisonous moral and social atmosphere through the open door and window of every palace in the land.

The only condition under which ignorance is apparently a harmless element in society is in a social order, organized according to the old-time patriarchal and paternal method, guided by an aristocracy of intelligence and character that protects the masses from their foes without and their own folly and unrighteousness. Doubtless in some of its localities, and everywhere in some of its aspects, the institution of American slavery could be mentioned in this connection. Indeed, even the desire for, not to say the possession of, letters, would not only have been a constant peril to the institution itself, but under ordinary conditions intelligence could scarcely be regarded a blessing to the enslaved. But all this is ancient history.

To-day every ignorant man, woman, or child in this Republic is in a state of siege from the Grand Army that marches under its four generals in chief—Superstition, Shiftlessness, Vulgarity, and Vice. His ignorance is not only his great misfortune, but his deadliest temptation to all varieties of folly, weakness, and transgression, which land their victim in a state more hopeless than any form of "natural depravity."

And even more than this, the illiteracy of any considerable American class is the greatest peril to every grade of people above it. No American community, Anglo-Saxon or otherwise, however exalted by wealth and culture and social refinement and civic power, even by the Christian religion as it is now understood, preached, and practiced, is proof against the terrible temptation from a race in the present condition of 60 per cent of the colored people of these sixteen States. I make no

charge, and have none to make, concerning the moral superiority or inferiority of the Southern people in all that concerns good American manhood and womanhood. They, doubtless, like all portions of the American people, have peculiar superstitions, shadowed by the defects that are the peculiar temptation of every superior or dominant race. But no people in history has been able to resist the perpetual influence of having among it another people, mixed up with everything in its daily life, always accessible, dependent, and always in the way in the hour of temptation, sixty of every hundred in the condition that every illiterate colored man or woman must be; each of them, meanwhile, endowed with all the powers of full American citizenship. As well might a colony expect to avoid the blight of malaria in the great Dismal Swamp, or expect to live in health and comfort with the basement story of its houses under water in a Mississippi River overflow, a turbid ocean 100 miles wide, choked with drift, swarming with all the fearful, loathsome, and malignant creatures driven from their own haunts by the frightful invasion. It is not in the South alone that this terrible scourge of illiteracy is manifest. It is a national breeding place of all manner of moral sickness and mental perversion, touching the most remote outpost of the republic, turning the national mind and conscience upside down, with now and then an explosion, as from the bottomless pit, of wrath, fear, and hatred, that often reveals the best man and the most saintly woman to themselves as a possible rebel against every human sanctity and every ordinance of justice, order, and common humanity, established by the experience of the human race.

Now I am not here to-day to lecture the white people of these States, as I have been talking and writing to and about them for the past twenty years, with the encouragement and general assent and approval of their foremost people in every State, city, and hamlet visited, concerning their duty in this emergency. I am not here to declare that the North should repent of its great failure in Congress ten years ago to put forth the mighty hand of the nation to enable the South to increase the quantity and improve the quality of the schooling it had already established for both races of its people. I am here to-day to call attention to the opportunity and the obligation of the 100,000, more or less, of colored youth below the age of 35, all born under the American flag, all American citizens, concerning the deliverance of one-half the race out of the submerged district, the lowest slough and slum of the nation, which we still choose to cover up by the fine dictionary word—illiteracy.

3. For, at the opposite end of the social plateau of these 10,000,000 we find a body which, in contrast with the illiterates, may be named an educated class. It is only by a sharp contrast that this distinction can be awarded to possibly more than 100,000 young persons of both sexes, who, during the past thirty-five years, have been enrolled for a longer or shorter period in the group of institutions originally established by the churches and benevolent associations of the North, but latterly supplemented by all the States of the South, for the secondary, higher, and industrial training of selected colored youth. Within the past fifteen years every Southern State has established one, or more than one, free school of the secondary, normal, and industrial grade after the type of the famous Hampton Normal and Industrial Institute founded by Gen. S. C. Armstrong, at Hampton, Va., soon after the close of the civil war. In the year 1896–97 there were 169 schools for the secondary and higher education of colored youth in operation in these sixteen States, with 1,795 professors and teachers, 1,008 of whom were women, 45,402 students, 25,159 girls and 20,243 boys; 2,108 of the (1,526 males and 582 females) being in college grades. In the secondary, the high, and academical grades there were 15,203 students, a majority of 2,000 girls. In the elementary, or what is known as the primary and grammer grades, there were 28,091 pupils—11,773 boys and 16,318 girls.

Apart from the State normal and industrial seminaries, which, as a rule, do not include the classics, and the pupils in attendance on an increasing number of free

high schools in cities, there would seem to be at present some 2,410 students in classical, 974 in scientific, and 11,340 in higher English studies; 14,724 in all above the elementary grades. In the normal classes, but few of which can be regarded as professional other than in name, there were 5,081 students, about equally divided by sex. There were only 295 students in "business courses," of whom 179 were males. There were 1,311 professional students named, the large majority in theology and medicine. Of the 13,581 included in industrial training, 8,611 were girls and 4,970 boys, of whom 1,027 were studying farming, 1,496 carpentry, and a smaller number other mechanical occupations.

These schools report 224,794 volumes in libraries. The entire value of their buildings, grounds, etc., is $7,714,958. Their annual income is $1,045,278. All this, save $141,262 from tuition money, $271,839 from State or municipal aid, and $92,080 from permanent funds, comes in the way of a benefaction from the North, whence this entire plant of $7,700,000 has been derived. Probably $3,000,000 has been given in permanent funds. Many of these higher schools have been in existence for twenty or more years. More than a dozen of them, established by the Northern churches, have assumed the title "college" or "university," and are organized according to the academical and collegiate methods of the leading denominational seminaries in both sections of the country fifty years ago, with such additions especially in their industrial and normal departments and improved methods of teaching as may have been found expedient.

It is impossible to determine the number of colored youth who, since the year 1870, have been at different times enrolled in these 169 seminaries of the secondary and higher education, and who to a greater or less extent have received a permanent influence from such attendance.

The majority have doubtless profited more in their improved manners and morals than in their scholarship by this experience. Still, it would seem impossible that any save a perverse or utterly careless youth could spend over a year in one of these schools, in contact with these often cultivated and always faithful teachers, really surrounded by a new world, without becoming in some way a member of the educational in contrast with the illiterate class.

It is probably not an overestimate and it may be an underestimate to say that of the 10,000,000 colored people in the United States 100,000, under the age of 30 years, are regarded by the masses of their own people as educated. Certainly more than 500,000, possibly 1,000,000 children and youth of this race during the thirty-five years since emancipation have entered manhood and womanhood with more schooling than George Washington, John Marshall, Benjamin Franklin, Roger Sherman, Andrew Jackson, Abraham Lincoln, Henry Wilson, Horace Greeley, George Peabody, and multitudes of men and women in all sections of the country, who are named in history or cherished in the memory of important communities as leaders in the higher region of American life during the first century of the Republic. This is a great testimonial to the capacity of the race, the last to step over the threshold of civilized life in these modern days. And it should assure the most despondent friend of the negro that the destiny of these 10,000,000 is safe in charge of the American people. It is only necessary that it be itself awakened to the one supreme obligation of every class in the Republic, the duty to learn the great American art of self-help and follow its own noblest and wisest leaders toward the "prize of the high calling," a complete American citizenship—the grandest prize that now tempts the worthy ambition of mankind.

Of this body of the educated 100,000, 27,000 are now reported as teachers of the 1,500,000 children enrolled in the public schools, 900,000 of whom are in "average daily attendance."

The attendance of colored children and youth in public schools is on the whole an encouraging tribute to the demand of this people for education. There were 1,460,084

enrolled in all the public schools for the race in 1896–97. There are 2,816,340 colored children and youth between 5 and 18 years of age in the 16 Southern States, 32.65 per cent of the entire school population of the South. Of this number 51.84 per cent were enrolled in public schools, against 67.79 per cent of the white children of similar grade. The average daily attendance of those enrolled in colored schools was 61.95 per cent, in comparison with 67.58 per cent of the white. In 1897–98 there was one colored teacher to every 33 colored pupils in average attendance at the Southern common schools. The annual cost of the public schooling of these 900,000 children in 1897–98 was $6,656,000, with probably $2,000,000 additional for the secondary and higher education. Of the public school expenditure almost the entire sum is obtained by taxation of the white people of the South. But this is simply in accordance with the American common school idea, which is that the property of the State shall educate the children of the State. As the colored laboring class of the South, like the corresponding white class in the North, is in large measure the creator of the wealth of the country, it is no special hardship that the white property owners of the South should largely support the common school for all.

But the historian of education will record to the enduring praise of the Southern people that during the past thirty years, despite the overwhelming destruction of property and demoralization of society by the greatest civil war of modern times, it has invested $546,600,000 in public schools alone, and several other millions for the secondary and higher education; $104,000,000 having been invested in the education of children and grandchildren of a people who, in 1860, were held in chattel slavery and declared by the Supreme Court of the United States not citizens of the Republic. And it is a cause of rejoicing to the country that to-day there are more than 1,000,000 colored children in the public schools of the South, everyone of whom was born a freeman, under the American flag, a citizen of the United States.

4. Always and everywhere the most favored class is compelled to deal with the less favored portion of mankind, for its uplifting, through the agency of the great intermediate multitude who walk in the middle of the road, "the plain people," who are the "bone and sinew" of every civilization. It is of this class of which the Good Book says, "the common people heard Jesus gladly." It is to this body, the 40 per cent, of the colored race, above 10 years of age, who have risen out of the almost absolute illiteracy of forty years ago, and the smaller class who, still deprived of letters, are educated (educated by life) above their fellows, that the 1,000,000 of the colored educated youth must turn for the "rank and file" of the grand army of invasion of the dismal realm of ignorance, superstition, shiftlessness, vulgarity and vice that still holds out against all efforts of a republican civilization working for its regeneration since the emancipation of the race. For here, among the better sort of those who have enlisted in the army of intelligence and progress, will be found the most reliable advisers, the fairest counselors, the most faithful allies of the enthusiastic and devoted educated young men and young women, going forth to serve the Master by "preaching the Gospel to every creature." And here, also, will be found the well-to-do in worldly goods, who must be instructed in the Christian idea of using money, saving on the lower to spend on the upper side of life. And, above all, here is a solid, conservative class, which will restrain the pernicious antics of the professional agitator, visionary enthusiast, the chronic impracticable, and the cranks and humbugs of every description, shaping the direction of a sound policy concerning public affairs and discerning the most effective manner of meeting and repelling every assault upon the rights of the masses.

Happily for the opportunity of the 100,000 of the new generation now called to the leadership of the race, they find in the better sort, the 40 per cent of their people who have seen the light of knowledge, a most efficient ally in their great enterprise, and not only from the most worthy of this class, but from an increasing number

who have not enjoyed the opportunity of schools and letters, will come forth, year by year, new levies of people who have no longer "any use" for the "blind leaders of the blind," in the pulpit, on the platform, in office, or as advisers in any department of common or public life. And, of all the following to be desired by a wise and progressive leader, the most desirable is a people, just in the condition in which several millions of the colored race are now found. Nowhere do you find such a genuine respect and even reverence for true and tried superiority; such a confiding regard in whoever proves himself a reliable, sound, and steadfast friend of the people's cause, as here.

Indeed, one of the most inspiring and pathethic spectacles in American life to-day is the attitude of hundreds of thousands of the better sort of the colored folk before any man or woman, from either race or section, approved as a leader able to lead a friend who is neither a flatterer nor a fool; as ready to declare the defects as to recognize the virtues of his followers; as severe to restrain as courageous to lead the advance. Here is such an opportunity for the highest achievement of good for great numbers of people as has never before, and may never again, be offered to a superior class, called by God to go forth and lead the wandering tribes out of the desert, across Jordan and into the promised land.

For the present is a transitional period. A generation hence, with the larger extension of education, the increase of comfort and a more general prosperity, it will be far more difficult than now for any favored 100,000 to go before and marshal the army of the Lord for a new exodus out of any Egypt. To-day is the golden opportunity for a supreme effort of the class that can honestly call on a generation to set its face toward the future. Every young man or woman now going forth from one of these great schools is accepted by his friends and has a following, as a representative of good education and all the indescribable blessings connected therewith. To every one of these it can be said, as the Master in the Mount said to his new and untried disciples: "Ye are the light of the world. A city set on a hill can not be hid." You will be received with a great expectation and a hearty welcome. And of you it can be said that this attitude of the mind and heart of your constituency is of itself one of the greatest opportunities given to man to do his uttermost for the uplifting of a race.

And it is a part of this great opportunity that even the illiterate, of whom the majority are only in part involved in all the perils of their condition, confide in you for the instruction of their children with a mighty faith that you will send them out from the churches and the schools far better and wiser than themselves, and that they will often become, through their children, your most docile and devoted followers. The greatest following of the noblest reformers of the world has often been from the class that has been cast away as the offscouring of the race by those who sit up in the high places of culture and power. Jesus said to the proud Pharisee, the contemptuous Sadducee and the mocking scribe: "These publicans and harlots will go into the Kingdom of God before you." It was among the slaves, the obscure and afflicted and oppressed lower orders of the Roman Empire that Paul and Peter and the other ten found the materials to build the primitive Christian Church. Even the "upper ten" of old revolutionary Boston "sailed away at break of day" to Halifax when General George Washington marched into town. The true reformer should never despise his audience or turn his back upon any sincere following, for the Word of God often comes to the poor and lowly, and the child who was born in a stable and cradled in a manger became the leader of the centuries and the Savior of mankind.

Permit me, then, to ask the more thoughtful members of this young army of the Lord, "one hundred thousand strong:" "Do you, who by the blessing of God and the favor of your friends, have been able to come up out of the darkness into the twilight of knowledge, where you now abide, realize the grandeur of your

opportunity?" It is to be acknowledged leaders toward the upper region of American life of a people twice as numerous as the entire population of the Republic under the Presidency of Washington.

There is one region of American life, and that the highest—the opportunity of all others, worked and prayed for by the noblest of mankind—that is yours without rivalship or resistance. Nowhere in this world to-day is a body of 100,000 young men and women called to such a ministry of service and sacrifice for the uplift of 10,000,000 of the human race as you. Any 100,000 young people of any other race who should go to work with such a mission as your own would be smothered in the great multitude who are already engaged in similar work, and only now and then one, a "survivor of the fittest," would obtain a position where he could show himself for what he was. But you stand on this high plateau of opportunity, the observed of all observers, with no jealous or hostile body outside your own race to hinder, and all Christian people, at home or abroad, applauding every success, giving generously to you of all sorts of good gifts, bearing up your work on the wings of prayer, that signifies as much to-day as in any of the days of old. You have not made this great occasion for yourself, and it comes not as any reward of merit, but as an invitation to prove yourself fit "soldiers of the cross." This glorious and unique opportunity was created for you by the providence of God. This standing place where you now are marshaled was gained for you by the sacrifice of half a million patriotic lives and the indescribable suffering of an entire section of our common country. The continued benevolence of the friends of the people for a whole generation has made it possible that you should be lifted up to this high mount of opportunity and obligation. The "gracious favor of Almighty God," invoked by Abraham Lincoln in his proclamation of freedom, has called you, not because you are especially worthy, but that you might be made worthy to answer this summons from on high.

5. Remember this, every young man and woman that hears me: The wisest and best people of every section and community in the United States are always on the watch for the appearance of one more young man and woman worthy of their aid and encouragement. Your end of the social scale is to do the best that lies in you with all your might. If so, each of you will be the friend and beloved disciple of Him who was fitly called by the poet "the first true gentleman that ever lived," with the love of God, "whose favor is life, and whose loving kindness is better than life." You can manage to "worry along" with this sort of social consideration while you are intrusted by Providence with laying the foundation of the new social order for a whole people who, if your life is prolonged to my own age, may number 20,000,000, everyone of whom will speak of you, if you deserve it, as the schoolboys and girls of my youth spoke of the fathers of the Revolution; as they do now of the heroes and statesmen of the war for the Union; and as you speak of your own soldiers, who now, under the blazing sun, in the jungles of the tropical islands, are clearing the way for a new opportunity for your children, perhaps even greater than your own. If you are doing and living up to what God now calls you to be and do, you can well afford to wait upon the coming of all the good things for which you long to-day.

In fact, your present opportunity furnishes the only way by which you can obtain all that belongs to any good American citizen. "There is only one way under heaven known among men" whereby your great hope can be realized for your people, and that is just the way where you now enjoy an opportunity such as is given to no similar class in Christendom—this great labor of love for the uplifting of your people, which you can do with "none to molest or make you afraid."

But someone may reply: "All this is doubtless very fine, but it is somewhat vague and vaporous, and does not seem to fit my own case." Let me, then, "descend to particulars," and call your attention to several ways in which you are able to serve in the great work of training up your people in their present condition of childhood,

"in the way they should go," so that, when they rise to their complete status of manhood and womanhood, "they shall not depart from it."

In 1896–97 there were, in the sixteen Southern States, 6,000 students in schools, classed as normal, theological, and medical, representing the three great liberal professions that touch most closely on the common life of the masses of any people. The statesman, the lawyer, the author, the artist, and the journalist—all move the superior class at second-hand, and the illiterate class directly scarcely at all. But the Christian minister, the teacher, and the physician stand "next of kin" to our own flesh and blood. Often, if the men and women in these professions are worthy, they influence us in a way more personal and radical than is possible for the majority of people in family relations to minister to each other.

There are now probably not less than 50,000 young colored men and women more or less educated and competent, acting in all these sacred relations among the 10,000,000 of the colored people. And there are still only half the colored children and youth of school age in the South at school at all. Perhaps half the colored people are not living in regular church relations; possibly not attending church. And only a small portion of the colored families are living under healthy sanitary conditions, or ever see a doctor or a health inspector until in some "tight places" with a dangerous disease, or warned by a visiting policeman. Now, with the exception of the medical profession, the white professional man or woman is almost banished from this, the most important field of professional service. Your people are no longer gathered, like their fathers and grandfathers, in the gallery of the old church, to hear the preaching of the most distinguished divine, but flock around their own favorite preachers and religious leaders. The teaching in the public schools, outside of a few cities, is all in the hands of 27,000 colored schoolmasters and schoolmistresses.

What an opportunity is here—the bodily and mental training, and the religious ministry to a whole people, covering their entire higher life! Read the testimony of the experts who have recently examined the sanitary conditions of great numbers of colored people now living in the larger Southern cities, and more every year employed in the rapidly increasing manufacturing institutions of the South. What a dismal picture of sickness, death, sorrow, and the demoralization of families is this! Almost twice the ratio of deaths to the white race, with the imminent danger of the entire colored race being involved in the most deadly class of diseases, consumption and its attendant complaints, which the best medical skill in the world has only recently checked among the more careful and protected communities of all the nations. Is not this an opportunity given to the faculties of your schools of medicine, such as to no other body of physicians, the task of dealing with the physical life of a whole people, and in so doing lifting up thousands from destructive habits that are the curse of the race? And when we read that this terrible mortality and disease is not due so much to the physical environment of your people as to their ignorance of the most common laws of health and the reckless indulgence in the animalism that, in every people in similar conditions, is the great, black, underlying slough and slum of every community, is not the opportunity of the colored physician and nurse lifted to a great moral ministry? If the medical profession of this race in one generation could reduce the death rate from an average of 34 to 1,000 in five of the larger cities of the South to some approach to the 20 per thousand of the white race, would it not be an achievement worthy the highest aspiration of the most devoted body of young men and women, doctors and nurses, as especially in doing this so many of these poor children could be saved from the bottomless pit of the animal vices, where all manhood and womanhood sink down into an almost hopeless annihilation?

Think of the 27,000, possibly of all sorts 30,000, teachers of the 1,000,000 children and youth now in school, 33 to each teacher in average daily attendance. What an

opportunity is this, to have in charge all the children, practically all the time during the months allotted to their school life! What a change to multitudes of these children, who come from such homes as we know they have, to such a place as you can easily make your schoolhouse—make it by the cheerful work of your own pupils, at once transforming a bare and thoroughly unsightly school building to a pleasant summer or winter home! Even in doing this you are training every child in the fine art of home making, without which there is no better future than to-day for several millions of your people. And if, besides this, you can yourself be a Christian man or woman in the teacher's chair, as every young man or woman should be in his every-day "walk and conversation," an object lesson of that character, without which your boasted American citizenship is only "a prelude to a tragedy or a comedy, and probably both," you may become a follower of the world's supreme Teacher, who said: "Of all that the Father has given me, I shall lose nothing, and raise them up again at the last day." And if you can only pry open the darkened window of the soul of one of these little ones, so that, as through a little crack, a shaft of golden light may cleave the gloom and remind this child of the infinite firmament that holds the earth in its embrace, you may have made it possible that this prisoner in the abode of ignorance may be aroused to break out of the sleep of mental dullness and range at will through all the glorious spaces of the wisdom, beauty, and love that are the heritage of every soul that comes into the world.

And what can be said that has not been said of the minister of religion? Only this: That a low, sensual, selfish, superstitious, and, in any essential way, incompetent man in this position is a curse more blasting than a pestilence to any youth that comes within the moral malaria of his personality. But if he is in truth a good man of even common ability, really devoted to his sacred calling, trying with "all his heart and soul and strength" to serve the people, to protect the young, to warn the careless, to rebuke the obstinate, to stand like a rock across the way of any man or woman determined to go to the evil one, he is such a blessing as only can be known to them who are privileged to be of his flock. And let it be remembered that even the superior upper class of the colored flock are more accessible to the influence of a worthy Christian ministry than any other sort of our native American people.

The colored clergyman has a range of opportunity far beyond the ordinary minister of religion elsewhere, and an unusual proportion of the larger ability of the race has been attracted to the pulpit. There, too, is the place where woman can do a work possible nowhere else. Remembering all this, we may well realize the height, length, breadth, and depth of this great professional opportunity.

Then remember, you doctor, minister, teacher, that you are by your very position compelled to be a missionary. At best you now have access to only a small portion of your people. Indeed, the majority of these 10,000,000 of your folk are still to a great degree outside your beat. What a call to the good physician to go forth into the dark regions of the country and the submerged district of the city life and give battle to the enemies of the bodies and souls of the people! What a chance for every young man and woman teacher, provided he is not smitten with the personal ambition of opening a little private arrangement which will divert the small means of the few more favored in their worldly goods to his exclusive use and leave the majority to go on in deeper discouragement than before! What an opportunity to go down to the hardpan of the bottom strata of the country, break up the crust of ignorance and indifference, and persuade the whole people to come up towards a new life! In a few years of such work he may change a dull and hopeless to an active, hopeful, and progressive neighborhood. If you can, at any sacrifice, plant yourself in any little countryside, however neglected and deserted, you may show how a good and wise man or woman anywhere by faith and hard work may reclaim even a mental and moral desert and make it "blossom like the rose."

Then, beyond this, remember that it is for you to lift each of these great professions

above the condition in which they have only been known to your people during the first generation of their freedom. It was inevitable that the colored minister, the doctor, and the teacher of thirty years ago should have been a great contrast to those whom the freedmen had known in the old days on the plantation. He was too often not good enough or intelligent enough to be intrusted with any responsibility in connection with the families that he often preyed upon more than he prayed for. We need not be too severe now upon the feeble beginnings of the professional life among your people; but we must remember that, while "the days of their ignorance God winked at, He now calls on all men to repent." It is given to you to lift these, the most sacred and important of all the professional callings, to their real dignity. It is for you to prove that the new minister, doctor, teacher, man or woman, should be "the guide, philosopher, and friend" of every man and woman and child. Just such an elevation of these three professions as you can achieve during the thirty coming years will be in itself a service whose value can only be estimated when it is seen in the improving life of the entire people.

And remember again that your brothers, off in the islands of the sea, are clearing the way for your young men and women to go forth on a mission of peace, bearing the gifts of knowledge, righteousness, and health to other millions even more in need than your own countrymen. I will not enlarge on the great possibilities opening to your people in the inauguration of the new colonial policy of the nation; but I believe I can see in a not distant future such opportunities for the more enterprising of your young people in the way of an honorable success in life, and especially in the great opening for Christian service in the years to come, as in themselves would repay all the blood and treasure expended in the past year, or all the toil and trouble of the future administration of our new possessions.

Then I note with great satisfaction, in the last Report of the United States Commissioner of Education, that 13,581 pupils in the 169 superior schools for your race in 1896–97 were receiving instruction in the different industries, the boys in the various departments of manual training and the girls chiefly in the improved housekeeping, cooking, and the important art of sewing. I am glad to note that nearly twice the number of girls than boys are thus engaged—8,611 girls to 4,970 boys—for the fundamental industry of any people is the art of making a good home, where, on the ordinary income of a few hundred dollars a year, a family can be maintained in health, morality, intelligence, and all the refinement possible to the humblest abode that shelters a truly mated husband and wife and a group of children, like a cluster of roses crowning the altar of a Christian household. Your own good president, Councill, and your faithful teachers are all the time telling your people that, until they rise up and leave the one-room cabin, there is no hope for them this side the abode of the blest, even if there is any reasonable chance of getting there at all by this, the purgatory line.

The Queen of England and Empress of India had a habit of giving each of her own girls, at an early age, a little house, with strict instructions to each to become a first-class housekeeper, if nothing else. And when the little woman had learned to cook a good meal, set the table and preside at its head, the Queen accepted an invitation to her daughter's first dinner party. So it came about that everyone of Victoria's girls, besides receiving the scholarly accomplishments of a cultivated lady, became an especially good housekeeper.

An old keeper of a first-class railroad restaurant in Ohio used to reply to the compliments of his customers after a particularly good lunch: "Sir, it requires eternal vigilance to keep a good eating house." The mental and spiritual and physiological responsibility within the next twenty-five years to place the majority of the colored people in a good home is itself a "degree" more significant than any college honor, and the young graduate of any school, who can achieve that in the house given her not by the Queen of England, but by her "king of men," may well be more proud

of her neat morning rig in her own kitchen than of the senior uniform in which the "girl graduates" disguise their good looks on commencement day.

If Victoria of England is not ashamed to look after the housekeeping of her girls, I wonder where the colored American girl anywhere can be found who will set her face against the most womanly of occupations, as if it were a "let down" from her dignity? "I don't want to be a servant," you say. Well, that is just where you differ from the Lord Jesus Christ, who said: "I came not to be ministered unto [i. e., to be served, waited on], but to minister [i. e., to be the servant of all men]; and to give my life a ransom for many." Oh, my dear girls, I entreat you, put out of your heads and hearts this supreme vulgarity and sin of contempt for any necessary labor of the hands, for service and sacrifice are the central law of our human life. The higher education, according to the last American interpretation, is just this: The art of placing an educated mind, a consecrated heart, and a trained will, the whole of a refined manhood and womanhood, right at the ends of the ten fingers of both your hands, so that "whether you eat or drink, or whatsoever you do," you may "do all to the glory of God."

I say I am especially glad that the girls are just now giving more attention to industrial training than the boys. For there is no great danger that every American boy, unless an idiot or a criminal, will not sooner or later be brought down to the grindstone of hard work of some sort, for hard work of body, mind, and soul is the one qualification of the new American gentleman.

Every man, of whatever rank or importance, must do his own part of the drudgery of common life. The American idea of a gentleman is a man who carries master and servant under the same skin. If a gentleman and his servant are two men, under two skins, there is always a chance for periodical friction, not to say of permanent disagreement—a strike, a rebellion, anything. But if a gentleman carries his servant under his own skin "he has him just where he wants him." He has all the service he needs at his hands, and if there is any tussle about it, it concerns nobody but himself.

Industrial education, as understood by the genuine educators of the country, is the art of abolishing drudgery and menial labor through the invention of labor-saving machinery. A labor-saving machine enables every workman to call in the help of God Almighty through his obedient servants, air, water, steam, electricity—all the wondrous powers of nature, which are the habits of the great Creator and the grand dynamo of the universe—to do the work of this world and verify the old prophecy concerning man: "Thou hast made him little lower than the angels and crowned him with glory and honor. Thou hast put all things under his feet." Don't believe any man who tells you that this great movement of industrial education is only a clever device of your enemies to crowd down the colored man to the condition of a European peasantry, only another name for the old-time chattel slavery. So far from this, it is the science of sciences, the supreme art of all the fine arts, the science and art of putting the trained mind and the consecrated manhood and womanhood into the body, so that all labor may be exalted to a mental and moral discipline and the mighty saying of the great apostle be verified: "Know ye not that ye are the temple of God, and the Spirit of God dwelleth in you?"

I am told, but I hope it is not true, for the fact that 40 per cent of all the colored students of the secondary and higher schools of the South is under industrial training contradicts it, that there is a growing disinclination among the educated young men of this race to take up this department of education. If so, a dark day has come to the colored race and to the Southern section of this Republic, for here the opportunity of the 100,000 educated youth of your race is such as has never been offered before to any special class of young men in the United States.

Within the coming thirty years this entire Southland is to be reclaimed to what God made it to be—one of the most productive and attractive portions of the earth

for the occupation and enjoyment of man. As I have gone up and down this marvelous country during the past twenty years, becoming as well acquainted with every one of its sixteen Commonwealths as with my own New England, I have not been surprised that even the prosaic land agent and the hard-headed railroad president should break forth into eloquence in the attempt to prophesy the wonders of its future.

The cause of this is not hard to find. Within the past half century the whole civilized, even the oriental world, has been awakened as by the voice of "a great angel out of heaven" to the fact that the intelligent labor of the masses of mankind, under the leadership of the expert captains of industry, is the new gospel for making this world a fit place for the abode of civilized and Christianized man. The day of the old, slow, stupid drudgery of the toiling millions to keep soul and body together is passing by, and the era of that enlightened industry, which makes every laborer a "coworker with God" and "an active partner" in business with all the great, silent, majestic forces of the universe, is now upon us.

The South finds itself to-day with a heritage of natural resources of which no man has yet compassed the grandeur and possibility, but with a great laboring class, ten millions strong, half of whom are still in the bonds of illiteracy and the other half just waking up to the understanding of what a creature man can become when joined in copartnership with omnipotence in dressing and keeping this Southern garden of God.

You are now directly concerned with the opportunity and obligation connected with the 10,000,000 of your own people, who, for good or ill, are here "to stay." Who, then, is to superintend the mobilization of this grand colored army of industry, that shall march forward, conquering and to conquer, over this wide field, where such honors and prizes are to be gathered as make all the titles, badges and glories of war only as tinsel and sounding brass in the presence of fine gold? If you, young men and women, whom the educational public of the whole nation has put to school for this organizing and leading your people, shirk the studies and the exercises that will train you to go before your own and lead them in this inspiring campaign toward a prosperity such as never before came to the Southern people, who will take your places?

For a little while, if you so will it, you may be able to disport yourselves as superior to your fellows, disdaining to put your own hand to the plow of reform, scorning the great leadership now offered to you. But after that, what? In one generation the entire lower side of Europe will then be let loose upon you. The labor union will inclose you like the iron prison house in the old story, which every day contracted itself upon its victim till he was crushed in its awful embrace. I tell you, young men and women, unless you do get up early in the morning while "for you it is called day," "the hour is coming and now is" when you and your people will be elbowed off into the holes and corners of the industrial world, like the young men whom I very often see with college diplomas in their pockets, waiting on table, watching a hotel bell, doing anything to keep the wolf from the door. And these young women—God help the young colored women, educated or ignorant, thirty years hence who has not learned how to keep the house in which she is permitted to live!

If there be a depth of degradation below the old-time slavery—which was not a degradation, but only the inevitable schooling of bondage through which every race has been compelled to make its way upward to civilization—it is found in that class of young men looking around for a chance to stand up to the crib and be fed, like human live stock, by their mothers, "sisters, and cousins, and aunts;" and worst of all, by their wives, the mothers of their children. A bright young colored girl in Texas said to me: "I don't want to marry. These young men are all such comical creatures that their wives have to support them." Such a life—the life of any young man who expects to live without solid and continuous work—is like the mask of the

old Greek actor, a double face, half tragedy and half comedy. If half a century hence your people are found where their enemies declare they belong, the "hewers of wood and drawers of water" of a superior race, you, the known educated, will figure in the pages of history as another of the failures of the ages—a people that were called and would not come.

Your race will not finally go down with you. For, as in the parable, when those that were called to the feast "begged to be excused," the highways and the hedges were ransacked and the wedding was furnished with guests.

The operative industry of the South should in time be largely in the hands of your people, for your race has an aptitude for it not inferior to that of any other sort or condition. The great mechanical industry of the South, which, during the coming generation, is to reach gigantic proportions, is to-day in every department open to you. What is to prevent you from having your part in the new era of skilled agriculture, fruit raising, the care of animals (dogs left out), in a country where there is land enough and to spare, and where every young colored man and woman should resolve to own at least one square mile of "sacred Southern soil?" There is no reason why the higher departments of textile engineering and architectural industry shall not be open to you.

And do not talk the foolishness that there is no place for you in this new industrial revival of the South. Any man or woman of you who can do as good or a better job of work than others, will be called to do it. The new South is now bent on having the best of everything. If you can give it the best in any department of productive industry, you will find your own place. I am not insensible to the force of prejudice and custom; and above all the power of pretentious inferiority over modest and deserving worth. But this American people of ours believe in fair play; and, in the long run, every man, class, race, will be estimated for just what it is worth in the field, the workshop—in every occupation and art that makes for the building up of the nation. Thomas Carlyle says: "No book was ever written down except by itself." No set of people in the United States of America can permanently be kept below its actual worth to the country. You and yours are left to decide what that position shall finally be.

Yes, if you are indeed able to face this mighty opportunity. Here comes in the obligation which, like a gloomy shadow, so often tempts the best of us to pray to God to be delivered from the greatest opportunities of life, lest in our weakness and wickedness they may become our final condemnation. This fundamental obligation of all to the one hundred thousand educated youth of your race, all born under the flag of the reconstructed Union, comes down to us through eighteen centuries in the stirring words of the great apostle: "When I was a child, I spake as a child, I understood as a child, I thought as a child; but when I became a man, I put away childish things." The most serious peril to this entire body of the educated young manhood and womanhood of the colored race is an inveterate juvenility that views this marvelous opportunity as a child takes all the gifts showered upon it as something belonging of right to itself, until it can not be satisfied by anything, but "claims the earth," and cries for the moon and stars.

There has not been a generation of youth in American history that has been so demoralized or is now in such peril of being demoralized by the greatness of opportunity thrown upon it, the magnitude of the favors it has received, and the intoxication of a mighty sympathy from the best people in the world, as just this one hundred thousand of whom I speak. From out the wilderness of bondage trodden by their fathers it has suddenly been transferred, as by magic, to the mountain heights of human opportunity, a privilege and position only conquered by any other race of men through centuries of conflict, the education which is the greatest gift to any generation. And a mighty opportunity like this is like the great hall of a spacious mansion, full of open doors, broad stairways and swift elevators, that admit to

every chamber of magic in life, even to the lofty roof, from which our American citizenship lies outspread, beneath, around, and above.

It must be from this obstinate and protracted childhood that so much of the apparent inability to recognize even the commonplace obligation to appreciate this opportunity comes. Otherwise I can not understand why so many of those who have been its recipients now seem to be more concerned by the impossibility of getting something else that just now can not be given by anybody than in considering "what manner of men they should be to whom this word of God has come." Why are so many of these young men and women apparently so careless in the use of these, the choicest gifts of Providence to any youthful generation? Why are they so greatly concerned to use these summits of opportunity to which they have been invited, to magnify themselves in the eyes of their less fortunate brothers and sisters, rather than to "remember those yet in bonds as bound with them?" Why are they often so eager to shoot the track of sane and practical duty at the call to any little personal gratification? And above all, why are so many of this class apparently fixed in the idea that they are the especial "wards of the nation," that the friendly people who bought their personal freedom "with a great price," and have continued for a generation to dispense the supreme bounty of education, are hereafter bound to help those who have already been educated to their present opportunity, still to assist in any little personal enterprise that may be chosen, even if a bypath away from the hot and dusty highway up which their people must toil in its long journey for success?

I warn these young men and women that the childish habit of dependence on the communities and people that have already done so much for them is their greatest peril. These friends, who have caused to be spent the $100,000,000 especially for the superior education during the first generation after emancipation, have not done it because they propose to keep these beneficiaries in perpetual childhood, or even as an attractive and unique spectacle of a precocious development of the race. They have done and are still doing this with the expectation that these persons will in due time come of age, and, with a grateful acknowledgment for past favors, will only ask the future privilege of being the true leaders of their own people to their own place in the Republic.

For if this 100,000 can not attempt this work, who can do it for them? If they fail to come forward as a body, each in his or her best way enlisting for life in the "good fight," on whom are we to rely? Of course the people of the South understand this peculiar weakness. They know all about the defects of the negro character, this self-indulgent and dependent habit that holds itself away from the rough contact with the hard and repulsive features of the situation and work "on the lines of least resistance." Many of the Southern people honestly believe, and are telling us with great emphasis, that this is a fatal lack of native capacity, a chronic "race habit" that will keep this people forever in the rear, not only of the all-dominating Anglo-Saxon, but of all these immigrating European peoples, and that even the educated portion of the race may as well be content to retire into their own little corner of national life and keep quiet.

Here is this great opportunity for industrial training, which is welcomed by the foremost educators of the Union as one of the peculiar contributions of the age to the new life of the Republic. Why do so many of the one hundred thousand educated hold back from the most important work for their people, going down to the common level of the common school and toiling in the low and dark places of the land for the practical schooling of the race? Why can not more of these students wake up out of the childish habit of school life, the habit of becoming the bodyguard of every offender of school order and law, as if the chief honor or dignity of the young man or woman at college was to be a shield for every idle, mischievous, sensual, or selfish boy or girl, who has come in collision with the government of the institution? I would not judge too hardly of this, the bottom weakness

of the class of educated youth, which I summon to-day to such a magnificent opportunity. I do them all honor by holding them up to their loftiest obligation. But after twenty years spent among the schools of the South, I long to discover the signs of a more manly and womanly habit of life among this class I now address. I long to see these young people coming together to make of themselves the new American phalanx that, like the embattled 10,000 of old, shall be placed at the center of the great wavering multitude of the 10,000,000 to assure it of victory during the century that is before us.

Indeed, my young friends, this seems to me about all there is in the great problem that this year again looms up, black and threatening, above the social and political horizon. Can the 100,000 more or less educated colored youth, who, during the first generation of their freedom, have been schooled and sent forth to "spy out the land" and survey the road along which their people may walk up to their own place in our many-sided American life, lift themselves, each for himself or herself, out of the little environment of personal interest in which they are sunk out of sight of their great opportunity, and really open their eyes upon it, stretching like a splendid landscape, rising from the lowlands to the foothills, scaling the different plateaus even to the azure encirclement of the mysterious mountain ranges that block the horizon? Will they take account of stock in their own spiritual condition, and, responding to the call from heaven, "show thyself a man," and like the woman who "hath chosen the better part," build themselves up "after the manner of the perfect man, to the measure of the stature of the fullness in Christ?" In proportion as you can do this, the revelation of your opportunity will be the revelation of your sense of obligation. Children use the gifts of life as playthings. Men and women, after the pattern of the Master, use opportunities as a summons to new obligations and ever new effort to achieve the best given to them to do.

As I have gone over, in the light of my past experience in the Southern States, what I should say to the young men and women who here represent the 100,000 youth of the colored race, my mind has constantly turned to the great original order from headquarters, given by the "Captain of our salvation" to his first twelve obscure and untried disciples, sent forth to preach the gospel of love to God and man to an unbelieving and unrighteous world.

Wonderful as that tenth chapter of Matthew's record is in its profound insight into human nature and perfect comprehension of the conditions of all radical missionary effort, it is no less remarkable for its complete adaptation to the opportunities and obligations of the body of people for whom I have meditated this discourse. How can I find a more fitting climax to all I have said to-day than in reading over again this great order No. 1 from headquarters, delivered eighteen centuries ago?

First—Take courage, all of you, from the fact that such an order should have been given to these twelve obscure young men, absolutely untried in the great work to which they were appointed. Even in the Sermon on the Mount when the disciples were only a little group of people attracted by a new preacher, Jesus had said to them: "Ye are the light of the world. A city that is set on a hill can not be hid. Let your light so shine before men that they may see your good works and glorify your Father which is in heaven." And to the twelve apostles, two of whom were to fall away and all were to "forsake him and flee" in the hour of supreme trial, and later to the eleven who were to be involved in contentions and misunderstandings among themselves and the chief of apostles, Paul, he gave such power and authority to preach, heal and even "cast out unclean spirits" as would indicate a body of men tried and proved as by the fire. He gave them no inspiration that was proof against their own folly, conceit or sin, but simply issued his sublime order, demanding the most exalted courage, persistence and character, even a consecration unto death.

This is just what the Lord Christ now says to each of you. It is not given because

of any special merit in yourself. It is given as an inspiration to the grandest and most unselfish service for God and man of which you are capable. This ministry for God and humanity to which you are invited is in itself the highest "higher education" for every man and woman, strong and sweet and brave, enduring enough to receive it. If you can not live up to it, it will appear, as in many an enthusiastic follower of the Master, who, in the hour of danger, "forsook him and fled." If you are made of the right stuff, the call, with all its overwhelming splendor of opportunity and weight of obligation, will only introduce you to your better self, and as you go on, bring forth qualities in you never suspected by you or by your nearest and dearest friends.

Like the twelve apostles, you are sent, not to deal with the people, friendly or otherwise, among whom your lot is cast. They have their opportunity and their obligation in their connection with you, and a responsibility in no respect less important to them than yours to yourself. But you are sent to "the lost sheep" of your own "house of Israel." First, to the lower strata of your own race, in your own commonwealth, 60 per cent of whom are still in the bonds of an illiteracy that means everything that should be hateful and abhorrent to every friend of mankind. Your order is: "As ye go, preach, saying the kingdom of Heaven is at hand." Now is the time for this people, "sitting in darkness," to be "wakened out of sleep" as by the shining forth of a great light. The kingdom of Heaven to them and all like them is a new birth into the Christian manhood and womanhood that this great Republic, no less than the Master, now demands from every man and woman on whom it has bestowed the eminent degree of American citizenship. The sick, the poor, especially the dead-alive, will all be brought to you. And if you can cast out the legion of devils and the "unclean spirits" that now torment the lower order of these, your unhappy brothers and sisters, great will be your reward long before you go to any other heaven than the one you are called to build up right here in this commonwealth, in this beautiful and bountiful Southland.

Do not waste time prospecting for a favorable situation, or give too much thought to your supply of gold and silver, or to your own rank in the army of the Lord. Shoulder your Bible and go in wherever there is an open door. In any city "those who are worthy" of your ministry will find you out, and "your peace will come upon them." Otherwise "let your peace return to you." Always "keep the peace," for somebody will finally accept it. At the worst "shake the dust from your feet" where there is no place for you, and go your way, leaving God, through his all-directing providence, to deal with the situation. "If they persecute you in one city, flee ye into another," for you will not have gone through even all the cities of Alabama before the kingdom of God will have come. Somewhere will be found somebody who will welcome your coming and "hear the Word with gladness." And the kingdom of God always comes in this world when one soul throws open all doors and windows and bids the everylasting truth, love and beauty come in and there abide.

Do not imagine that your ministry, even if it is confined to living up to the "mark of the high calling" in the most common station in life, is to be a promenade, a reception, a festival, or even a Sunday-school picnic. Read over again the awful words of the Master, prophetic of every sincere endeavor made since He went to the Cross to preach and live a new departure in righteousness, intelligence, social or political uplifting anywhere. Perhaps the most obstinate of all who resist you will be your own people, offended with your call to repentance and newness of life; for "a man's foes shall be they of his own household." There is no hatred, contempt, or malignity like that of a people "half savage and half child" when shown the true picture of themselves. But if you can be "wise as serpents and harmless as doves," falling back on God in the hour of emergency to know "what ye shall speak" and

do, and especially if you can "endure unto the end," you will be saved and your success will be the earthly and spiritual salvation of many of those to whom you come.

Even if you are broken down with only the burden of living up to the best you know, be not disheartened, for what you meditate in darkness will be spoken into the light, and what you hear with the ear and fitly speak and worthily do will be repeated and done over and over again, till it is shouted from every housetop and proclaimed from all the mountain summits around the world. If "the Master of the house was called Beelzebub," who are you "of his household," even if you are "hated of all men for his name's sake?" Your bodily life is only lent you from God to be spent in the service of God for the uplifting of man. Even if taken from you, you will not die. Your "soul will be marching on." Abraham Lincoln in the White House was a man on a mountain top, bracing himself against the tempests and thunders of a nation in the throes of a mighty revolution. Abraham Lincoln, the martyr President, is now the father of the new Republic, honored and everywhere beloved throughout the world.

And finally, never forget that God is the supreme economist in the affairs of this world. "Not a sparrow falls to the ground without the Father," and the very hairs of the head grown gray or bald in the Master's service are all "numbered." Not a word, or act; or thought, or look, if worthy of your high calling, will be lost. And "whosoever shall give to drink unto one of these little ones a cup of cold water in the name of a disciple, verily I say unto you, he shall in nowise lose his reward." God grant that, whether the "time of departure" of any of us is far off or "now at hand," each one may be able to say with the apostle, "I have fought a good fight. I have finished my course. I have kept the faith."

II.

How to Improve the Condition of the Negro.[1]

We must admit the stern fact that at present the negro, through no choice of his own, is living among another race which is far ahead of him in education, property, experience, and favorable condition; further, that the negro's present condition makes him dependent upon the white people for most of the things necessary to sustain life, as well as for his common-school education. In all history those who have possessed the property and intelligence have exercised the greatest control in government, regardless of color, race, or geographical location. This being the case, how can the black man in the South improve his present condition? And does the Southern white man want him to improve it?

The negro of the South has it within his power, if he properly utilizes the forces at hand, to make of himself such a valuable factor in the life of the South that he will not have to seek privileges; they will be freely conferred upon him. To bring this about, the negro must begin at the bottom and lay a foundation, and not be lured by any temptation into trying to rise on a false foundation. While the negro is laying this foundation he will need help, sympathy, and simple justice. Progress by any other method will be but temporary and superficial, and the latter end of it will be worse than the beginning. American slavery was a great curse to both races, and I would be the last to apologize for it; but, in the presence of God, I believe that slavery laid the foundation for the solution of the problem that is now before us in the South. During slavery the negro was taught every trade, every industry, that constitutes the foundation for making a living. Now, if on this foundation—

[1] From "The future of the American negro," by Booker T. Washington.

laid in a rather crude way, it is true, but a foundation, nevertheless—we can gradually build and improve, the future for us is bright. Let me be more specific. Agriculture is, or has been, the basic industry of nearly every race or nation that has succeeded. The negro got a knowledge of this during slavery. Hence, in a large measure, he is in possession of this industry in the South to-day. The negro can buy land in the South, as a rule, wherever the white man can buy it, and at very low prices. Now, since the bulk of our people already have a foundation in agriculture, they are at their best when living in the country, engaged in agricultural pursuits. Plainly, then, the best thing, the logical thing, is to turn the larger part of our strength in a direction that will make the negro among the most skilled agricultural people in the world. The man who has learned to do something better than anyone else, has learned to do a common thing in an uncommon manner, is the man who has a power and influence that no adverse circumstances can take from him. The negro who can make himself so conspicuous as a successful farmer, a large taxpayer, a wise helper of his fellow-men, as to be placed in a position of trust and honor, whether the position be political or otherwise, by natural selection, is a hundredfold more secure in that position than one placed there by mere outside force or pressure. * * *

What I have said of the opening that awaits the negro in the direction of agriculture is almost equally true of mechanics, manufacturing, and all the domestic arts. The field is before him and right about him. Will he occupy it? Will he "cast down his bucket where he is?" Will his friends North and South encourage him and prepare him to occupy it? Every city in the South, for example, would give support to a first-class architect or housebuilder or contractor of our race. The architect and contractor would not only receive support, but, through his example, numbers of young colored men would learn such trades as carpentry, brickmasonry, plastering, painting, etc., and the race would be put into a position to hold on to many of the industries which it is now in danger of losing, because in too many cases brains, skill, and dignity are not imparted to the common occupations of life that are about his very door. Any individual or race that does not fit itself to occupy in the best manner the field or service that is right about it will sooner or later be asked to move on, and let some one else occupy it.

But, it is asked, would you confine the negro to agriculture, mechanics, and domestic arts, etc.? Not at all; but along the lines that I have mentioned is where the stress should be laid just now and for many years to come. We will need and must have many teachers and ministers, some doctors and lawyers and statesmen; but these professional men will have a constituency or a foundation from which to draw support just in proportion as the race prospers along the economic lines that I have mentioned. During the first fifty or one hundred years of the life of any people are not the economic occupations always given the greater attention? This is not only the historic, but, I think, the common-sense view. If this generation will lay the material foundation, it will be the quickest and surest way for the succeeding generation to succeed in the cultivation of the fine arts, and to surround itself even with some of the luxuries of life, if desired. What the race now most needs, in my opinion, is a whole army of men and women well trained to lead and at the same time infuse themselves into agriculture, mechanics, domestic employment, and business. As to the mental training that these educated leaders should be equipped with, I should say, give them all the mental training and culture that the circumstances of individuals will allow—the more, the better. No race can permanently succeed until its mind is awakened and strengthened by the ripest thought. But I would constantly have it kept in the thoughts of those who are educated in books that a large proportion of those who are educated should be so trained in hand that they can bring this mental strength and knowledge to bear upon the physical conditions in the South which I have tried to emphasize.

Frederick Douglass, of sainted memory, once, in addressing his race, used these words: "We are to prove that we can better our own condition. One way to do this is to accumulate property. This may sound to you like a new gospel. You have been accustomed to hear that money is the root of all evil, etc. On the other hand, property—money, if you please—will purchase for us the only condition by which any people can rise to the dignity of genuine manhood; for without property there can be no leisure, without leisure there can be no thought, without thought there can be no invention, without invention there can be no progress."

The negro should be taught that material development is not an end, but simply a means to an end. As Prof. W. E. B. Du Bois puts it, "The idea should not be simply to make men carpenters, but to make carpenters men." The negro has a highly religious temperament; but what he needs more and more is to be convinced of the importance of weaving his religion and morality into the practical affairs of daily life. Equally as much does he need to be taught to put so much intelligence into his labor that he will see dignity and beauty in the occupation, and love it for its own sake. The negro needs to be taught that more of the religion that manifests itself in his happiness in the prayer-meeting should be made practical in the performance of his daily task. The man who owns a home and is in the possession of the elements by which he is sure of making a daily living has a great aid to a moral and religious life.



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