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UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1913, NO. 13

WHOLE NUMBER 521

REPORT OF THE COMMITTEE OF THE
NATIONAL COUNCIL OF EDUCATION

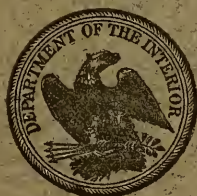
ON

Standards and Tests for Measuring the Efficiency of Schools or Systems of Schools

PRESENTED BY THE CHAIRMAN OF THE COMMITTEE

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

Monograph

BULLETIN OF THE BUREAU OF EDUCATION.

(Titles abridged.)

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REPORT OF THE COMMITTEE OF THE
NATIONAL COUNCIL OF EDUCATION

ON

Standards and Tests for
Measuring the Efficiency of Schools
or Systems of Schools

PRESENTED BY THE CHAIRMAN OF THE COMMITTEE

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STANDARDS AND TESTS FOR MEASURING THE EFFICIENCY OF SCHOOLS OR SYSTEMS OF SCHOOLS.

Educators and laymen have always expressed opinions with respect to the efficiency of our schools. In recent years there has been developed, along with a refinement in the technique of investigation in education, a remarkable public interest in the attempts to evaluate our educational practice. School inquiries, investigations, or surveys have been conducted, or are planned, in a great many cities throughout the United States. In each case there is the supposition that such an inquiry or investigation will measure the efficiency of the schools. It has not always been clear, either to those making the survey, or to those who read the reports, that three distinct types of measurement have been employed, or three sets of standards or tests applied. It is possible to characterize each investigation, or each part of some of the larger surveys, by one of the three following methods of measurement—first, measurement by personal opinion; second, measurement by comparison; or third, measurement by more or less well-established standards or units.

Measurement by personal opinion is valuable in just the degree in which the person passing the judgment is, by training and experience, qualified to give an intelligent opinion. Such personal judgments have frequently suggested comparisons with other communities, and have at times, no doubt, been based upon more or less well-established standards. The chief characteristic of this type of report, however, is found in the fact that the author does not feel that it is necessary either to appeal to a painstaking comparison with other similar situations or to state the standards which he uses in passing his judgment. Often the individual who is expressing a personal opinion seeks to give dignity to his statements by saying that he speaks in terms of facts. In effect, his argument is that the situation as he sees it, and as he has described it, leads inevitably to a conclusion with respect to the strength or weakness of the school system that has come under his observation. Of course, no such appeal to facts can modify the situation. Unless careful comparisons have been instituted, or commonly accepted standards applied in passing the judgment, the opinion expressed in the light of the so-called facts which have been discovered remains simply an opinion.

Measurement by comparison is based upon the fundamental idea that the common practice is the result of the judgment of many men who have attempted to solve the same or very similar problems. In reports which have used the method of measurement by comparison, the most common practice is used as the standard to which each local situation is referred. Such comparisons have been made with regard to expenditures, the progress and classification of children through the grades of the school system, the amount of time devoted to school subjects, supervisory provision, teacher training, tenure, and the like. In the derivation of standards of efficiency, it will always be necessary to employ the comparative method. Any adequate derivation of standards will, however, involve much more than comparison. Measurement in any field is not successful merely because we are able to say that one quantity is more or less than another. It is only when we have a measuring stick which enables us to describe all of the quantities with which we deal in terms of definitely determined units that we can claim to have any adequate method of measurement.

We are only beginning to have measurement undertaken in terms of standards or units which are, or which may become, commonly recognized. Such standards will undoubtedly be developed by means of applying scientifically derived scales of measurement to many systems of schools. From such measurements it will be possible to describe accurately the accomplishment of children and to derive a series of standards which will be applicable to varying groups of children and to different social demands.

Standards of accomplishment will always be stated in terms of group measurements. For example, we will not demand that all children in a given grade be able to write with a certain speed and with a certain degree of excellence, nor that they all be able to perform a certain number of operations in arithmetic with a fixed speed. We shall, rather, measure the abilities of the group in terms of a central tendency, possibly the median or mode, and in terms of variability from this most common or median ability. The derivation of standards, and their application to school situations, does not mean that we shall attempt to make all children alike, or to secure the same product in every situation. It will be possible, however, for one who has some appreciation of statistical method to compare groups of children, either within the same school system or in separate systems of schools, with respect to any ability or quality which they may possess with even greater assurance than we have any right to have in comparing two individuals.

We may expect to develop standards or tests of efficiency in the several different fields, or with respect to the several different elements which constitute a school system. It will not be wise to

attempt to measure one element in the situation out of relation to others, since each part of a school system is not only related to but in some measure determines the efficiency of every other part. For example, we might consider the problems of business administration as distinct, and yet we know that successful business administration will determine in no small degree the efficiency of work done in classrooms. It is only when buildings are properly constructed, lighted, and ventilated, when supplies of the right sort are purchased and properly distributed, that we can expect to do satisfactory work. In like manner, the accomplishment of groups of children in the several subjects which we teach, and the number of promotions or nonpromotions, may be determined in considerable measure by the enforcement of the compulsory-education law. In any attempt to measure the efficiency of a system of schools it will therefore be necessary to include in such a survey all of the problems commonly considered under the head of business administration, educational organization, the recruiting of the teaching corps, and the accomplishment of children. It is not probable that it will ever be possible to establish a single standard or unit of measurement the application of which may be thought to determine the efficiency of a school system.

The business management of a system of schools is to be judged by the adequacy of the system of accounting and of reporting which is used, just to the degree that such records are a measure of business efficiency in other lines of human endeavor. In so far as we have commonly accepted standards for school buildings, one may judge of the efficiency of the school plant. Efficiency may further be determined by the degree to which the business management has succeeded in standardizing supplies and equipment to the end that waste is eliminated. It can not be too strongly urged that neither expenditure per unit of population nor expenditure per pupil measures the efficiency of a school system. The question is always not the amount spent, but the return secured for the money expended. The development of standards in business administration will be made possible when we have more adequate reporting in this field. Any comparative study which might lead to the development of standards of efficiency can be made only upon the basis of a large degree of uniformity in accounting and in reporting fiscal statistics.

From the standpoint of the enforcement of compulsory education, which is in effect putting children in touch with the education which we provide for them, the efficiency of a system of public education is measured by the ratio of the number of children in school to the number of children in the community who ought legally to be in attendance. If legal restrictions, control by agencies outside of the school system, or the lack of funds render impossible the enforcement of the compulsory education law, one can not charge that those who are

responsible for the administration of public education are inefficient. It is not probable that any city of considerable size can hope for efficiency in this respect without the establishment of a continuing permanent census.

Efficiency in school organization demands that children be differentiated with respect to their mental, physical, and moral capacities. It is relatively simple by physical examination to determine the need for classes for the tubercular, the blind, the deaf, and the crippled. The fact that special types of education must be provided for these several groups is easily established. It is not quite so simple to determine the adequacy of the means or methods employed in the classes in which these children are found. We may, however, expect in the light of further experience with classes for these children to develop standards as adequate as those which we apply to groups of normal children.

Children who are mentally defective can be discovered by tests which are more or less commonly accepted. The Binet-Simon tests are being applied throughout the United States for this purpose. It is probably not more difficult to discover children of superior ability, and it would seem just as legitimate to judge of the efficiency with respect to school organization of a school system in terms of the provision made for supernormal children as in terms of special classes for defectives.

Moral delinquency demands special treatment. We judge the efficiency of the organization of a school system not infrequently by the provision which is made for those who are habitually truant or who are incorrigible. We should more frequently judge of the efficiency of schools which attempt to reform the morally delinquent in terms of the later activities of the individuals placed in these special schools. We may claim to have reformed a boy or girl only when we know, because of our careful system of following up these special cases, that they do not revert to those practices which we originally sought to eliminate.

We are coming to recognize the need for a differentiated curriculum for children who have finished their elementary school course. It is not easy in the newer types of industrial, household arts, agricultural, or trade education, to determine the needs of the community nor the special aptitudes of children. Any adequate solution of the problem of vocational training will necessitate careful vocational surveys and the largest possible opportunity for the discovery of the special abilities of children. It is interesting to note that many of those who are studying the problem of vocational guidance are coming to speak more in terms of the discovery of special ability in order that adequate training may be given than in terms of places for children to work.

One of the most common tests which has been applied to school systems during recent years is found in the percentages of retardation, elimination, promotion, and nonpromotion. These statistics do not, either singly or taken all together, measure the efficiency of the school system. They are rather symptomatic. A large degree of elimination or retardation is significant mainly in showing the need for changes in curricula or in school organization, in calling attention to a lax enforcement of the compulsory education law, or in showing the need for modifications in standards employed by the school system. We shall, of course, continue to follow closely the statistics of elimination, retardation, acceleration, and promotion. Every competent administrator will introduce cumulative record cards which will enable him to trace accurately the history of all children throughout their school course. Such information will always be valuable, even indispensable, to one who would study carefully a school situation. We shall have gained greatly, however, when we learn to consider these facts as symptoms rather than as final measures of efficiency.

It has been suggested that the efficiency of schools be measured in terms of medical inspection, dental inspection and treatment, the provision for playgrounds and recreation, the satisfaction of children's needs in terms of meals and clothing, and the provision for the education of youth and adults. It is unfair to judge a school system as efficient or inefficient in terms of any one of these activities, except as the community concerned has recognized these activities as belonging to the school. If the social group has determined that these functions shall be added to those commonly belonging to the school as an institution, then it will be possible to measure the efficiency of each of these lines of endeavor by standards which we may hope to derive.

Considerable progress has been made in recent years in measuring the accomplishment of children in the subjects which are taught in our schools. The problem here is to come to recognize the necessity for group measurements and group standards. Such measurements will involve the idea of progressive increase in achievement and of central tendencies and variability within the group. Often such tests of efficiency will be most significant in comparing the units of a single school system. The work of Stone and Curtis in arithmetic, the scales for measuring the quality of merit in handwriting by Thorndike and Ayres, and the scale for measuring English composition by Hillegas, are especially noteworthy.

Possibly the most satisfactory method of measuring the efficiency of a teacher is to be found in the evaluation of her work as indicated by the growth and development of the children with whom she comes in contact. Such a method of measurement would be open to

the objection that groups of children differ greatly in capacity, and that therefore the achievements of several different groups of children during any given period would not, after all, measure the ability of the teachers who taught them. Administrative and supervisory officers constantly pass judgment upon the work of teachers and rate them without any such painstaking method as has been suggested. Any adequate scheme of measuring the efficiency of teachers must take into account those qualities which make for success, and must allow weight to each of these several qualities in proportion to their importance. Such a schedule has been prepared by Prof. E. C. Elliott, and is issued by the State Department of Education at Madison, Wis., as an "outline of a tentative scheme for the measurement of teaching efficiency."

The more we attempt to establish standards and tests the more insistent we will have to be that our practice be carefully described in the records which are made by teachers and supervisory officers. Such material will be most significant for school systems which have organized as a part of their administrative system a bureau of investigation. Indeed, the administrative or supervisory officer of the future may be expected to act largely in terms of measurements which enable him to judge accurately of the efficiency of any element or part of the school system of which he has charge. We may expect that a group of capable investigators will work under the direction of the superintendent of schools to the end that he and the community which he serves may have constantly available the most adequate information possible with respect to the efficiency of the school system.

It may not be claimed that the measurement of the several parts or elements of a school system necessarily indicates the efficiency of those charged with the administration of our schools. It may be that a school system is inefficient because a community is relatively poor, or unusually lacking in progressive leadership. Unusual facilities for the development of a most excellent system of schools may be provided by virtue of the superior intelligence and the large resources of the population of another school unit. The most significant measure of efficiency is progressive development or improvement within the system of schools measured.

Greater progress will be made in the establishment of standards and tests, and in the development of more adequate measurements of the efficiency of school systems, when we establish a committee, a board, or commission on school efficiency. It is of the utmost importance that this committee or board be representative of the most significant scholarship and of the best administrative practice known to our profession. This body should be constituted by the National Council of Education. Its functions should be as follows:

1. It should offer encouragement, expert advice, and opportunity for publication to those engaged in scientific work in the direction of the derivation of scales of measurement, in the application of such scales or units to actual school situations, or in the establishment in any other manner of standards in relation to public education.

2. It should offer expert advice with respect to the nature and scope of surveys, investigations, or inquiries to be undertaken in any part of the United States.

3. It should offer to members of our profession engaged in administrative work the opportunity to secure a scientific investigation of their systems of schools under the direction of professional experts. As the situation is at present, we have the anomaly which permits a politician, an interested book-publishing company, or a personal enemy of the chief administrative officer of a school system to attempt to secure the removal of such an officer without any adequate measure of the efficiency of the school system or the accomplishment of the man whose work is called in question. The establishment of a body of professional experts would in time render such action impossible.

For the work of a committee or board such as is contemplated in the statements made above, a liberal appropriation should be made by the National Education Association, and it is possible that further endowment should be sought in order to make possible those activities which will mean the increase in efficiency of our system of public education and the establishment of our profession.

There is appended a bibliography of 339 titles pertinent to the subject of which the report of the committee treats. This bibliography was prepared for the committee by Dr. I. L. Kandel.

G. D. STRAYER, *Chairman.*

WM. H. MAXWELL,

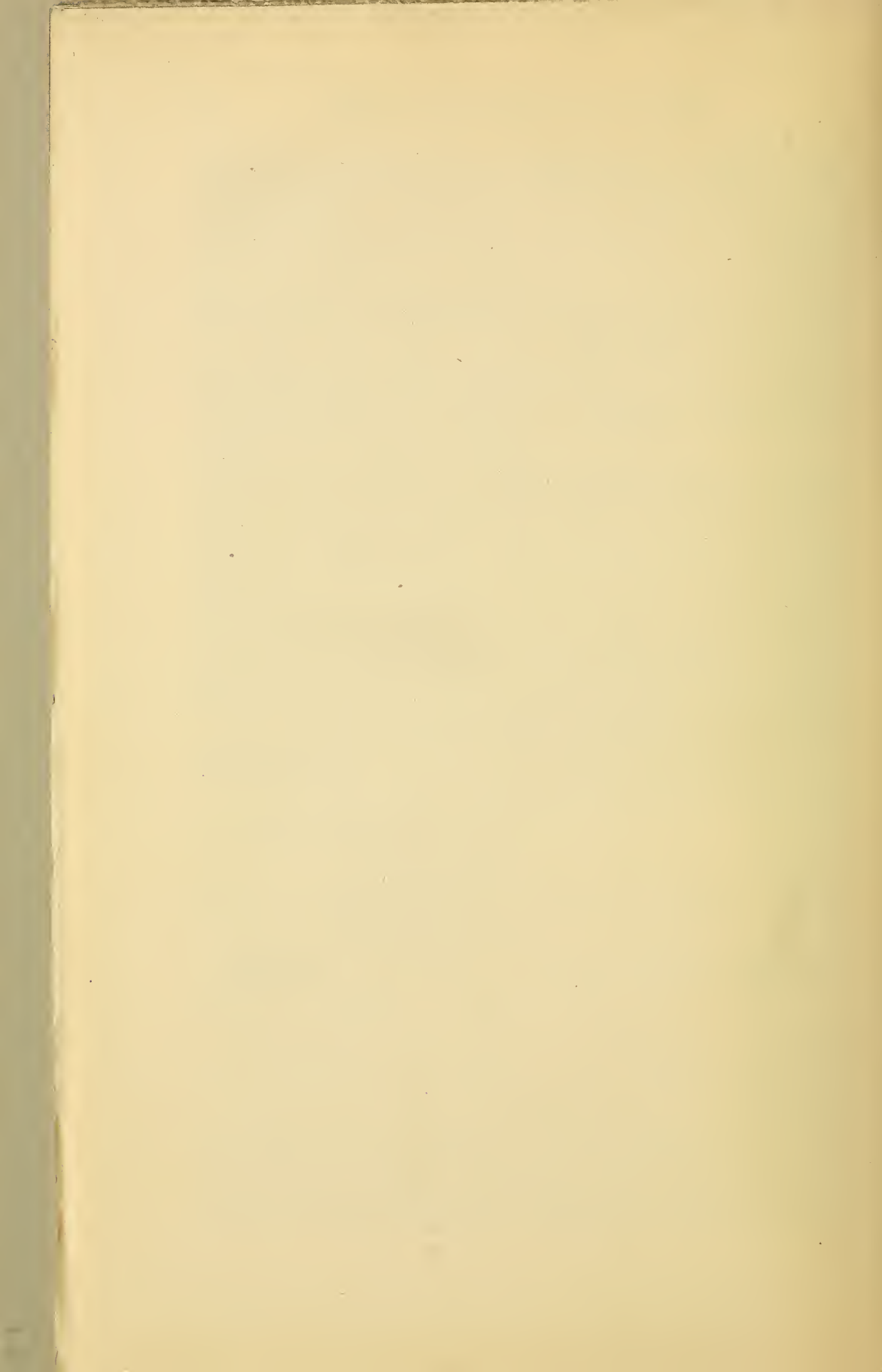
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E. L. THORNDIKE,

J. H. VAN SICKLE,

E. P. CUBBERLEY,

Committee.



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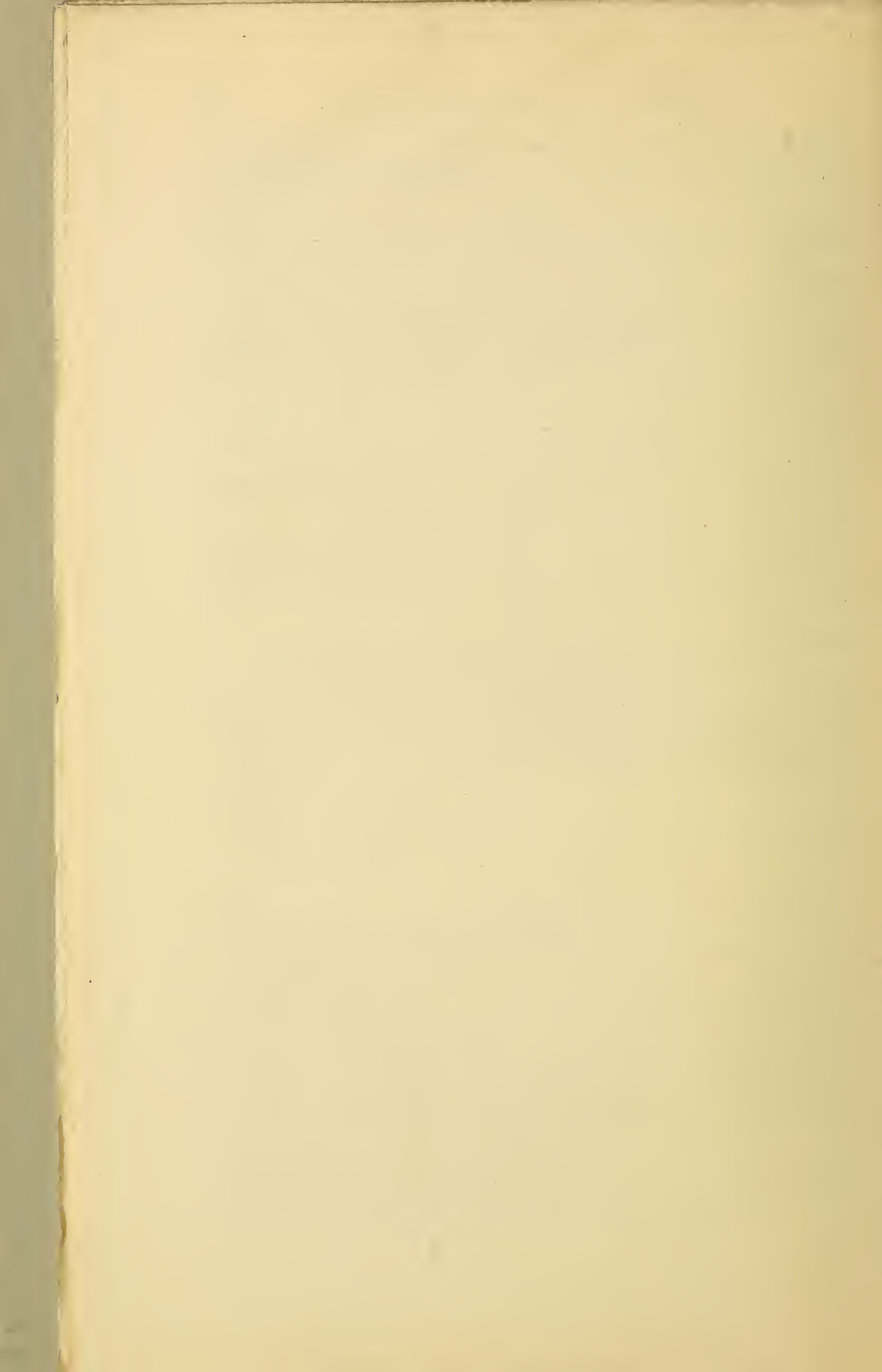
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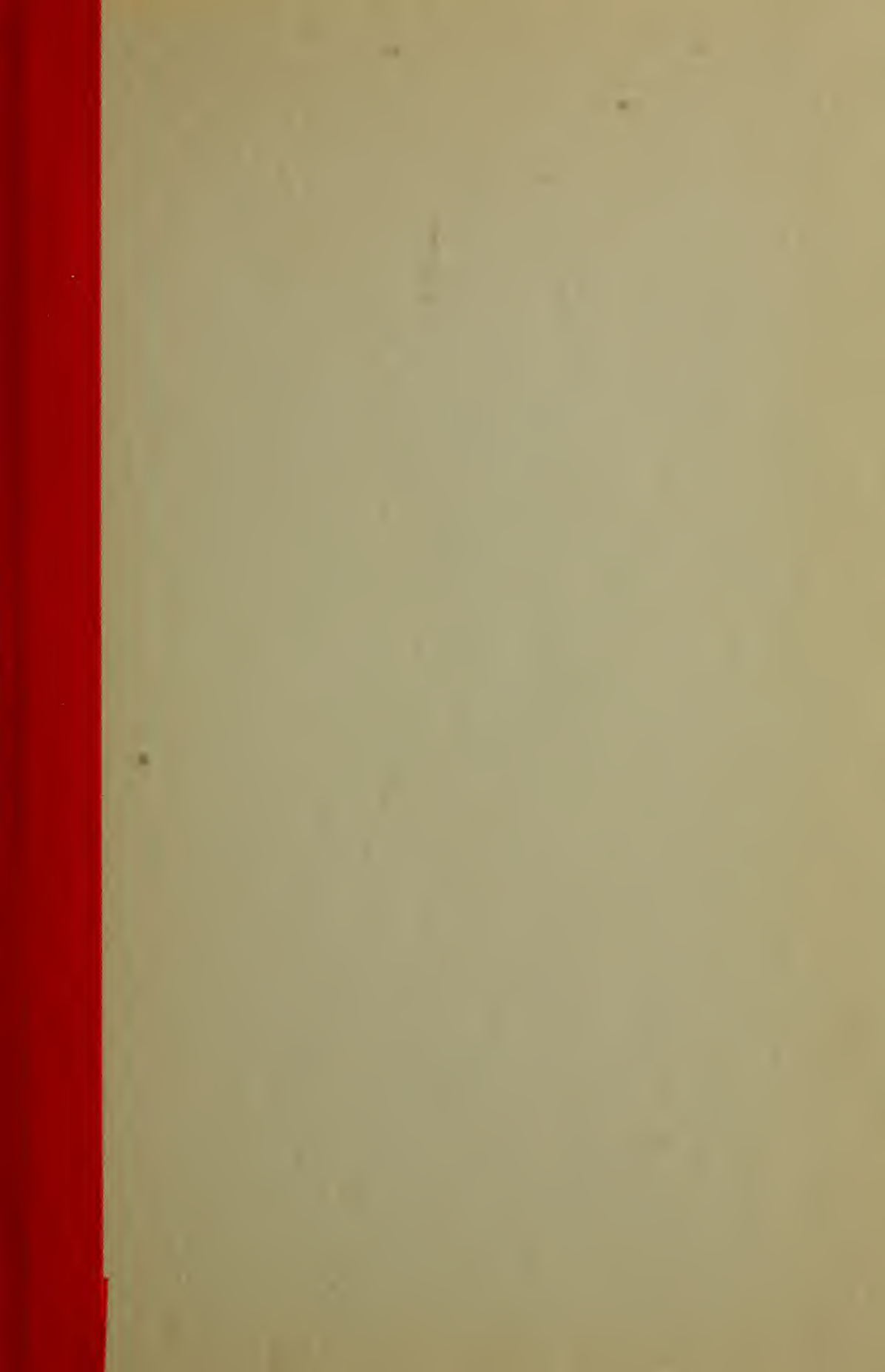
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