



Joint Committee on a phonetic
English alphabet

Report of a Joint Committee
representing the National Educational
Association

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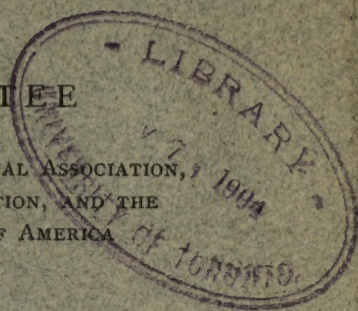


Humphrey Miller



REPORT
OF A
JOINT COMMITTEE

REPRESENTING THE NATIONAL EDUCATIONAL ASSOCIATION,
THE AMERICAN PHILOLOGICAL ASSOCIATION, AND THE
MODERN LANGUAGE ASSOCIATION OF AMERICA

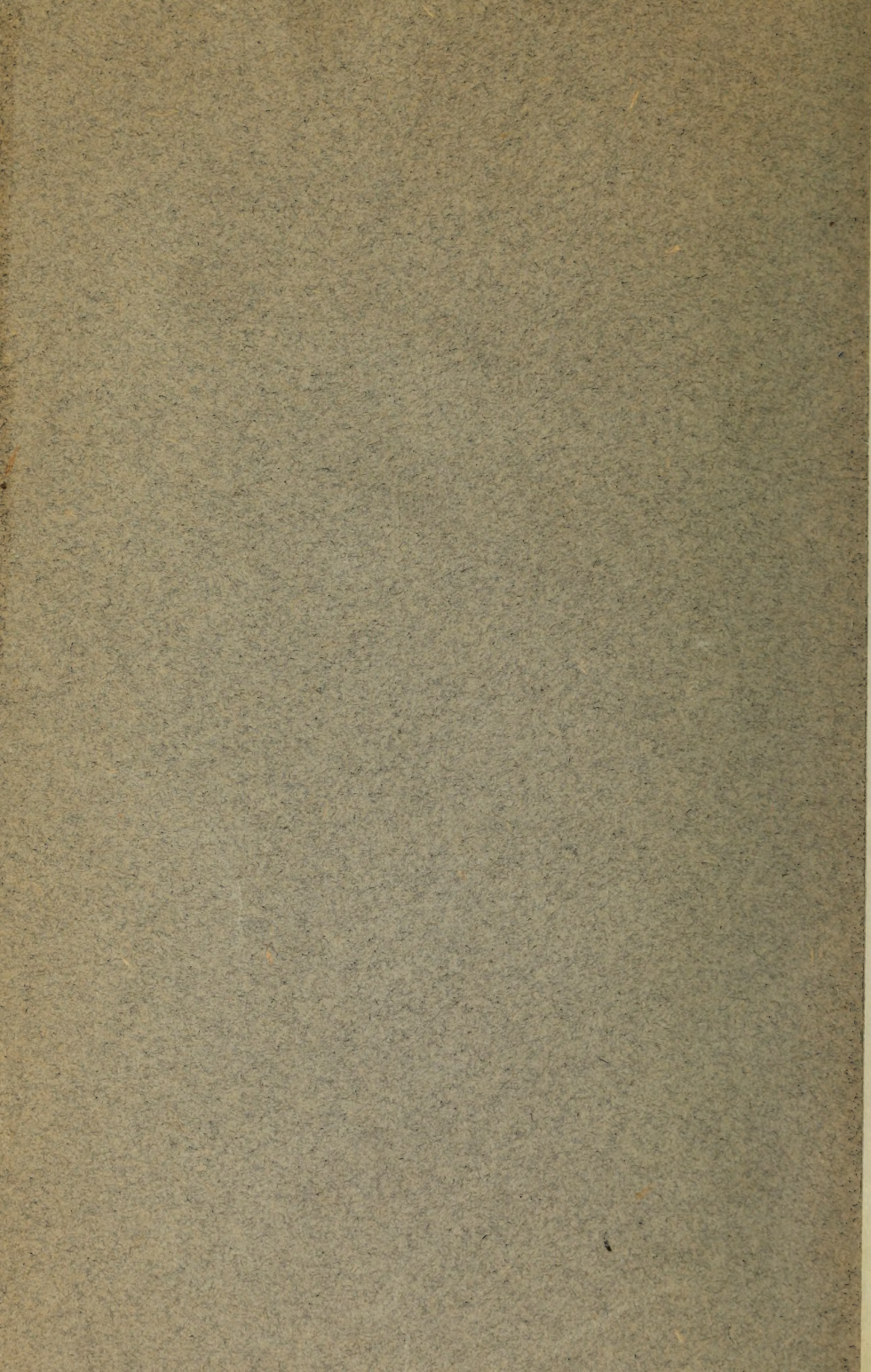


ON THE SUBJECT OF

A PHONETIC ENGLISH
ALPHABET

Printed by
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32-34 LAFAYETTE PLACE, NEW YORK

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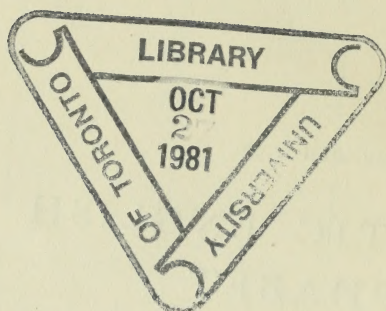
REPRESENTING THE NATIONAL EDUCATIONAL ASSOCIATION,
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NEW YORK, September 1, 1904

*To the Members of the American Philological Association and of
the Modern Language Association of America:*

I have the honor to send you herewith a committee report, the occasion and purpose of which are briefly explained in its first section. As you will see, the document is part of a movement initiated by the National Educational Association and looking toward the adoption of a standard phonetic alphabet for the English language. With this object it is presumed that all scholars will sympathize, however their opinions may differ concerning this and that detail of the preliminary report now submitted. Let us then consider the matter and reach an agreement, if possible.

It is hoped that the report may be discussed by each of the associations above named at its next session, and may ultimately be approved, with such amendments as shall seem desirable. Non-identical amendments, should such be adopted by the two bodies separately, can be referred to a committee of conference.

While the report in its present form is meant primarily for the members of the Philological Association and the Modern Language Association, copies have been sent to a number of persons not connected with either of those bodies, but presumably interested in the subject of a standard phonetic alphabet. Helpful criticism from all points of view is desirable and will be welcomed by the committee.

Respectfully yours,

CALVIN THOMAS, *Chairman*

New York, September 11, 1901

To the Editors of the American Philological Association and of
the American Language Association:

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see and will be welcomed by the committee.

Respectfully yours,

Charles T. Casper, Secretary

REPORT OF A JOINT COMMITTEE ON A PHONETIC ENGLISH ALPHABET

I

THE APPOINTMENT OF THE COMMITTEE

THE committee whose report is here submitted was appointed under a resolution adopted at a joint conference of scholars and teachers held in Boston on the 9th of July, 1903. The conference had been called on the initiative of the National Educational Association and comprised representatives of that body, and also of the American Philological Association and the Modern Language Association of America, the delegates having been appointed by the presidents of these several societies. The object of the conference was to agree upon and promote the general adoption of the best set of alphabetic symbols to be used in dictionaries and text-books for the accurate denotation of the sounds heard in English speech. Professor Calvin Thomas, of Columbia University, was chosen chairman of the meeting. After a prolonged informal discussion, which turned (1) upon the educational importance of providing a single good alphabet to take the place of the many conflicting, and in some cases objectionable, systems now in use; (2) upon the general principles that should govern the choice of symbols, and (3) upon the practical difficulties to be overcome, a resolution was passed, directing the chairman to appoint a committee of five which should prepare a report to be submitted to the joint conference at a future meeting. A further resolution was adopted, declaring it the sense of the conferees that the committee to be appointed should take as the basis of its proposal the phonetic alphabet recommended in 1877 by the American Philological Association.

Under this authorization the chairman, who was by vote made

ex officio a member of the committee, subsequently appointed the following members: Professor George Hempl, at that time president both of the Philological Association and the Modern Language Association, and a well-known worker in the field of phonetics; Dr. Charles P. G. Scott, a lexicographer of large experience; Professor O. F. Emerson, the secretary of the American Dialect Society and an investigator of the history of English sounds; and Mr. E. O. Vaile, a veteran educator and editor of educational journals, to whose efforts in the National Educational Association the calling of the joint conference had been largely due. The committee thus constituted now submits the following report.

II

GENERAL INTRODUCTION

It is well understood that the English alphabet, as ordinarily used, is not well adapted to the clear and exact denotation of the sounds heard in English speech. One of its great defects as an instrument of precision is that it has not letters enough. Twenty-six characters, three of them (*k*, *g*, and *x*) duplicates, must do duty for some forty sounds that need to be graphically distinguished. This means, obviously, that the same letter must often represent a number of sounds, as is the case, for example, with the *a* in *at*, *ask*, *are*, *all*, *about*. Again, we frequently denote two sounds by means of one letter, as the diphthong in *by*, or the two consonants at the beginning of *jaw*; or two sounds by means of two letters neither of which represents either of the sounds heard, as the *ch* in *church*; or one sound by means of two letters, as the *ea* in *beat*, or the *th* and the *ng* in *thing*; or the same sound by several different letters or combinations of letters, as the *k*-sound in *cat*, *kick*, *quit*, *box*, or the identical vowel in *hate*, *day*, *great*, *bait*, *veil*, *they*. Finally, we use many silent letters representing sounds which were once heard but are no longer heard, as the *gh* in *through*, the *e* in *have*, the *k* in *knife*; or sounds which were never heard at any time, as the *s* in *island*, the *g* in *foreign*.

The consequence of all this deficiency, redundancy, and inconsistency is that we can not use our ordinary alphabet for the purposes of scientific precision. But we need an alphabet that can be so used. In our reading, it is true, we get along very

well with the usual spelling, so long as the words are familiar; for the printed form, however badly spelled, serves to call up the pronunciation that we have learned. But suppose that the word is unfamiliar? Our language now contains many words that are first met in books and learned by the young before they have heard them pronounced; and such words are often badly or variously learned because of bad or ambiguous spelling. Suppose that we have to do with technical terms, a foreign importation, a strange proper name? Suppose that we wish to teach pronunciation to the young, or to any others who are learning English? Suppose that we wish to show dialectic differences and to discuss and compare pronunciations? These are some of the occasions for which we need a scientific alphabet capable of indicating precisely how words are pronounced.

But of course precision is a relative term. According to the purpose in view time may be measured precisely enough by years, by hours, or by fractions of a second. So in respect to the graphic representation of speech-sounds, the degree of precision to be desired will depend on the use that is to be made of the proposed notation. The humble needs of the newspaper-reader, and after a fashion those of the dialect-poet, are fairly well met by the alphabet as it stands; but the maker or user of a dictionary needs a finer instrument, and the author of a treatise on phonetics a still finer one. If we take into account all the little variations due to national speech-habit, dialectic tendency, personal idiosyncrasy, degree of stress, proximity of other sounds, etc., we shall see that the number of sounds producible by the vocal organs is beyond computation. And even within the limits of a single language, to say that just so many sounds occur and no more, is somewhat like saying that there are just so many stones in the garden, or just so many colors in the landscape. The expert phonetician, with ear trained by long and close observation, easily distinguishes shades and varieties that most persons can not perceive at all. And for these he must have a notation when he writes for experts like himself.

But there is a need intermediate between that of the ordinary reader and that of the phonetic expert, namely, the need of simple yet sound instruction with regard to the elementary facts of pronunciation,—the need which the popular dictionaries and orthoepic manuals aim to meet. For this purpose the alphabet as

commonly used is insufficient, while any alphabet that would completely satisfy the demands of the expert would be too complicated. To meet this intermediate need phonetic micrometry must not be carried too far. Of course there is room for some difference of opinion as to what the "elementary facts" are. We mean by that phrase those sounds which, without study of other languages than English, and without long and laborious training in phonetics, can be distinguished and reproduced by any one who is willing to give a little serious attention to the subject.

Our alphabet, then, should provide one (and preferably but one) sign for each easily distinguishable sound heard in our language. The primary considerations are that it be easy to learn, easy to read and unmistakable. This means that it should make the largest possible use of the familiar Roman letters, and the least possible use of diacritic marks, which are always more or less confusing. An alphabet of newly invented symbols, tho they were as ingenious as those devised by Bell in his Visible Speech, would have no prospect of coming into general use. Other demands having been satisfied, some regard should be had for beauty, or say rather for that sense of congruity which we have acquired by the habit of reading. This means that we must avoid, if possible, the use of foreign letters and of inverted Roman letters; also the mixture of capital and lower-case letters and of upright and italic letters.

But when we have decided to make large use of the Roman letters, the question arises, *How* shall they be used? This question is of importance more especially in connection with the vowels. Which one of the five sounds now denoted by the letter *a* is the right one to be thus denoted? And how shall we get rid of the confusion in the use of the words "long" and "short," and of the signs commonly supposed to denote length and shortness, but in reality denoting something else? Shall we call the vowel in *take* "long *a*" (the name riming with *day*), and that in *tack* "short *a*"? Shall we call the vowel of *pin* "short *i*" (that is "short *eye*"), while we give the name of "long *i*" to the diphthong in *pine*? To do so is meaningless and bewildering.

Here one naturally asks, How did the confusion come about? It was in this way. Five hundred years ago the words *take* and *tack*, for example, both had the quality of vowel now heard in *calm*, but that of *take* was long, while that of *tack* was short. The

sounds were properly called "long *ah*" and "short *ah*." In the course of time the "long *ah*" changed—it "rose," as phoneticians say—to what had been, and what the non-English world still calls, an *e*-sound (that now heard in *take*), while the "short *ah*" rose only to the sound now heard in *tack*. This change took place on a large scale without any corresponding change of spelling. The consequence was that the name of the letter became *ay* instead of *ah*, and the vowel of *take* was called "long *ay*," and that of *tack* "short *ay*," tho the adjectives "long" and "short" were no longer applicable. (The "long" of the *a* in *tack* is really the vowel heard in *air*, while the true "short" of the *a* in *take* occurs only in a few words—for example, as the first vowel of *chaotic*, *acrial*). A similar confusion overtook the old vowels *e* and *i*. The former usurped the name and to some extent the functions of the latter, while the latter, when long, became a diphthong and got the corresponding name of *eye*.

When at last certain lexicographers of the eighteenth century began to give serious attention to the marking of pronunciation, they fell in with the established but erroneous and confusing use of the words "long" and "short," and commenced using the macron and the breve accordingly. This was done in 1775 by Perry, who used no further diacritic marks except the acute and the grave accent. Sheridan (1780) and Walker (1791) denoted the different sounds of the vowels by means of small figures printed above the letter. This method, however, found little or no favor with later lexicographers, who followed rather in the footsteps of Perry, but indicated certain distinctions by means of a dot, or two dots, printed either above or below the letter. In this way various systems were devised, of which the best known, at least in the United States, is that which has been evolved in the successive editions of Webster, beginning in 1828. A conspectus of this and other notations accompanies this report as Appendix I.

A glance at the chart will bring to view the appalling confusion at which we have arrived. While there is some agreement, each one of our great dictionaries may be said to have a system of its own. For this lack of uniformity, which grew naturally enough out of the laudable desire for improvement and out of the exigencies of competition, no one can reasonably be blamed; but viewed as a concern of the general public, the teachers and the school children, it is none the less a great misfortune. The inter-

ests of education call for a uniform system to be used in all works that have occasion to mark pronunciation.

Can we then unite, say, upon the system of Webster, or Worcester, or the Century? For reasons that in no way impeach the general excellence of these dictionaries, the committee is of the opinion that such a basis of agreement would not, at this date, be the best. The great objection to these notations is that they are out of harmony with modern scientific usage. The last half-century has seen the development of a science of phonetics that is no more national than the science of physics. Its literature is extensive, its workers are numerous, and a common notation, already to some extent attained, is greatly to be desired. Having grown up mainly among the peoples that have inherited the Latin alphabet, this science of phonetics makes large use of the Roman letters, employing them, however, in their original or historical values. That is to say, the letters *a*, *e*, *i*, *o*, *u*, denote the long sounds heard in *palm*, *mate*, *marine*, *note*, *boot*, and the corresponding short sounds,—in the proper sense of the word “short,” that is, uttered in less time but otherwise the same. It is true that the name “short *e*” is sometimes loosely applied, even by phoneticians, to the vowel of *met*, altho a mere prolongation of the vowel of *met* does not produce that of *mate*. In passing from *met* to *mate* the tongue is slightly raised, making a narrower or “closer” passage and hence a vowel of slightly different quality. To be exact one must speak of the vowel of *met* as the “open short *e*,” and of the vowel of *mate* as the “close long *e*.” There is a similar difference between other vowels sometimes loosely paired as “long” and “short.” We shall recur to this matter farther on. At present the important point is that the vowel of *mate* is historically an e-sound, not an a-sound, and that its “short” is not at all the vowel of *mat*.

Now it is very desirable that the English-speaking peoples, if they are to adopt an alphabet for popular-scientific purposes, should adopt one that is in harmony with international phonetic science. Complete agreement upon an international phonetic alphabet is probably out of the question, for the reason that each language has certain sounds peculiar to itself, and has also its own more or less peculiar way of using the Roman letters. In any case an international alphabet would contain a much larger number of letters than are necessary for the purposes here in view. Our concern is with

the representation of English sounds; but the committee is strongly of the opinion that a good alphabet for English should conform in essentials to international usage, wherever such usage has become fairly well settled. We can not afford, it is not to our interest, to insulate ourselves. The argument is much the same as that which has led the scientific world to adopt the metric system of weights and measures and a common code of electrical units. When it comes, then, to a choice of symbols for our sounds, settled international usage must be regarded as a very important criterion.

Does any one ask, perchance, why we should go to the continentals instead of insisting that they come to us? The answer is that it is we rather than they, or we much more than they, who have departed from the good old path. The vowel-scheme above referred to was once the scheme of the English language, as well as that of the other languages that adopted the Roman alphabet. But it has changed lamentably in our hands. The consequence is that such spellings as *fate*, *seen*, *wine*, *house*, while they seem natural enough to us because we are used to them, strike the rest of the world as an utterly perverse use of the Roman letters. From their point of view the words should be spelled *fêt*, *sîn*, *wain*, *haus*. Can we expect those who have retained original conditions to join us who have departed from them for the worse? For example, can we expect those who have always used the letter *i* in its original value to give up their own good custom and adopt our bad custom of using *i* for the diphthong in *wine*, and of representing its original and proper sound by *ee*, as in *seen*, or *ea*, as in *bean*, or *ie* as in *mien*, or *ei*, as in *receive*? Such a question answers itself. It is not for the continentals to come to us in our perversity, but for us to go to them, and in so doing to return to the good habits of our own youth—the habits we had before we departed from the path of orthographic rectitude.

Fortunately the use of the Roman letters in their original values has now become familiar to a large part of the English-speaking public, and tends to become still more familiar thru the extensive study of German in our schools and colleges, and thru the general adoption, at least in the United States, of the so-called Roman pronunciation of Latin. Moreover, the principle is supported by very authoritative practice. It was adopted in the phonetic alphabet recommended in 1877 by the American Philo-

logical Association; and that alphabet, with the addition of diacritic marks for the unstressed vowels, is used by the Standard Dictionary in its careful treatment of pronunciation. The principle of employing the fundamental vowel-signs in their earlier values has furthermore been adopted by the makers of the monumental Oxford Dictionary,—a work of the highest possible authority—as also by the United States Board of Geographic Names, the Bureau of American Ethnology, the Royal Geographical Society, and the Government of India. The principle is carried out in the alphabet of the spelling-reform associations of the United States and of England, and is followed in most recent dictionaries and glossaries of Asiatic, African, Polynesian, and Amerindian languages.

The proposal of the Philological Association was conceived as a practical reform alphabet, which might gradually come into use in literature and popular print as a substitute for the ordinary spelling. The aim was to kill two birds with one stone: to satisfy the more urgent and fundamental requirements of a scientific method of writing English, and at the same time to depart so little from the traditional spelling as to leave room for the hope, at least for the chance, that the new alphabet might in time win its way into general favor as an ordinary mode of writing the language. Great caution was therefore felt to be necessary. It was a guiding thought that, “in changing and amending the mode of writing a language already long written, regard must necessarily be had to what is practically possible quite as much as to what is inherently desirable.” The result was a compromise between the more ideal demands of phonetic science and the practical needs of spelling reform.

The scheme was in brief as follows: The eight letters *a*, *a*, *e*, *i*, *o*, *o*, *u* and *u*, when used without any mark of quantity, were to represent the sounds heard in *la* (quickly uttered), *at*, *pen*, *pin*, *obey*, *hot* (as pronounced with slight rounding),¹ *full*, *but*. The corresponding long vowels, as heard in *palm*, *care*, *day*, *merine*, *note*, *law*, *fool*, *burn*, were to be marked when necessary with a sign of quantity. It was thought, however, that in ordinary print it would not be necessary to mark the quantity of the long vowels,

¹ See below, page 18. In passing from the vowel of *not* to that of *note*, the corners of the mouth come together, making with the lips a roundish passage. This process is technically called rounding.

with the exception of e and i; and as the signs $\bar{e}$ and $\bar{i}$ were associated in the general mind with the sounds heard in *feet* and *pine*, it was suggested to substitute the circumflex ($\hat{e}$ and $\hat{i}$) when using the alphabet for ordinary purposes. The consonants in *ye* and *we* were to be denoted by y and w. The other consonantal letters were, in general, to be employed as usual, and a number of digraphs and alternatives were retained out of deference to tradition and for the convenience of printers during an expected "transition period." Thus c was kept, but was always to have the sound of k; at the same time k was not discarded, and q and x were admitted as alternatives. Thus one might spell quit, cwit, or kwit; fix, fics, or fiks. For consonants usually represented by digraphs some new letters were suggested as desirable, but no forms were expressly recommended. The digraphs th, sh and ng were retained for the simple sounds heard in *thin*, *ship*, *sing*; and the digraphs dh and zh were recommended for the simple sounds heard in *this* and *azure*. For the ch of *chin*, which is a combination of a variety of t with a variety of sh,¹ the familiar ch was retained; and for the corresponding voiced sounds in *jaw*, a combination of d and zh, the j was retained.

If we make proper allowance for the mixed aims of the distinguished scholars who proposed this alphabet, we can only conclude that their scheme was as promising as any that could have been devised. Were it a question of attacking the old problem with precisely the old aims, there would be no occasion for this report. The old one of 1877 is good enough. And even on its popular or reformatory side it has not been futile. It has directed attention to the badness of much of our conventional spelling, has provoked wholesome discussion and given aid and comfort to reasonable spelling reformers. But the new alphabet has not replaced the old one in popular print to any great extent, and there are no signs that it is about to do so.

Meanwhile the purely scientific aspect of the old problem has become increasingly important. Apart from any question of spelling reform, and even if we were all opposed to such a reform, we need, the world needs, *now*, without further waiting, an adequate, simple, precise, unambiguous, and generally accepted notation for the sounds of the English language; a notation that we can teach to the young in school, thereby training their vocal

¹ See below, page 35.

organs and leading them to pronounce the language more accurately and more intelligently; a notation that will at the same time facilitate our learning of foreign languages, and the learning of English by foreigners; a notation, finally, that will enable the educated adult to consult whatever good dictionary comes to hand and find out how a word is pronounced without referring to a special and peculiar "key to pronunciation." How far the use of such a notation may, in the long run, make for practical spelling reform, is a question which the committee are willing to leave to the future. Their present problem is to recommend an alphabet that, so far as it goes, shall fully deserve the name of scientific.

In attacking this problem the committee have wished, while getting rid of the defects and redundancies which resulted from an enforced attempt at compromise with the traditional spelling and the convenience of average printers, to avoid unsettling anything that was wisely settled twenty-seven years ago. We turn our attention first to the vowel-scheme. Here it seems necessary to provide for two new signs: (1) a sign for an a-sound lying between â and â, and heard very commonly in the United States in such words as *ant*, *bath*, *cast*, *France*, *laugh*; (2) a sign for the unstressed vowel heard in the second syllable of *salary*, *celery*, *atom*. With regard to the former see below, page 23, where everything is said that needs to be said. As for the latter, a word of explanation will be in order at this point.

A defect of the alphabet proposed in 1877, if we have regard to its scientific rather than its popular aspect, was its lack of provision for the unstressed vowels. It was assumed that these might be left to take care of themselves. But a truly scientific notation must evidently take them into account; for an English sentence written in the proposed alphabet and uttered in exact accordance with the scheme would give a travesty of the language. Broadly speaking it is only when supported by the accent that the vowels have the phonetic values assigned to them in the scheme. In unstressed syllables the sounds undergo a change which, in the lack of a better name, may be called "obscuration." The quality and extent of this obscuration vary somewhat with the style of the discourse, the idiosyncrasy of the speaker and the nature of the neighboring consonants, but it always tends in one of two directions: either toward the *i* of *pin*, as in the second syllable of *added*, *honest*, *captain*, *message*, *menace*, and in the first syllable of *example*,

refer, eject; or else toward the *u* of *but*, as in the second syllable of *sofa, moment, Robert, separate, ebony, guttural*, or in the first syllable of *about, mature, attack, political, tureen*.

These "obscure" vowels are indicated in the Worcester, Standard, and Century dictionaries by means of diacritic marks printed below the letter. For any obscure or light vowel Worcester uses a dot. For a vowel obscured in the direction of *i* the Century uses a dot, the Standard a small arc convex downward; while for a vowel obscured in the direction of the *u* in *but*, the Century uses two dots and the Standard a small arc convex upward. The advantage of a system like either of these is that it preserves the usual appearance of the word, or something very like it,—which counts for much with the general public, tho not with phoneticians. Strictly speaking, however, the diacritic evades the difficulty instead of conquering it, for it only tells the reader that the marked vowel is *not* pronounced as usual; leaving him to determine by mother-wit, by the help of a supposedly familiar keyword, or by reference to explanatory matter elsewhere, just how it *is* pronounced. In the end, too, such a system becomes somewhat complicated, on account of the necessity of printing the one or the other diacritic under so many different vowels. The printer must use ten or a dozen different signs which, after all, do not denote that number of different sounds. For the purposes of a very precise notation we undoubtedly need a sign for an unstressed vowel between the *e* of *set* and the *i* of *sit*. The committee considered the question of recommending such a letter, but finally decided not to include one in the alphabet of medium precision.

For the other "obscure" vowel, however, a sign is obviously needed. It is one of the most common sounds in the language. One can not get along without a letter for it if one is to make any pretense of accurate phonetic writing. See below, page 30.

With regard to the marking of quantity we think it sufficient to recognize two grades, which may be roughly called long and short. In reality the matter is not so simple. One might distinguish three grades, as short, ordinary, and long; or five, as very short, short, ordinary, long, and very long. But to attempt a graphic notation of these minute differences, which grow out of sentence-stress, personal idiosyncrasy, drawling, singing, etc., would be unwise. On the other hand, it is important to make the rough distinction between long and short which is made after a fashion by

the conventional spelling. It is suggested that a vowel be left unmarked when it is very short, short, or of ordinary length, and marked only when it is clearly and unmistakably long. As a sign of length the circumflex has the advantage, as compared with the macron, that â, ê, î, ô, û, are not associated in the general mind with other sounds than those they are intended to denote.

Of the consonant-letters included in the alphabet of 1877, b, d, f, g, h, l, m, n, p, r, s, t, v, w, and z require no comment here. They are a matter of course. For the rest we think it very desirable to carry out systematically the principle of one letter and but one for each simple sound. This means that the digraphs th, dh, sh, zh, and ng must be replaced by simple letters; that a choice must be made for the k-sound, and that the letters q and x must be discarded. As for ch and j—the most perplexing problem of all—the committee finally decided to admit two notations. See below, page 35.

A word, next, upon the marking of stress. Like the quantity of vowels, syllabic stress is of many grades, and not simply of two. For all ordinary purposes of graphic representation, however, it is sufficient to distinguish two grades, as strong and weak, or primary and secondary, leaving unstressed syllables without a mark. As a mark for strong stress the acute accent written after the stressed syllable is the most widely used, and, on the whole, the most satisfactory. Secondary stress is sometimes denoted by the grave accent, which is apt to be confused with the acute; more often by two acutes, which sign is also open to objection, because one naturally thinks that two marks should denote double stress. Perhaps the best mark for secondary stress is the turned period thus: in'dica'tor, po'pular'ity.

It remains now to explain why the committee has seen fit to go a little beyond its immediate task. The mandate of the Boston conference was to look into the subject carefully and agree, if possible, upon the best "key alphabet," that is, an alphabet to be used in dictionaries, text-books, manuals of orthoepy, etc., where words are respelled for pronunciation. Of course none of the conferees expected that the proprietors of the great dictionaries, which have cost immense sums of money, would make haste to print new editions merely because a body of scholars had recommended a certain alphabet. On the other hand, it seemed not unreasonable to hope that, if expert and authoritative opinion could be enlisted

in favor of a single system as on the whole the best, the proprietors of the dictionaries would find it to their interest to adopt it in the course of time, as they might have occasion to make new editions; and that thus we should gradually emerge from the present chaotic conditions and come into the possession of a standard phonetic alphabet.

But there is a great difference between the needs, say, of the monumental Oxford Dictionary, which will tell posterity a thousand years hence just how Englishmen pronounced their language in the year 1900, and the needs of a little school manual intended to teach pronunciation to children. What is good enough for the latter would be hopelessly inadequate for the former, and what is positively necessary in the former would be worse than useless in the latter. And yet it is eminently desirable, if it can anywise be brought about, that the alphabet used in the greatest of the popular dictionaries should be fundamentally the same as that used in the smallest. Each letter should have its definite value, to be learned by every one as a part of his early education. It should always mean the same thing. And if there is need of greater precision than is provided for in the standard alphabet—in which over-refinements must be avoided—the need can best be met by using slight modifications of the standard letters, such as will leave their form essentially intact.

To illustrate what is meant. Suppose that we have in our accepted phonetic alphabet the sign $\hat{o}$ for the vowel usually pronounced by Americans in *load*, and the sign $\hat{e}$ for the vowel of *lord*—two signs which are ordinarily quite sufficient for the long o-sounds. But now it happens that neither of these exactly hits the sound that is often heard in *story*, a vowel intermediate between the other two. How shall we denote this “open long” *o*, if we need to distinguish it for some special purpose? Shall we take the Greek omega, or an italic *o*, a turned *c* (φ), or an *o* with a hook or a dot, or some other mark? This is what phoneticians generally do, with the result that, the more precise their notation is, the worse it looks and the more difficult it is to read. A better plan would be, we think, to use an *o* with the circle imperfectly closed, in other words slightly “open,” at the top. This would look to the inexpert reader—unable, perhaps, to appreciate the distinction intended—like the *o* he expects; while the expert would see it as an “open *o*.” A similar slight modification of the other vowel-

signs would result in an expanded phonetic alphabet of maximum precision. See Section VI and Appendix II.

And there is another need on the opposite side,—that of a simplified alphabet for easy phonetic writing and practical spelling reform. Probably the majority of the population would say that no such need exists, but the committee do not take that view. The last quarter of the nineteenth century witnessed a notable access of interest in spelling reform. Much seed was sown, whereof the greater part fell on very stony ground, but some took root and grew. Of course no one expects—no one ever did expect—that our spelling is going to be changed “all at once.” Still, the subject is of perennial interest and importance, and the agitation of it tends to diffuse sound knowledge,—knowledge of what spelling is for, and of the nature of the bond between spoken and written language. This at any rate can never be undesirable. There have always been spelling reformers, there always will be. And this is as it should be; for the progressive improvement of spelling and writing has precisely the same basis of science and reason as the progressive improvement of education, morals, law, machinery, or any other part of human life. Moreover, it is good practice for any one to write a letter or transcribe a passage of literature in exact phonetic spelling. One learns in that way much that one did not know before.

But an alphabet good enough for ordinary phonetic writing is not good enough to be used as a “key to pronunciation.” The requirements are different. When one consults a dictionary to find out how a word is pronounced, the mind is fixed for the moment on the subject of pronunciation. One is athirst for exact knowledge and should have it. But in reading, one’s attention is fixed on the subject-matter, and whatever diverts the mind unnecessarily from that is felt as an annoyance. In rapid writing one can not stop to ponder the length of a vowel, and whatever marks one uses should flow as naturally from the pen as does the dotting of an *i* or the crossing of a *z*. Mere quantity, for example, where no difference of quality and no possibility of error is involved, may be left to the reader’s divination.

We proceed then in Section III to the task set for us, which was to recommend a phonetic alphabet of medium precision for popular-scientific purposes. In Section VI we suggest a possible expansion of this alphabet into one of very great precision; and

in Section V an abridgement of it suitable for all the ordinary purposes of easy phonetic writing and practical spelling reform. But all three alphabets are fundamentally the same.

III

PROPOSAL OF A REVISED PHONETIC ALPHABET

Vowels: â, a, â, a, â, ê, e, î, i, ê, e, ô, o, û, u, û, u, ə.

Consonants: h, k, g, ŋ, y, t, d, l, r, n, s, z, ʃ, ʒ, ʒ, ʒ, ɸ, ɸ, p, b, m, f, v, w.

Diphthongs: ai, au, ai, oi.

Arranged as nearly as possible in the familiar *abc* order, the letters and their names are as indicated in the table below. The name of a vowel is its phonetic value as uttered separately, and of course with stress; the always unstressed [ə] being called "weak ə" to distinguish it from the stressed [ʊ]. The name of an explosive consonant, and also of [h], [y] and [w], is its phonetic value followed by [i]; of any other consonant, its phonetic value preceded by [e].

Letter	Name	Key-word	Letter	Name	Key-word
â		art	ê		north
a		artistic	ə		august'
â		air	ô		note
a		at	o		poetic
â		ask	p	pî	pit
b	bî	be	r	er	rat
d	dî	do	s	es	set
ê		mate	ʃ	eʃ	ship
e		met	t	tî	ten
f	ef	fee	ɸ	eɸ	thin
g	gî	go	ɸ	eɸ	that
ŋ	eŋ	sing	û		mood
h	hî	he	u		push
î		marine	ʊ		urge
i		tin	ʊ		hut
j = dʒ	jî	jaw	ə	weak ə	about
ç = tʃ	çî	chew	v	ev	vat
k	kî	kin	w	wî	win
l	el	let	y	yî	yes
m	em	met	z	ez	zest
n	en	net	ʒ	eʒ	azure

It will be observed that the alphabet consists of thirty-four letters, which number is increased to forty-two by the use of the circumflex—the only diacritic mark required. The circumflex over a vowel-sign denotes primarily length, but in some cases also a concomitant closeness or roundness. This point is of importance for the proper understanding of the notation. Between [e] and [ê], [i] and [î], [o] and [ô], [u] and [û], there is a difference of quality as well as quantity. Were we proposing a notation of maximum precision, it would be important to use a quantity-mark which should be nothing else; but in that case we should need, for example, four signs for the i-sounds: one for the open short in *pit*, a second for the open long heard sometimes in *fear*, *serious*, a third for the close long in *marine*, and a fourth for the close short in *react*. A similar need would arise in connection with the e-sounds, the o-sounds and the u-sounds. But, as has been seen, the alphabet here described does not aim at maximum precision; and in a notation where simplicity, economy, and readableness are very urgent considerations, the open long *i*, heard in *serious*, as pronounced by many with an approximation to *Sirius*, may very well be merged with the close long [î] heard in *seen*; while the close short in *react* may be merged with the open short in *pit*. In this way we reduce the four i-sounds to two and are enabled to denote the two by means of familiar and instantly recognizable signs.

It should be borne in mind, then, that each letter, and especially each vowel-letter, denotes not a single invariable sound, but a type of sound, or a certain range of quite similar sounds. The pronunciation of each letter is indicated by means of key-words,—a rough method but the only one available. The difficulty of finding good key-words arises from the fact that the words chosen may be pronounced differently in different parts of the English-speaking world, or by different persons in the same part. For example, if an American from one of the Northern States wishes key-words for the shortened *a* of *palm*, he thinks perhaps of *what*, *yacht*, *watch*, *squad*, *quality*, and the like; or he may select examples from the very numerous words written with so-called “short o,” as *hot*, *not*, *odd*, *cob*, *box*, *copper*. But both these classes of words are uttered by Englishmen and by some Americans with a slightly rounded vowel (like that heard usually in *august*'), and this rounded vowel, which we denote by [ø], is regarded as “standard”

English. The dictionaries tell us to pronounce *what* and *quality* as [hwet] and [kweliti]. Thus altho *what* and *not*, as pronounced by the majority of Americans, furnish good illustrations of the shortened *a* of *palm*, we can not use them as key-words without running the risk of misleading certain readers and seeming to put forward our own "dialect" as "standard English."

To give another illustration of this difficulty. When a key-word is needed for long *o*, it is natural for an American to take such words as *boat*, *note*, *gold*. But an Englishman, at any rate a Londoner, pronounces these words with a diphthong, which the English phoneticians write variously as *ou*, *ow*, or *oʷ*. Shall we then say that this diphthongal utterance is normal English, or that it is London dialect? It is not for the committee to decide such questions, since our concern is with the facts, and not with theories or ideals of pronunciation. On the other hand, we must take note of such important and characteristic variations (whatever we may regard as "correct"), and provide a notation adequate to represent them.

These are examples of the difficulty that constantly arises in the choice of key-words. It should be understood, therefore, that the words given are often only an approximation; but whenever it becomes necessary to use one that is particularly ambiguous, it is preceded by an asterisk referring the reader to explanatory matter in the ensuing notes.

As for the arrangement of the letters, we begin with [a] and proceed with the palatal or front vowels of the series ending in [i]; then we return to the "low-back" position and proceed with the vowels of the labial or rounded series ending in [û]. In enumerating the consonants we begin with those produced farthest back in the mouth and proceed outward, considering first the explosive consonant of each contact-region. This seemed, on the whole, the most convenient of the many arrangements possible.

It is presumed that the letters will generally be used in the perpendicular or "Roman" form, but they can be cut as italics if it is desired.¹ As we use Roman forms in this report and must

¹ As some of the needed types were not to be had on the market in the size and style required, the committee ordered a number of matrices made specially for this report. Great care was taken with the drawings, but notwithstanding that fact certain letters are not exactly what they should be. The general intention is, however, clear in every case; and the reader is requested to judge by that and not to assume that the exact forms, as they appear in the text, are put forward as unimprovable finalities of typography.

use them in connection with other print, we have adopted the expedient of bracketing the letters of the Revised Phonetic Alphabet and all words or groups of words respelled in them. Italics are employed for words cited in the usual spelling. The letters are numbered that they may be referred to conveniently, but the diphthongs, being combinations of other letters, are not given numbers of their own. They are discussed in sub-sections of the numbers relating to their first element.

The letters are given only in lower-case Roman type. It was not thought necessary, for the purposes of this report, to go to the expense of having a large number of new matrices made for capitals and script letters. These can easily be provided when the need arises.

I. â

*art, calm, palm, father, ardor, retard, aha, mamá; *ask, *aunt, *path.*

In American English [â] is heard chiefly before *r*, but Londoners and some Americans pronounce it also before *f, s, th, nt, ns, nch*, in a number of words such as *aunt, ask, path, basket, master, pass, past, last, haunt, vaunt, taunt, lance, France, launch, staunch, bath, after, quaff, laugh*. Most Americans pronounce [â], not [ẫ], in the majority of these words, but [ê] in certain book-words such as *taunt, vaunt, haunt*. As to the use of the "transition" [ẫ], see No. 5.

The rounded Scottish [ẫ]—"fawther" for *father*—may best be written [ê].

2. a

**aha, *mâma; *what, *watch, *yacht, *squad, *quality; *not, *hot, *cob, *fop, *rock, *copper.*

The sound meant is the shortened [â] of *palm*. When unstressed it tends toward [ê]; *aha, mâma*, becoming [êhâ, mâmê]. The [a] is heard in these words only when they are uttered carefully with the same quality of vowel in both syllables.

In British speech [a] is a rare sound, but in the Northern United States it is very common, being written *a* (mostly after a labial) in several words represented by *what, watch*, etc., and

as so-called "short *o*" in a much larger number, like *not*, *hot*, etc. The sound [a] is also heard very frequently, in the speech of those who always pronounce *r* (see No. 27), in words containing [r] followed by a voiceless consonant; thus [a] in *barter*, *marker*, while *barber*, *larger*, have [â].

2¹. ai

by, *die*, *dye*, *eye*, *height*, *fine*, *high*, *sign*, *find*, *aisle*.

This very common diphthong consists of [a] and [i] uttered in one syllable. In *aye*, as spoken deliberately in voting, the [a] can be more plainly heard than in *eye*.

The combination [ai] is normal, but the first element varies a good deal in the dialects. The Cockney makes the diphthong [ui] or [øi], while the Irishman converts it into [øi], his *fine time* becoming [fein teim].

2². au

now, *how*, *mouse*, *flour*, *sauerkraut*.

Here again there is some dialectic variation of the first element. A familiar American (chiefly Southern) pronunciation of *house* is [haus] or [hæus], while the Yankee drawl makes it [hâus].

3. â

air, *heir*, *care*, *bare*, *bear*, *lair*, *pair*, *pare*, *pear*, *there*.

In standard English [â] occurs only before *r*, but many Americans pronounce it before other voiced consonants, particularly in monosyllabic words, such as *bad*, *cab*, *have*, *man*, *lamb*. See No. 4. In its origin [â] is usually either a prolongation of [a], as in *pair*, from Latin *parthru* Old French *paire*, and *pare*, from French *parer*, or else it has resulted from the diphthongization of [e], as in *pear*, Anglo-Saxon *peru*. The old diphthongal quality of the *ea* in *pear*, *bear*, *wear*, etc., was lost long ago, but the close affinity of [â] and [e] is seen in the varying quality of [â]. According to Storm, an excellent observer, the English (*i.e.* London) vowel in *air*, *care*, is between the [a] of *sat* and the [e] of *set*. He de-

notes it by the Greek ε . In American English [â] and [a] vary little except in quantity.

4. a

*at, back, batch, bang, cash, manner, matter, tap, arrow, fallow; *add, *bag, *cab, *man, *lamb *has; *abhor, *accept, *Atlantic.*

The first group of words with asterisk represent a class (mostly monosyllabic words ending in a voiced consonant) in which the [a] is converted into [â] by many American speakers. This lengthening does not belong to universal English, but is part of the so-called "American drawl."

The second group of key-words with asterisk represent a very numerous class in which [a] occurs in an unstressed initial syllable. In such case the vowel retains its proper sound only when the word is uttered deliberately; in the flow of connected talk it becomes [ə] (see No. 18). Two expedients are open to the dictionary-maker in dealing with such words: (1) either to adopt a simple diacritic mark for obscuration (such as a dot over or under the letter); or better (2) to repeat for the colloquial or "familiar" pronunciation [aksépt, əksépt].

The discrimination of [a] from [ɑ] in the manner here recommended was proposed in the phonetic alphabet of 1877. From the international point of view it would be preferable, perhaps, to interchange the signs, and use [a] for the vowel of *art*, [ɑ] for that of *at*; the reason being that [a] is the sign generally associated in other languages with the vowel of *art*. But the point is not very important, and there are two countervailing arguments. (1) The usage recommended has already gained some currency, having been adopted by the Standard Dictionary and, virtually, by the International Phonetic Association. (2) It leaves us the familiar print-form [a] for the a-sound of most frequent occurrence in stressed syllables, and devotes the new sign [ɑ] to a sound that occurs much less frequently.

5. â

* *ask*, * *glass*, * *aunt*, * *launch*, * *France*, * *bath*.

The sound is between [â] and [ẫ]. It occurs before a voiceless fricative, that is, before *f*, *s*, *th*; less often before a nasal followed by a consonant; rarely in other situations. For additional examples see No. 1.

The committee were at first divided as to the need of a letter for this sound, some being disposed to regard it as a negligible variation of [â] or [ẫ]. The facts are briefly as follows. During the seventeenth century the old short [a] and [o] became long in certain situations, so that [plant], [pas], [pap], [laf], became [plânt], [pâs], [pâp], [lâf], just as the older [kləp], [səft], [ləs], became [kləp̃], [səft̃], [ləs̃]. Late in the eighteenth century this new [ẫ] became [â] in the speech of London, tho conservatives resisted the innovation and clung to [ẫ]. In time the feeling arose that [pâs] was vulgar, and [pâs̃] affected; so that refined speakers made a virtue of pronouncing an intermediate sound. We quote from Smart's edition of Walker (1838):

"But Walker is a bigot; he allows of no compromise between the broad *a* with which a vulgar mouth pronounces *ass* [ẫ], and the sound, narrower if possible, than the *a* in *at* [â], with which an affected speaker minces the same word. Surely in a case like this there can be no harm in avoiding the censure of both parties by shunning the extreme which offends the taste of each."

Since Smart's time the [â] has largely prevailed in the usage of Londoners, tho his "mincing sound" [ẫ], which has all the claims of antiquity in its favor, is also heard.

But the "refined transition," as Sweet calls it, that is [ẫ], is likewise in use. Good observers have noticed that English ladies tend to say [âsk], [glâs], while the men say [âsk̃], [glâs̃]. In the United States the refined transition has gained large acceptance, especially in deliberate speech. Many Americans would certainly object to the necessity of choosing between [mâstər] and [mâst̃ər], [Frâns] and [Frâns̃], [bâp] and [bâp̃], and would say that neither well represents their habitual, deliberate pronunciation. The great dictionaries all recognize the refined transition and provide a notation for it.

All this being so, it seemed best to the committee to include a letter for this sound in the Revised Alphabet, altho the sound has no real existence in the ordinary natural speech of the majority of English speakers. The character chosen [â] is an easy modification of [a] and has already some currency.

The quantity of the sound is regularly long everywhere, whatever its quality may be. Its short would be hardly distinguishable from [a]. After the old short sound had become long the dictionaries continued to mark the vowel of *ask*, *path*, etc., as short, because its quality suggested that of the vowel in *cat*, and the notions of quantity had become mixed up with those of quality. It is time for our dictionaries to recognize that this bothersome sound is at any rate regularly long, however we may shade its quality.

6. ê

day, fate, great, rain, rein, reign, veil, they, taste, way, weigh, savior, danger, chamber, angel.

This is the close long e-sound. A very precise notation would require a different sign for the open long, which is heard only before *r*; for example in *Mary*, as often pronounced with the vowel like that of *merry*, only long. But in an alphabet of medium precision this variety may be merged with [ê]. In fact many pronounce a real [ê] in such words as *Mary, vary, chary*, without approximation to the vowel of *merry, very, cherry*. So too a separate sign would be needed for the close short, which is heard only before a vowel in certain book-words such as *chaotic, aerial, aorta*. But the close short occurs only in situations where its closeness will take care of itself, even if we write [keotik], [eiriəl], [eörtə].

7. e

*ebb, led, dead, said, left, men, meant, shepherd, merry, bury, never, bless, leather, measure, bell, wealth; *except, *example, *enclose, *embody, *esteem.*

This is the open short e-sound. In an initial unstressed syllable (the words with asterisk) it usually becomes an obscure [i]

or [ə], tho it retains the distincter sound in more deliberate utterance. Thus one would read: [eksept yî bî bœrn ægen]; but one might say: [əl də beiz iksept mî]. In such case, as in that of [a], the dictionary has either to adopt a diacritic mark for obscuration (such as a dot over or under the vowel affected), or else to repeat for the less formal pronunciation; thus [eksépt, iksépt]. See above, page 13, and below, page 45.

7¹. ei

**day, *fate, great, *rain, etc., as in No. 6.*

In the speech of Southern England, notably London, a stressed [ê] is regularly converted into a diphthong. Beginning with the position for open [e], the tongue is raised during the act of utterance toward the position of [i]. To denote this diphthongal sound Sweet uses *ei*, the Oxford Dictionary *eⁱ*. The small superior letter has the advantage of marking the second vowel as subordinate, but for the convenience of the printer we prefer [ei]—a sign already familiar in such words as *veil, deign, skein, weigh*. The sign [ei] will not be needed for the transcription of world-English, but is necessary to mark the usage of a very important minority.

The Cockney tends to make the first element still more open than [e], so that his *lady* becomes [laidi].

8. î

*police, marine, lean, lien, seen, scene, Peter, believe, receive, people, Cæsar; *fear, *serious.*

This is the close long i-sound. The open long, as heard in *fear, serious*, when pronounced with the vowel similar in quality to that of *lyric, Sirius*, is also to be written [ɪ]. The close short, heard only before a stressed vowel in such words as *reaction, theistic, Aeolian*, is to be written [i]. Like the close short e-sound, it occurs only in situations where its closeness is a matter of course.

9. i

bit, bitter, city, kid, kill, build, biscuit, hymn, business, lyric;
**added, *foxes, *goodness, *princess, *message, *preface,*
**prelate; *eject, *evade, *refer, *debate, react, beatitude;*
**pitiful, *vanity, *difficult.*

The open short i-sound. In the first group of words with asterisk—they represent a numerous class—we have a sound which is between [e] and [i], but nearer to [i]. Many speakers make no distinction between the two vowels of *business*, pronouncing it [bizniz]. *Palace* is made to rime with *Alice*, *smartest* with *artist*, *basket* with *ask it*, *prelate* with *sell it*, and the last syllable of *beverage* is not distinguished from the last syllable of *Cole-ridge*. A very precise notation would require a sign for an unstressed vowel between [e] and [i]; in the absence of it, [i] comes nearest to what is desired. See above, page 13, and below, page 45.

In the second group with asterisk the starting-point is [î], but owing to the lack of stress the vowel is shortened. At the same time it becomes more open if a consonant follows, as in *debate*, but retains its closeness before a vowel, as in *react*. It is thus a close approximation to the truth to write [ijekt], [ivêd], [rifôr], [dibêt], [riakt].

In the third class of words with asterisk the medial [i] retains its quality in careful or deliberate utterance, but in ordinary talk tends to become [ə].

9'. iû, iu

tube, new, few, feud, Tuesday, lute, mule, pure, Puritan,
puristic, mulatto.

This diphthong consists of [û], or [u], preceded by a more or less audible [i]. Initially and generally after a consonant, the vowel [i] is normally displaced by the consonant [y]. As the discrimination of [iû] and [iu] from [yû] and [yu] is difficult and of no great practical importance, it is recommended that [iû] and [iu] be dispensed with and that [yû] and [yu] be written in their place. In the pronunciation of many, especially in the United

States, the [û] or [u] is somewhat unrounded thru diminished lip-action, and the [i] or [y] is often omitted before the dentals *t*, *d*, *n*, *l*. See No. 14.

10. ɵ

awe, awful, law, all, halter, stalk, haul, lord, form, remorse, dog, off, cloth.

This convenient and necessary letter was recommended in the phonetic alphabet of 1877. It is an ɵ with the breve dropped into the circle. In the common spelling it is often written *a*, as in *all*, *call*, but is to be classed as an o-sound because its production is attended by a certain rounding of the cheeks or lips.

11. ɵ

*audacious, autumnal; *hot, *rob, *rock, *copper; *what, *watch, *swap, *quantity.*

The short [ɵ] is best heard unstressed in such words as *autumnal*, *autocracy*. The key-words with asterisk are equivocal because, in the greater part of the United States, they are pronounced with a completely unrounded vowel usually identical with [a]. See No. 1.

11'. ɔi

oil, boil, point, boy, Troy, oyster, enjoy, enjoin.

That the first element of this very common diphthong is [ɵ] and not [o], may be perceived by comparing *coin* and *coin-cide*.

12. ô

*oh, owe, go, boat, note, loan, bone, flown, snow, hoe, roe, though, bestow, toll, behold, mould; *four, *soar, *port, *story, *glory.*

This is the close long o-sound. The open long is heard in the words with asterisk, as pronounced by most Englishmen and many Americans. They are words in which the vowel, with primary or secondary stress, is followed by [r]. This "opening" of [ô] makes it hardly distinguishable from [ê]; so that *four* and *mourning* become virtually identical with *for* and *morning*, and

soar with *saw 'er*. Many Americans, however, distinguish these pairs as [fôr] and [fêr], [môrniŋ] and [mêrniŋ], [sôr] and [sêr]. Strictly speaking the open sound is between [ô] and [ê], so that a very precise notation would require three signs for the three vowels of *boat*, *soar*, and *saw 'er*. The open long [ô] is here disregarded; it may be written [ô] or [ê], as may seem best.

13. o

*poetic, cooperate, bohemian, window, borrow, furlough, donation, rotation; *potato, *political, *obey, *solicit.*

The difference between [o] and [ê] is that the former is more rounded; note the action of the lips in passing from the initial syllable of *co-operate* to that of *causation*. In standard English [o] does not occur except in unstressed or weakly stressed syllables.

The words with asterisk indicate a class in which [o] tends to become [ê] in ordinary talk. It remains close only before a vowel, as in *poetic*.

13'. ou

*oh, *owe, *go, *boat, *note*, etc., as in No. 12.

In the speech of Southern England, notably London, a stressed [ô] is regularly converted into a diphthong. Beginning with the position for open [o], the lips are rounded during the act of utterance to the position for [u]. To denote this diphthongal sound the English phoneticians use *ou*, *ow*, and *o^u*. On the whole [ou] seemed preferable. Its use is already familiar in such words as *soul*, *mould*, *dough*, *though*, *pour*, etc. Like [ei], the sign [ou] will be needed only in transcribing the speech of Southern England.

14. û

*goose, roof, booth, moon, choose, lose, pool, mood, ooze; *poor, *moor, *boor; *rule, *rude, *rheumatism, *true, *fruit, *blue, *bloom.*

This is the close long u-sound. Before *r*, as in *poor*, *moor*, it is slightly more open, being the long of No. 15, but the variation does not require a distinct sign.

The second group with asterisk—[û] after *r* or *l*—present a difficulty. In this class of words many Americans pronounce an [û] that is slightly unrounded thru diminished lip-action. In this pronunciation *rule* does not rime exactly with *school*, nor *fruit* with *boot*, nor *rude* with *rood*, nor *blue* with *do*, nor is the first part of *rheumatism* exactly identical with *room*. Moreover this slightly unrounded [û] is heard also very commonly in the class of words in which the dictionaries generally prescribe [yû] (No. 9'), especially those in which the [y] is reduced nearly or quite to the vanishing-point. The result is that the untrained British ear hears an American say *Noo York*, *Toosday*, and confound *loot* with *lute*. In the pronunciation referred to, however, the difference depends not so much upon the presence or absence of the faint [y] in [yû] as upon the quality of the [û].

The committee differed as to the need of a letter for this partially unrounded American [û]. There is as much need of it, perhaps, as for [â]; many Americans will say, no doubt, that their natural pronunciation of *music*, *feud*, *Tuesday* is not well represented by [myûzik], [fyûd], [tyûzdi], and certainly not by [mûzik], [fûd], [tûzdi]. A modification of the letter [u], consisting of a minute curve or loop in the left-hand branch, somewhat as in [â], was considered at length, but it was finally decided not to include it in the Revised Phonetic Alphabet.

15. u

push, pull, foot, good, hood, nook, stood, could, would.

This is the open short u-sound. The corresponding close short, which is also to be written [u], may be heard in *whoever*, *Louise*. It occurs only unstressed and before a vowel.

16. ʊ

urn, urge, her, fur, sir, earn, fern, burn, bird, herd, heard, murder, girl, pearl, whirl, word, churl, dirge, merge, splurge, myrrh.

This vowel, which is so variously represented in the traditional spelling, is more nearly the long of [ə] than of [u]. It occurs only before *r* and only in stressed syllables. Unstressed it reduces to [ə], as in *murmur*. Were the circumflex, as used in the Revised

Phonetic Alphabet, a sign of quantity only, the better sign for this sound would be [ə̌] with the circumflex. But the use of that sign, while theoretically preferable, would result in giving to every word containing the sound an entirely strange aspect. On the other hand, the use of [ʊ], notwithstanding the fact that [u] and [ʊ] differ in quality, as do [e] and [ê], or [i] and [î], leaves many words with a very "natural" appearance; as [ʊrn], [bʊrn], [mʊrdər]. On the whole the vowel is associated in the general mind rather with *u* than with any of the other letters—*e, i, ea, o, y*—which are used to represent it.

17. u

*up, but, cub, must, puff, tough, enough, fun, much, touch, crutch, love, come, some, above, rustle, hubbub, puzzle, dull, gull, multiply; *hurry, *courage, *flourish.*

This vowel occurs only in stressed syllables. Unstressed it becomes [ə]. Before [r] its quality varies between that of [u] in *up* and that of [ʊ] in *urn*; but the variation may be disregarded.

18. ə

*sofa, idea, equal, separate, embassy, mature, facility, balloon, celery, cover, moment, ebony, doctor, guttural, nation, national, lonesome, glorious, a man, the man; *enemy, *hominny, *effort, *record.*

This is the famous "obscure" vowel. Its tongue-position is nearly the same as that of [u]—it is really between that of [u] and that of [a]—but [u] is always stressed, [ə] never. This gives them a difference of quality easy to be heard if one compares, say, *cup* and *hiccup*. The obscure [ə] is the goal to which the most of the other vowels tend when not supported by the stress. It is thus of very frequent occurrence.

The alphabet of 1877 made no provision for this vowel, leaving it to be identified, in any particular case, with that one of the other vowels which it most resembled, or from which it had derived; thus: *sofa*; *dialect*; *moment*; *nêshun*; *ballot*; *gamut*; in *dhî wêter*. By this means a text printed in the reformed spelling was made to look rather more like ordinary print than would

otherwise have been possible. But it is not phonetic writing to use five or six different signs for the same sound. There is really no better reason for doing so in the case of this vowel—which has a definite character of its own—than in the case of any other. That the use of a separate sign for it leads to the spelling of the same word in different ways is not an objection, but a point in its favor; since it teaches observation of and fidelity to the facts. The word *the*, pronounced [ði], is a rarity; in actual use it is either [ði], as in *the ocean*, or [ðə], as in *the man*. In the sentence *I know that that is so*, we have two *thats*, [ðət] and [dat], which must be distinguished if one makes a pretence of phonetic writing.

In some of the key-words given above many speakers avoid the obscuration; saying, for example, [rékərd], [efərt], [môm-ent], [enimi], and not [ɛfərt], [rekərd], [mômənt], [enəmi]. Let it be remembered that we are not here inculcating views or setting up a standard, but providing a notation for the facts of English speech. The tendency to weaken an unstressed vowel is such a fact, and a very important one.

The sign generally employed by phoneticians is an inverted *e*, either italic or Roman. But in accordance with our general principle of avoiding turned letters we have preferred the form [ə], an easy modification of [a]. It looks very like the ə of the phoneticians, while in a good many words, such as [sepərət], [daïəlekt], [norməl], [sôfə], it has a not unwelcome suggestion of [a], with which it is closely related.

19. h

hat, hen, his, hole, aha.

The combination *wh* in *what, white, when*, etc., is to be written [hw] in accordance with the earlier and more correct practice.

20. k

keep, kit, kick, call, cat, clock, flicker, tobacco, quit, box.

The choice here is between *k* and *c*, which originally had the *k*-sound only, but in English has the sound of *s* or *sh* in many words. Each letter has its advocates whenever the question is

discussed, and however we decide it there will very certainly be many who will wish that it had been decided the other way. The argument in favor of [k] is that it is never ambiguous and is the sign now almost universally employed by phoneticians to represent the sound under consideration. If we use [k] there is no danger that *kit, kite, kettle, curtain, cane* will ever be confused by any one with *sit, site, settle, certain, sane*.

There is a slight difference of quality between the back *k* of *call* and the front *k* of *kettle*. The front or palatal *k* has developed into *ch* in many words; compare *cool* and *chilly, speak* and *speech*. But while the difference between the guttural and the palatal *k* is historically of some importance, it is disregarded in the Revised Phonetic Alphabet.

21. g

gap, gate, dog, again, aghast, ghost, dagger, blackguard.

As in the case of [k], the front or palatal modification of *g*, heard in *geese* as compared with *goose*, is disregarded.

22. ŋ

sing, young, longing, singer, finger, banker, anchor.

The sign here proposed for *ng* is the one now most generally employed by phoneticians. In *banker, anchor*, we have a combination of [ŋ] and [k]; in *finger, longer*, a combination of [ŋ] and [g].

23. y

yes, yet, ewe, union, bilious, collier, minion, beauty, pure, cure.

The choice here is between *y* and *j*. The argument for *y* is that we readers of English are used to it. The argument for *j* is that it is the letter generally employed in phonetic literature for the sound under consideration—the so-called palatal semivowel—*y* being used for the German *ü*, the French *u*. It may also be said that *j* is intrinsically the better sign for the sound, because the form shows its close relation to *i*, of which at first it was only a

calligraphic modification. The sound of [y] is that of an *i* made so high and close as to cause a faint consonantal rustle. On the other hand, the objection to *j* is that it might easily be mistaken for the *j* of *jaw*.

Thus the choice between *y* and *j* for the semivowel turned finally upon the question of retaining *j* as a possible notation for the two consonants, or the composite consonant, heard in *jaw*. After much discussion the committee decided to recommend the retention of [j] as an alternative to [dʒ] for the composite consonant; and thus it seemed to follow as a matter of course that a form of *y* must be used for the semivowel. To distinguish this consonantal [y] from the *y* employed by phoneticians for German *ü*, French *u*, it is suggested that for the former the familiar italic or script letter cut as a perpendicular type might be used.

24. t

tin, bit, bitter, thyme, phthisic, ptomaine.

25. d

do, sad, ladder, dry, land.

26. l

let, live, bell, elbow, shallow.

Like [n] and [r], [l] may perform the function of a vowel and form a syllable. The endings spelled *-al -el -le -il*, are pronounced [əl] with the [ə] more or less distinctly heard. It is most clearly audible after a vowel, as in *Baal, towel, fealty*. After a consonant, as in *battle, nibble, devil, shovel*, the vocal murmur reduces to almost zero, leaving syllabic [l]. Shall we then write [batəl], [nibəl], [devəl], [ʃuvəl], or simply [batl], [nibl], [devl], [ʃuvl]? By the latter spelling we lose the distinction heard in [batl] as compared with [batlin]. In general it will be better to write the [ə], even if it is very faint.

27. r

*red, rat, trick, arrow, stretch; *far, *father, *burden.*

The proper denotation of the r-sounds is a matter of some diffi-

culty. Before a vowel, as in *red*, *trick*, *very*, the printed *r* is pronounced, and pronounced almost uniformly by speakers of English everywhere; the tip of the tongue being raised far enough to produce an audible consonantal sound, but not made to vibrate. It is this sound which we propose to denote by the familiar print-form [r]. If the tip of the tongue is raised high and made to vibrate, we have the trilled *r*, heard in Scottish dialect and in forced utterance, for example sometimes in elocutionary efforts. This trilled *r* might be denoted when necessary by an italic. But the untrilled [r] may be weak or strong according as the tongue-tip is raised less or more. In the speech of Southern England, to some extent also in that of the eastern and southern United States, an [r] not followed by a vowel, as in *far*, *farm*, *farthing*, *other*, *other day*, is not pronounced at all, or is replaced by *ə*. In this pronunciation no distinction is made between *father* and *farther*, *laud* and *lord*, *sought* and *sort*, *boa* and *bore*. *Other day* is heard as [ʊðə də], but *other end* as [ʊðər end].

For this dropt [r] of course no sign is needed. Between the dropt [r] and the trilled *r* there are various grades depending on the vigor with which the tip of the tongue is brought into play. It would be useless to attempt to distinguish them graphically. The sign [r] may be used to denote any r-sound that is audible as a consonant, however weak it may be.

A still different variety of r-sound, the so-called "Northumbrian bur," is not produced with the tip of the tongue at all, but between the back part of the tongue and the uvula. It may be denoted when necessary by R. This "velar r" is a very common sound in French and German.

A preceding [ə] does not disappear before *r* to the same extent as before *l* and *n*. Such words as *butter*, *never*, *gunner*, will be best written with [ər]; [butər], [nevər], [gunər], rather than [butr], [nevr], [gunr].

28. n

no, *ten*, *manner*, *sign*, *knife*, *inch*, *engine*.

Syllabic [n], as in *fasten*, *written*, *button*, *boatswain*, will be best written [ən]; [fasən], [ritən], [butən], [bôsən], rather than [fasn], [ritn], [butn], [bôsn].

29. s

sit, house, this, missing, cent, peace, scene, psychology.

30. z

zest, lazy, buzz, his, was, houses, scissors, pansy, palsy.

31. ʃ

ship, dish, issue, passion, nation, function, gracious.

The letter here proposed for the sh-sound, the once familiar "long s," is already in very general use among phoneticians. See No. 33.

32. ʒ

azure, seizure vision, leisure, pleasure.

The only noteworthy objection to this letter, which is also in common use, is its close resemblance to [z] in the script form. This difficulty can be obviated by giving to the upper loop of the script [ʒ] a flat top.

33. ɕ=tʃ

chip, chest, choose, church, rich, bach, watch, voucher.

The ch-sound presents a perplexing problem. The familiar sign *ch* is objectionable because it is hopelessly ambiguous, and because, whatever else the sound may be, it is certainly not a combination of *c* and *h*. The majority of the best phoneticians analyze it as a combination of [t] and [ʃ], an analysis which is accepted by the Oxford Dictionary. Following that we should write the word *church* as [tʃɜrtʃ], while *Judge Churchill* would appear as [Dʒʊdʒ.Tʃɜrtʃɪl]. This looks odd, but much in phonetic writing must necessarily look odd at first. If the mere oddity were the only objection it would be our plain duty to accept the situation and make the best of it. But the difficulty is that our ch-sound is not a combination of ordinary *t*, such as is heard in *tin*, with ordinary *sh*, such as is heard in *ship*,—no such obvious combination as we have, for example of *k* and *s* in *fox*. It must be remembered, however, that each of our consonants varies more or less under the influence of neighboring sounds. The *t* of *ten* is

not like the *t* of *written*, nor is the *sh* of *ship* like the *sh* of *nut-shell*. What we have in our *ch* is really a variety of *t* combining with a variety of *sh*. But the elements do not combine in sequence; they blend almost simultaneously, giving rise to a composite sound, in which most people can hear neither a *t* nor an *sh*. Storm calls the sound a combination of a peculiar palatal *t* and the German *ch* of *ich*; or a cross between *tsh* and *ty*. When a highly expert phonetician must resort to such language in describing the sound, the layman can hardly be blamed for asserting—with a good deal of vehemence, as he often does—that *ch* is *not* a combination of *t* and *sh*.

It may be remarked in this connection that the sound does not often develop out of *t+sh*, but usually from a palatalized *k*; compare *bench* and *speech* with *bank* and *speak*. At the same time it is not likely that the trigraph *tch*, as in *watch*, would have gained acceptance so easily had it not been felt that a *t* is actually heard. One may say, then, that the sound is a duality, but a duality in which the parts lose something of their separate character and form a new unity. To many people the *ch* in *chin* will always seem no less simple and indivisible than the *sh* in *ship*.

The dilemma is, then, that a notation in accord with the best scientific authority will offend the eye of many English speakers and seem to them finicky and absurd. This being so, it seemed best to treat this sound as a peculiar one-in-two, which might properly have a sign of its own as an alternative spelling to the preferable [tʃ]. Of several forms discussed a *c* with an oblique cross appeared the least open to objection.

34. j=dʒ

jaw, jet, jelly, gin, gist, congeal, judge, ridge, pigeon.

The case for [j] = [dʒ], which is simply the voiced [ç] = [tʃ], is implicitly disposed of under No. 33.

35. þ

thin, thick, through, bath, breath, ether, Luther.

The choice here is between the Anglo-Saxon or Runic *thorn* [þ], the Greek *theta*, and a ligature of *t* and *h*—i.e. *h* with the top of a *t*. The committee were divided in their preference, but voted in

favor of the old *thorn*, which is the letter now most commonly used by phoneticians to denote the sound in question.

36. *ð*

this, thus, that, with, loathe, breathe, rather, either.

For this sound, the voiced [b], a crossed d seemed preferable to the Greek *ð*, with or without cross.

37. *p*

pit, tip, upper, spend, plead, pulp.

38. *b*

bat, tub, bubble, blue, member, cupboard.

39. *m*

mat, jam, lamb, summer, elm, phlegm.

40. *f*

fat, if, stuff, buffer, laugh, physic.

41. *v*

vex, veal, love, river, of, Stephen.

42. *w*

was, way, wit, woe, word, once, quest, persuade.

For *wh* in *what*, see No. 19.

IV

SPECIMENS

(1)

While the Revised Phonetic Alphabet is designed primarily to be used in the respelling of words for pronunciation, rather than in the printing of literary matter, it was thought desirable to give a few examples of its applicability to the graphic representation of connected discourse. The specimens are of two classes: first, dignified prose and noble poetry, in which one pronounces more carefully; second, familiar talk, in which one gives a freer rein to the natural tendencies of the language. It must be remembered that

the object in view is not to teach orthoepy, but to illustrate the use of a notation. Numbers (1) and (2) are transliterated in accordance with the approved dictionary pronunciation as modified by varying conditions of stress. Number (3) gives a sonnet of Keats as read by an Englishman—a graduate of Oxford—whose utterance may be taken as fairly representing that of educated Londoners. Number (3*a*) gives the same matter as read by a New Englander—a member of the Harvard Faculty. Number (3*b*) gives the same matter as read by a member of the committee who is a Michigan man some time resident in New York. Number (4) is transcribed as accurately as possible from Sweet's primer of spoken English. Number (4*a*) gives an average American version of the same matter. Number (5) is Yankee dialect, transcribed from the Biglow Papers, with a few emendations. Number (6) is Central New York dialect from "David Harum."¹

(1)

hwail ða rivaizd fonetik alfabet iz dizaind praimerili tə bî yûzd in ða rîspeliŋ əv wûrdz fər pronunsiəʃən, raðər ðan in ða printiŋ əv litərəri matər, it wəz bət dizairəbəl tə giv ə fyû igzampəlz əv its aplikəbiliti tə ða grafik reprizentəʃən əv kənɛktid diskôrs. ðə spesimenz ər əv tû klâsiz : fûrst, dignifaɪd prôz ənd nôbəl pôitri, in hwic wun pronounsiz môr kârfəli ; sekənd, fəmiljər tək, in hwic wun givz ə friər rən tə ðə naçərəl tendənsiz əv ðə læŋgwiʃ. it must bi rimembərd ðæt ði əbjɛkt in vyû iz nət tə tɪç ərþœpi, but tu ilustrət ði yûs əv ə notəʃən. numbərz (1) ənd (2) ər translitərətid in əkərdəns wið ði əprâvd dikʃənəri pronunsiəʃən az mɛdifaɪd bai vəriiŋ kəndiʃənz əv stɪs. numbər (3) givz ə sənɪt əv kɪts əz red bai ən ɪŋglɪʃmən—ə gradyuət əv ɔksfərd—huz utərəns mē bî təkən əz fârlɪ reprizentiŋ ðæt əv ɛdɪukətɪd lundənərz. numbər (3*a*) givz ðə sēm matər az red bai ə nyû ɪŋgləndər,—ə membər əv ðə hârvərd fakəlti. numbər (3*b*) givz ðə sēm matər az red bai ə membər əv ðə kəmiti hu iz ə mɪʃgən man sum taim rezɪdnt in nyû yôrk. numbər (4) is trnskraɪbd əz əkyurɪtli əz pəsɪbəl frəm swɪts prɪmə ər spôkən ɪŋglɪʃ. numbər (4*a*) givz ən əvəriʃ əmərəkən vûrʃən əv ðə sēm matər. numbər (5) iz yanki daɪəlekt, trnskraɪbd frəm ðə biglɔ pɛpərz, wið ə fyû ɪmɛndəʃənz. numbər (6) iz sɛntrəl nyû yôrk daɪəlekt, frəm "ðɛvɪd hârom."

¹ On the absence of capitals see above, page 20. The reader is by no means to infer that the committee disapprove of capitals, or think lightly of their use in print.

(2)

From Lincoln's Gettysburg Address.

Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation, so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field as a final resting-place for those who gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

(2)

fôr skôr ænd sevæn yîrz ægô aur fâðærz brêt fôrþ en ðis kœntinent æ nyû nêfœn, kœnsivd in libœrti ænd dedikêtid tu ðæ prœpœzizœn ðæt œl men ar kriêtid ikwœl. nau wî ar ingêjd in æ grêt sivil wêr, testin hwedêr ðat nêfœn, sô kœnsivd and sô dedikêtid, kan lœj endyûr. wî ar met en æ grêt batœl-fild œv ðat wêr. wî hav kum tu dedikêt æ pôrfœn œv ðat fild az æ fainœl restin-plêls fœr ðœz hu hîr gœv ðer laivz ðæt ðat nêfœn mait liv. it iz œltugedêr fitin ænd prœpœr ðæt wî jud dû ðis.

(3)

A Sonnet of Keats.

Much have I traveled in the realms of gold,
 And many goodly states and kingdoms seen;
 Round many western islands have I been,
 Which bards in fealty to Apollo hold.
 Oft of one wide expanse had I been told
 That deep-browed Homer ruled as his demesne;
 Yet did I never breathe its pure serene
 Till I heard Chapman speak out loud and bold:
 Then felt I like some watcher of the skies
 When a new planet swims into his ken;
 Or like stout Cortez when with eagle eyes
 He stared at the Pacific—and all his men
 Looked at each other in a wild surmise,
 Silent upon a peak in Darien.

(3)

muc hav ai travæld in ðə relmz əv gould,
 ənd meni gudli steits ənd kinðəmz sîn;
 raund meni westən ailəndz hav ai bîn,
 hwiç bādz in fiəlti tu əpəlo hould.
 ɛft əv wun waid ekspans had ai bîn tould
 ðæt ðip-braud hovmə rūld əz hiz dimîn;
 yet did ai nevə brīð its pyuə sirîn
 til ai hūd çapmən spik aut laud ənd bould:
 ðen felt ai laik sum wəçər əv ðə skaiz
 hwen ə nyû planit swimz intu hiz ken;
 ə laik staut kētez hwen wið igəl aiz
 hî stād ət ðə pəsifik—ənd əl hiz men
 lukt ət ic uðə wið ə waild səmaiz,
 sailənt əpən ə pík in dārien.

(3a)

muc hav ai travæld in ðə relmz əv gôld,
 ənd meni gudli stêts ənd kinðəmz sîn;
 raund meni westən ailəndz hav ai bîn,
 hwiç bādz in fiəlti tu əpəlo hōld.
 ɛft əv wun waid ikspans had ai bîn tōld
 ðæt ðip-braud hōmə rūld əz hiz dimîn;
 yet did ai nevə brīð its pyûə sirîn
 til ai hūd çapmən spik aut laud ənd bōld:
 ðen felt ai laik sum wəçər əv ðə skaiz
 hwen ə nyû planit swimz intu hiz ken;
 ə laik staut kētez hwen wið igəl aiz
 hî stād ət ðə pəsifik—ənd əl hiz men
 lukt ət ic uðə wið ə waild səmaiz,
 sailənt əpən ə pík in dêrien.

(3b)

muc hav ai travæld in ðə relmz əv gôld,
 ənd meni gudli stêts ənd kinðəmz sîn;
 raund meni westərən ailəndz hav ai bîn,
 hwiç bārdz in fiəlti tu əpəlo hōld.
 ɛft əv wun waid ikspans had ai bîn tōld
 ðæt ðip-braud hōmər rūld əz hiz dimîn;
 yet did ai nevər brīð its pyûr sirîn
 til ai hūrd çapmən spik aut laud ənd bōld:
 ðen felt ai laik sum wəçər əv ðə skaiz

hwen ə nyû planit swimz intu hiz ken;
 ər laik staut kôrtez, hwen wid îgəl aiz
 hî stârd ət də pəsifik—ənd əl hiz men
 lukt ət ɪə uðər wid ə waıld sərmaiz,
 sailənt əpən ə pik in dērien.

(4)

Colloquial English of London.

How do you do? Quite well, thank you; how are *you*? How are they all at home? All well except the baby. What is the matter with the baby? I do not know exactly. She was crying all night long; there must be something wrong with her. Poor thing! I am sorry to hear it. You do not look well yourself. No, I am ill from want of sleep.

What is the French for "I do not understand"? I want to let this Frenchman know I can not understand what he is saying. It is rather odd, I can talk French myself, but I can not understand it when it is spoken. You should tell them not to speak so fast. I do not believe they can speak slow; they are too excitable.

What do you think of young Mortimer? I think he is the most conceited young fool I ever saw; but there is no great harm in him. At any rate he is a gentleman; he would not do anything mean or dishonorable. I am afraid that can not be said of his elder brother. Oh, he is a regular cad; you know he was turned out of his club for cheating at cards.

(4)

hau dyu dû? kwait wel, þaŋk yu; hau ə yû? hau ə ðei əl ət houm? əl wel, iksept də beibi. hwets də matə wid də beibi? ai dount nou igzaktli. ʃi wəz kraiiŋ əl nait lɔŋ; də must bi sum-þiŋ rɔŋ wid ə. pûə þiŋ! aim səri tə hîr it. yu dount luk wel yuself. 'nou, aim il frəm wɛnt əv slîp.

hwets də frenɛ fər ai dount undəstand? ai wɛnt tə let dis frenmən nou ai kânt undəstand hwet iz seiŋ. its rādər ɛd, ai kən tɛk frenɛ maiself, bət ai kânt undəstand it hwen its spoukən. yu ʃud tel ðəm nɛt tə spik sou fāst. ai dount biliv ðei kan spik slou; ðe ə tû iksaitəbəl.

hwet də yû þiŋk əv yuŋ mətīmə? ai þiŋk iz də moust kən-sitid yuŋ fûl ai evə sê; bət ðəz nou greit hām in im. ət eni reit hiz ə jentəlmən; hî wudnt dû eniþiŋ mîn ə dizən-rəbəl. aim əfreid ðat kânt bi sed əv iz eldə brudə. ou, hiz ə regyulə kad; yu nou i wəz tɔnd aut əv iz klub fə ɛitiŋ ət kādz.

(4a)

hau dæ yə dū (hau di dū)? kwait wel, þaŋk yu; hau ər yū? hau ər dē ēl ət hōm? ēl wel, iksept dæ bēbi. hwats dæ matər wið dæ bēbi? ai dōnt nō igzaktli. ʃi wəz kraɪŋ ēl nait lən; ðər must bi sumpɪŋ rēŋg wið ər. pʊr þɪŋ! aim sari tə hɪr it. yu dōnt luk wel yərself. nō, aim il frəm want əv slɪp.

hwats dæ frenç fər ai dōnt undərstand? ai want tə let ðis frençmən nō ai kánt undərstand hwat ɪz séɪŋ. its raðər ad, ai kən tək frenç məself, bət ai kánt undərstand it hwen its spōkən. yū ʃud tel ðəm nat tə spɪk so fāst. ai dōnt biliv dē kan spɪk slō; dē ər tū iksaɪtəbəl.

hwat dæ yū þɪŋk əv yuŋ mɔrtimər? ai þɪŋk ɪz dæ mōst kən-sɪtɪd yuŋ fʊl ai evər sē; bət ðərz nō grēt hām in im. ət eni rēt hɪz ə jentəlmən; hɪ wudnt du enɪþɪŋ mɪn ər dɪsənərəbəl. aim əfrəd ðat kánt bi sed əv ɪz eldər brudər. ō, hɪz ə regyulər kād; yu nō i wəz tʊrnd aut əv ɪz klʊb fər ɔtɪŋ ət kɑrdz.

(5)

From the Biglow Papers.

But wen it comes to *bein'* killed,—I tell ye I felt streaked
The fust time 't ever I found out wy bagonets wuz peaked;
Here's how it wuz: I started out to go to a fandango,
The sentinel he ups and sez, "Thet's furder 'an you can go."
"None o' your sarse," sez I; sez he, "Stan back!" Aint you a
buster?"

Sez I, "I'm up to all thet air, I guess I've ben to muster;
I know wy sentinels are sot; yo aint agoin' to eat us;
Caleb haint no monopoly to court the seenoreetas;
My folks tu hum air full ez good ez his'n be by golly!"
An' so ez I wuz goin' by, not thinkin' wut would folly,
The everlastin' cus he stuck his one-pronged pitchfork in me
An' made a hole right thru my close ez ef I wuz an in'my.

(5)

but wen it kʊmz tə biɪn kɪld,—ai tel yi ai felt strikid
dæ fust taim tevər ai faund aut wai bagonets wəz pikid;
hɪrz hau it wuz: ai stɑrtɪd aut tə gō tu ə fandango,
dæ sentənəl hɪ ups n sez, "ðets fʊrdər ən yu kan go."
"nun ə yər sɑrs," sez ai; sez i, "stan bak!" "ənt yū ə bustər?"
sez ai, "aim up tu ēl ðet ɑr, ai ges aɪv ben tə mustər;
ai nō wai sentənəlz ər sat; yi ənt əgoin tə ɪt əs;
kēlib hēnt nō monapəli tə kɔrt dæ sɪnərɪtəz;

mai fôks tə hum ər ful əz gud əz hizn bî, bai gali!"
 ən sô, əz ai wəz goin bai, nat þinkin wut wud fali,
 ði evərlastin kus i stuk iz wun-prəŋgd piçfôrk in mi
 ən mēd ə hōl rait þrû mæ clôz, əz ef ai wəz ən in'mi.

(6)

From "David Harum."

"I did smell woolen some," said David, "but I had the hoss an' they had the money, an', as fur's I c'd see, the critter was all right. Howsomever, I says to 'em: 'This here's all right, fur's its gone, but you've talked putty strong 'bout this hoss. I don't know who you fellers be, but I c'n find out,' I says. Then the fust feller that done the talkin' 'bout the hoss put in an' says, 'The' hain't ben one word said to you about this hoss that wa'n't gospel truth—not one word.' An' when I come to think on't afterward," said David with a half-laugh, "it mebbe wa'n't *gospel* truth, but it was good enough *jury* truth. I guess this aint over 'n' above int'restin' to ye, is it?" he asked after a pause, looking doubtfully at his sister.

(6)

"ai did smel wulin sum," sed dêvid, "bæt ai had ðə hēs ən dé had ðə muni, an, əz fûrz ai kəd sî, ðə kritər wəz əl rait. hausəm-evər, ai sez tû əm: 'ðis hîrz əl rait, fûrz its gēn, bæt yûv tēkt pəti strōŋ baut ðis hēs. ai dōnt nô hû yû felərz bî, bæt ai kn faind aut,' ai sez. ðen ðə fust felər ðæt dʌn ðə tēkin baut ðə hēs put in ən sez: 'ðe hēnt ben wun wûrd sed tə yû baut ðis hēs thət want gəspəl trûþ—nat wun wûrd.' ən hwen ai kum tə þink ant aftərwərd," sed dêvid wið ə hâf-lâf, "it mebi want gəspəl trûþ, bæt it wəz gud ənuf jûri trûþ. ai ges ðis ênt ôvər n əbʊv intrəstin tu yi, iz it?" hî âskt âftər ə pəz, lukin daufəli ət hiz sistər.

V

PROPOSAL OF A SHORTER ALPHABET

(for ordinary phonetic writing and practical spelling reform)

Some of the distinctions which must be made by any good dictionary in the respelling of words for pronunciation, and are accordingly provided for in the Revised Alphabet, may be safely ignored

in rapid phonetic writing. See above, page 16. In general it is not necessary to mark a vowel as long if the sound differs only in quantity from that of the corresponding unmarked vowel, nor if the long sound occurs only before [r]. In the latter case the [r] itself becomes a sufficient sign of length. We may merge [ā] in [a], and [â] in [a], without serious loss, omitting the circumflex since the long sounds occur only under restricted conditions such as preclude the short sound. No confusion can arise between [kam], *calm*, and [kam], *cam*. We may also dispense with [â], writing the words that contain it either with [a], or with [ā], as may be preferred; while [û] may be discarded as occurring only before [r]. On the other hand, we can not do without [ê î, ê, û], because the result would be an identical spelling of numerous pairs of words such as *met—mate, sin—seen, not—naught, pull—pool*. Can we do without [ô]? The natural answer would seem to be yes, seeing that the short sound occurs but rarely and then only in unstressed syllables, where its quantity would take care of itself. On the other hand the dropping of [ô] would make it easy to confuse *not* and *note*, since [o] and [ə] are apt to resemble each other in script. It will therefore be best to keep [ô]. Some might wish to dispense with [ə], but that is a very convenient letter.

Dropping the signs that can be most easily dispensed with in rapid writing, we have the following thirty-eight letters for the Shorter Alphabet:

a, b, d, ê, e, f, g, h, î, i, j, k, l, m, n, o, p, r, s, t,
 b, d, û, u, v, w, y, z, z.

VI

SUGGESTION OF A DIFFERENTIATED ALPHABET

(For purposes requiring very great precision)

While it is believed that the Revised Phonetic Alphabet will prove equal to all ordinary demands, it falls short of the precision which will occasionally be required. Cherishing the hope that the notation described in Section III might gradually become the standard for popular-scientific purposes, the committee were reluctant

to include any new letters that were not incontestably necessary. But they found it difficult to draw the line. Certain letters were discussed and finally rejected, of which there is as much need, perhaps, as there is of the letter [â], which was included. Take, for example, the high unstressed vowel between [e] and [i], which is heard in *added*, *honest*. It is not ideally represented by [i], tho [adid], [ønist] are better than [aded] [ønest]. The maker of a large dictionary might very properly choose to use a distinct letter, say a modification of the small capital *i*, for that sound. A similar remark might be made of the partially unrounded American *u*, heard long in *music* and short in *mutation*. Again, it was pointed out in Section III that in the case of most of the vowels we have to do with an open and a close sound, each one of which may be long or short. Of the four varieties the Revised Alphabet provides signs for two only; but a dictionary aiming at maximum precision must in some way denote all four. This can be done, without the use of confusing diacritic marks, by employing systematically for the open sound a slightly clipt or otherwise incomplete form of the fundamental letter.

As for the consonants, the letters of the Revised Alphabet will suffice for all needs that are likely to arise in connection with the spelling of standard English, but there are certain dialectal and foreign sounds for which provision should be made. And here again the use of slightly modified forms of the familiar Roman letters is to be recommended.

As this report is not directly concerned with international phonetics, there was no occasion to have types cast for these differentiated letters, but a member of the committee undertook to prepare tables which should illustrate what is here meant, and at the same time indicate the line along which a satisfactory solution of the problem of an international phonetic notation is most likely to be reached. These tables are presented, with explanatory matter, in Appendix II.

Herewith the committee bring their report to an end and submit it to the public of scholars for criticism and amendment. They are aware of its imperfections, but they have done their best with a difficult and perplexing problem, and they hope that the result of their labors is at least good enough to arouse the interest of the competent in making it better. There were differences of opinion on various points, but none on any matters of

fundamental importance. The signatures below indicate an approval of the report as a whole, but not necessarily an approval of everything in it. The chairman, as final redactor and proof-reader, requests that he, and not the other members of the committee, be held responsible for any errors that may be discovered.

CALVIN THOMAS
GEORGE HEMPL
CHARLES P. G. SCOTT
O. F. EMERSON
E. O. VAILE

Committee

Revised Alphabet 1904	â	a	â	â	a	ê	e	î	i	ô	o	ô	o	û	u	û	U	ə	ai	au	iû	oi
Perry 1775	à				a	ā	ě	î ē	ĩ ŷ	ô â	ô	ô	ô	ô	û ô	é i	ũ	ī ŷ	ôû ôw	ū ew	ôĩ ôy	
Sheridan 1780					à	ā	é	î ē	ĩ	â	ó	ô	ô	ô		ù	ù	ī	ou ow	û	oi oy	
Walker 1791	â				ă	ā	ê	é	î	ă	ô	ô	ó	ô	û	ù	ũ	ī	ôû	û	ôĩ	
Webster	1828	à			a	a ē	e	î e	i	o a	o	o	o	oo ô	u o o	u	u ô	ī	ou ow	u u	oi oy	
	1829	ä	a		a	ā ē	e	î ē	ĩ	o a	o	ô	ô	oo ô	u o	u e	/u	ī	ou ow	ū ŷ	oi oy	
	1841	ä	a		a	ā ē	e	î ē	i	o a	o	ô	ô	oo ô	u o o	i	u	ī	ou ow	ū	oi oy	
Reid 1844	â				ă	ā	ě	î ē	ĩ ŷ	ô â	ô	ô	ô	ô	û	ũ ē i	ũ ô	ī ŷ	ôû	ū ew	ôĩ ôy	
Worcester 1846	ä		â	à	ă	ā	e	î ē	ĩ ŷ	ô â	ô	ô	ô	û ô	û	ũ ē i	ũ ô	a, e etc.	ī ŷ	ôû ôw	ū ew	ôĩ ôy
Imperial 1850	ä	a			a	ā ē	e	î ē	i	o a	o	ô o	ô	u o	u	u i	u ô	ī	ou	ū	oi	
Webster	1864	ä	a	à	â	ā ē	ě	î ē	ĩ ŷ	ô a	ô	ô	ô	u ô o	u ô o	û ē	ũ ô	ī ŷ	ou ow	ū ew	oi oy	
	1890	ä	a	à	â	ā ē	ě	î ē	ĩ ŷ	ô a	ô	ô	ô	u ô o	u ô o	ī ŷ	ũ ô	a, e etc.	ī ŷ ī	ou ow	ū ew ŷ	oi oy
Stormonth 1871	â				a	ā	ě	ē	ĩ	āw	ô	ô	ô	ô	ôô	é	ũ	ī	ôw	ū	oy	
Imperial 1882	ä				a	ā	e	ē	i	o a	o	ô	ô	ô	u	é	u	ī	ou	ū	oi	
Century 1883	ä	à	ă	a	ā	e	ē	î	ô a	o	ô	ô	ô	ô	û	è	u	a, e etc.	ī	ou	ū	oi
Oxford 1884	ā	a		æ	ei	e	ī	i	o	o	ô	ô	ô	û	u	ô	o	ə	ai oi	au	iû	oi
Standard 1894	ā	q	ā	a	ê	e	î	i	ē	o	ô	ô	ô	û	u	û e	v	a, e etc.	ai	au	iû	oi

PLATE I.—Table of Vowel-Notations Used in Certain English Dictionaries

APPENDIX I

THE VOWEL-NOTATIONS OF CERTAIN ENGLISH DICTIONARIES

See Plate I.—The history of vowel-notation in English lexicography is a somewhat complicated subject which is difficult to deal with in the form of a chart. Any attempt to attain ideal completeness and accuracy would have involved a scale so large, and such a mass of explanations and qualifications, that the prime purpose of a bird's-eye view would have been defeated. The chart here given must, therefore, be taken as nothing more than a rough synopsis of the facts which seemed most pertinent to the practical purposes of this report.

APPENDIX II

THE ROMAN LETTERS DIFFERENTIATED

The matter here presented, being in part technical and occupied with other than English sounds, lies somewhat aside from the committee's immediate task, but is closely related to that task and grew out of it naturally the moment it was decided to recognize international usage as an important criterion in the choice of symbols for the Revised Alphabet.

The plates are to be taken as suggestive merely; that is, as an attempt to show how the Roman letters *may* be differentiated for the purposes of a very exact notation. So far as the forms of the letters are concerned, they were not discussed—aside from those contained in the Revised Alphabet—nor even seen in manuscript by the full committee; whose individual members, therefore, must not be understood as having expressed any choice whatever with respect to matters of detail. It should be added that the letters are in the main those used by the International Phonetic Association, tho certain deviations were made necessary by the use decided on for [y], [j] and [ç] in the Revised Alphabet. A few other deviations are suggested as improvements.

(1) *A Differentiated English Alphabet.*

The principle of differentiating letters to denote minute phonetic distinctions is both scientific and practical; for in that way two very similar letters are employed to denote two very similar sounds, and the similar letters, while readily distinguished by those who care for the distinction, are read as one and the same letter by those not interested in phonetic micrometry.

Vowels.—Of any two vowels so similar that for ordinary purposes they may be regarded as identical, one is usually formed with the tongue a trifle higher up, or with some other constriction or closeness. In differentiating a letter to represent the two vowels

of a pair, the full or complete form is assigned to the distinct or close vowel; while the open or otherwise imperfect form is used for the more relaxed or open vowel.

Thus, referring to Plate 2, No. 1 is the close vowel heard long in *who*, and short in *whoever*; while No. 2 is the open vowel heard long in *poor* (as often pronounced), and short in *pull*. By using the circumflex (or the macron) for the long sound in each case we have the four sounds denoted by what is practically one letter. No. 3 is the close [ô] heard long in *poet*, short in *poetic*; No. 4 the open [o] heard long in *door*, short in *window*. No. 5 is the close [ø] heard long in *autumn*, short in *autumnal*; No. 6 the open [ə] heard long in *cloth*, short in (British) *watch*. No. 9 is the close [i] heard long in *reed*, short in *react*; No. 10 the open [i] heard long in *beer*, short in *bit*. No. 11 is the close [ê] heard long in *chaos*, short in *chaotic*; No. 12 the open [e] heard long in *vary*, short in *set*. No. 13 is the slightly closer [a] of *care*, No. 14 the more open [a] of *cat*. No. 33 is suggested as a suitable form for the obscure vowel between [e] and [i], often heard in unstressed syllables in such words as *added, honest, goodness, expect, enclose*. (See above, pages 26, 45). It may be remarked in this connection that this sound must not be confused with the true [i] often heard in unstressed syllables, for example in *heavy, mostly, honey, sickish, music, coming*, etc. When this unstressed e-like *i* (No. 33) is reduced to a minimum, the neighboring consonant assuming the sonority of the syllable,—as often happens, for instance, in a lax pronunciation of *Latin, April*—and it is desired to indicate this lax pronunciation, the vowel-sign may be omitted; thus [latn], [êprl].

The other obscure vowel [ə] is included in the Revised Alphabet and is sufficiently explained in Section III. It may be added here that monosyllabic words are often unstressed in connected discourse, and may then have [ə], whereas when stressed they have a distinct vowel; thus *I spoke to her* [hør], *not to her* [hər] *mother*.

Consonants.—Of the consonants represented by [k] and [g] in the Revised Alphabet there are two varieties which it is sometimes necessary to distinguish. If a front vowel adjoins, or the *u* of *tube* (*i.e.* iû or yû), follows, the consonant is made between the front part of the tongue and the hard palate; otherwise further back, usually between the back of the tongue and the velum or soft palate. Where a distinction is to be made, the form No. 10 in

the table of consonants may be used for the back [g] of *goose*, *glue*, *hug*; and No. 16 for the front [g] of *gig*, *get*, *leg*. Similarly No. 11 may be used for the back [k] of *coo*, *hook*, *cow*; and No. 17 for the front [k] of *kick*, *keep*, *cat*, *hack*, *cute*. When next to a central vowel the consonant too is intermediate, and wavers as the vowel inclines more to the front or the back variety.

After a voiceless consonant, as in *pure*, *cute*, if a consonantal [y] is pronounced, that is [pyûr], [cyût], it is more or less unvoiced and may then be represented by No. 19 in the table. Similarly in *quit*, *sweet*, etc., the [w] is often unvoiced, as if *quit* were *q-whit*, and *sweet* were *s-wheat*. This unvoiced [w] may be denoted by a ligature of *h* and *w* (No. 46). When other consonants are unvoiced, e.g., [l], [m], [n], [r], by the influence of a neighboring voiceless consonant, as in *cloth*, *smell*, *snake*, *try*, it is best not to use a separate letter, but to indicate the unvoicing, if necessary, by means of a small subscript circle.

Voiced consonants are generally weak, voiceless consonants strong; compare *zeal* and *seal*, *goad* and *coat*. But there are weak voiceless consonants; e.g., the finals of *is*, *his*, *used*, *edged*, *passed*. We generally regard these intermediate sounds as voiced if the preceding sound is voiced, and as voiceless if the preceding sound is voiceless; writing *his*, *used*, as [hiz], [yûzd]; but *passed*, *laughed*, as [past], [laft]. If it is desired to distinguish these weak voiceless consonants it may be done also by means of the subscript circle.

(2) *Dialectic and Foreign Sounds*

In dealing with English dialects and with foreign languages, it is often necessary to distinguish sounds that do not occur in standard English. The letters in the tables are meant to meet this requirement, tho they also contain the familiar signs for the familiar sounds.

Vowels.—In the table (Plate 2) the letters are arranged with special reference to the position of the tongue. The normal Rounded Back Vowels (Nos. 1 to 6) have been explained above. The Forward Back Vowels (Nos. 17 to 21) are made somewhat further forward than the normal back vowels and are less rounded. No. 17 is Gaelic *ao* in *laogh*; No. 18 a frequent pronunciation of the final vowel in *valuc*, *can you*, etc.; No. 19 the same in *sorrow*, *cargo*, etc.; No. 20 the same in *fellow*, *tobacco*, etc. No. 20 is also

common as the first vowel of *obey*, *potation*, etc. No. 21 is the usual American vowel in *hut*, *cup*, etc. In words like *value*, *sorrow*, *fellow*, etc., the vowels 18, 19, 20 are probably as common as 2, 3, 4, and hence not strictly dialectic. Indeed, even the stressed vowels in *who*, *pull*, *polc*, *door*, are often more nearly forward back than real back vowels.

The Central Vowels, excepting the two very open ones (8) and (16), have as characteristic a small low circle. The Posterior Central Vowels (27-29) are formed with the tongue somewhat farther forward and flatter than it is in forming the back vowels. The lips are also less rounded. No. 27 may be heard in Northern Great Britain and the Southern United States in *too*, *school*, etc.; and in most of America in *rule*, *lute*, *news*, and even in *music*, *beauty*, *Tuesday*, etc. It is very nearly identical with the Swedish and Norwegian *u* in *hus*. No. 28 is the Swedish *u* in *upp*. No. 29 is the vowel heard in Southern England in *up*, *cut*, *hut*, etc. It is similar to No. 8.

The Forward Central Vowels (30-32) are formed with the tongue somewhat farther forward and in a position more like that for the front vowels. No. 30 is heard in Welsh *un* and Russian *syn*; No. 31 in Scotch *guid*; No. 32 is the vowel heard in Southern England in *fur*, *sir*, etc.

Of the Lower Central Vowels (7-8 and 15-16), No. 7 suggests the *aw* of *law*, i.e. [ə]. It occurs for [ā] (No. 8) in *park*, *car*, *father*, etc., in Cockney English, to some extent also in Northern Great Britain and the Southern United States; also in *Vater*, etc., in middle and southern Germany. No. 8 is the vowel usually heard in *park*, *car*, *father*, etc., in Southern England and most of the Northern United States; also the *a* of *Vater* in the most of Northern Germany, and the French *a* of *pâte*. No. 15 is a very common intermediate pronunciation of the vowel in *past*, *after*, etc., being usually confounded with [a] (No. 14). It is nearly the same as Swedish *ä* in *lära*. No. 16 is the *a* of *father*, *park*, etc., often heard in eastern New England; the vowel of French *patte*, Danish *mane*, Hannoverian *Vater*, etc. It is included in the Revised Alphabet, as [ā], and fully described in Section III.

The Rounded Front Vowels (22 to 26) are similar to the normal front vowels but have more or less rounding. No. 22 is heard in German *Mühle*, French *pur*; 23 in German *Müller*; 24 in

German *schön* and French *peu* ; 25 in French *peur*, being virtually identical with the usual American vowel in *fur*, *earth*, *bird*, etc.

The Obscure Vowels (33–35) occur only in unstressed syllables and vary more or less according to the character of the neighboring consonants. Nos. 33 and 35 have been explained. No. 34 has a tongue position similar to that of 26 and 32, and is intermediate in sound between 33 and 35. It is heard in German *habe*, *haben*, *habet*, etc., and in English often occurs (insted of ə) before *r* in *father*, *mother*, etc., and in unstressed *her*, *sir*, etc.

Consonants.—In the table (Plate 3) the letters are arranged with reference (1) to the organs concerned in producing the sounds, as guttural, lingual, etc.; (2) to the greater or less interruption of the breath current, as stopped (made by a complete stoppage of the breath), open (made thru a large aperture), fricative (made thru a small aperture); (3) to the state of the glottis, as voiced or voiceless.

No. 1 is the glottal stop heard before initial stressed vowels in Northern England and most of America, also in Northern Germany and Denmark,—the Hebrew *aleph*. No. 2 represents the breath often heard after a stop consonant, as in *cake*, i.e., k'êk'. No. 3 is the ordinary *h*; 4 a harsh *h*, heard in Arabic; 5 the glottal *r* of the Arabic; 6 the Hebrew *gof*, also a common Swiss pronunciation of *k*; 7 the Armenian *xe*, Swiss *ch*; 8 the uvular *r* of France and Germany, the Northumbrian *bur*; 9 an untrilled variety of 8, common in Germany; 10 *g* in *good*; 11 *c* in *cook*; 12 the open North-German *g* in *Tage*; 13 *ch* in German *ach*; 14 Russian *l* in *palka*; 15 *ng* in *long*; 16 *g* in *gig*; 17 *k* in *kick*; 18 *y* in *ye*; 19 German *ch* in *ich*; 20 Italian *gl*, Spanish *ll*, etc.; 21 Italian *gn*.

Nos. 22 and 23 are palatal stops made even farther forward than 16 and 17, and with a more fricative quality, so that they suggest the English *j* in *jet* and *ch* in *chip*. Nos. 24 and 25 are the palatal *z* and *s* of Polish, etc.; 26 the *z* in *azure*, French *j* in *je* and *g* in *gentil*; 27 *sh* in *she*, *s* in *sure*, French *ch*; 28 English *d* made at the alveolar process (see 35); 29 English alveolar *t* (see 36); 30, 31, the usual *z* and *s*; 32 *r* as made by trilling the tip of the tongue; 33 an untrilled variety of 32, the usual *r* in *red*, *very*, etc.; 34 *n* in *nun*. Nos. 35 and 36 are the truly dental *t* and *d* of Sanskrit, French, etc., in making which the tip of the tongue touches the base of the upper teeth, or the adjacent gums; 37 and 38 English *th* in *this*

and *thin* ; 39 the usual *l* (there are varieties which may be easily differentiated); 40, 41 the usual *b* and *p* ; 42 South German *w*, Spanish *b* in *saber* ; 43 German *w* in *zwei*, *schwarz*, etc.; 44 the usual *m* ; 45 English *w* in *war* ; 46 the same sound voiceless, a common pronunciation of *wh* in *what* ; 47 French *u* in *buis* ; 49 French *u* in *puis* ; 49, 50 English *v* and *f*.

G. H.

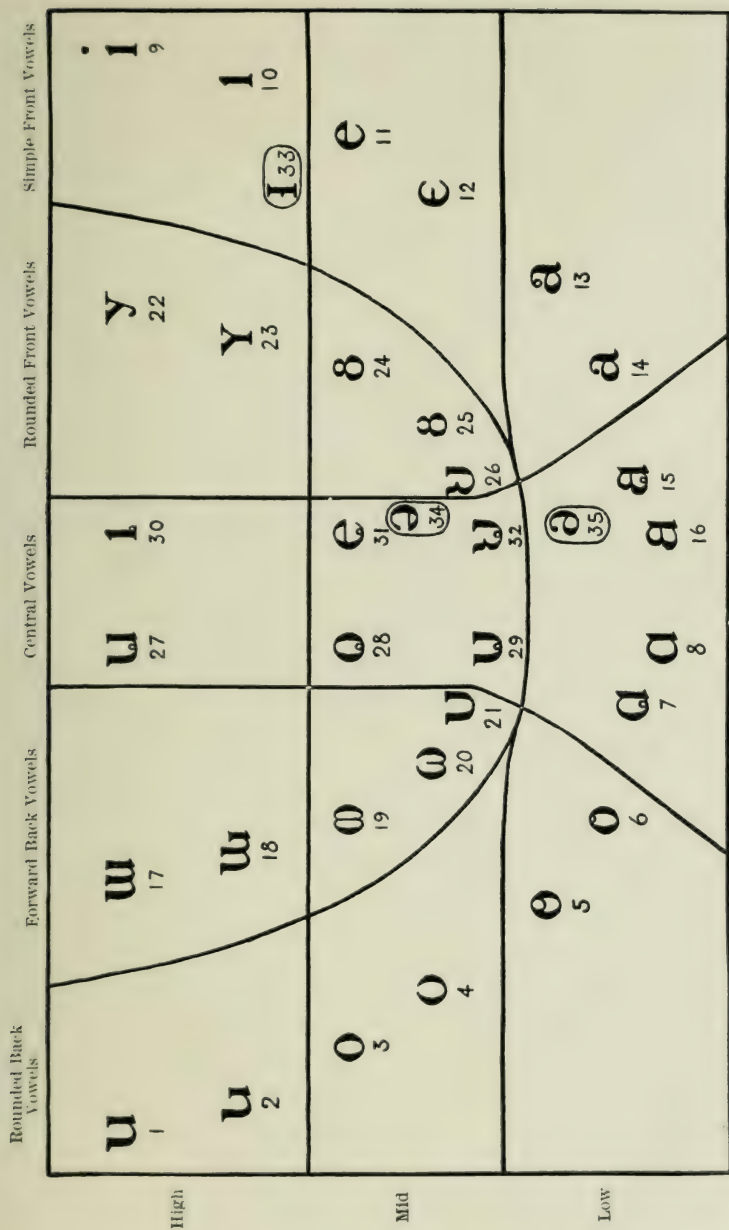
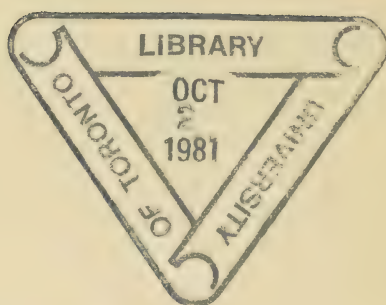


PLATE 2.—Table of Differentiated Vowels

		Guttural		Lingual				Labial			
				Velar	Palatal	Dental	Bi-labial	Velo-labial	Palato-labial	Denti-labial	
Open Consonants	Stopped Consonants	Voiced			g 10	ɕ j 16 22	d ð 28 35	b 40			
		Voiceless		ʼ 1	q k 6 11	c ɕ 17 23	t ʈ 29 36	p 41			
	Fricative	Voiced			ɣ 12	ɣ ʒ 18 24	ʒ z ð 26 30 37	w 42	w 45	y 47	v 49
		Voiceless		ʼ h H 2 3 4	Ɂ h 7 13	h f 19 25	ʃ s ɸ 27 31 38	ɸ 43	ɸ 46	ɸ 48	f 50
	Sonorant	Liquid		ɾ 5	ʀ ʀ ɭ 8 9 14	ɭ 20	ɾ ɾ ɭ 32 33 39				
		Nasal			ŋ 15	ɲ 21	n 34	m 44			

PLATE 3. Table of Differentiated Consonants



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