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ARTICLE I.

DR. LEPSIUS'S UNIVERSAL LINGUISTIC ALPHABET.

By Joseph S. Ropes, A. M., Boston, Mass.

Das allgemeine linguistische Alphabet. Grundsätze der Uebersetzung fremder Schriftsysteme und bisher noch ungeschriebener Sprachen in Europäische Buchstaben. Von R. Lepsius, Dr. O. Prof. an d. Universität u. Mitglied der K. Acad. d. Wissenschaften zu Berlin. Berlin: 1855. 8vo. pp. 66. or, *Standard Alphabet, for reducing Unwritten Languages and Foreign Graphic Systems to a Uniform Orthography in European Letters. By Dr. R. Lepsius, Professor at the University, and Member of the Royal Academy, Berlin. Recommended for adoption by the Church Missionary Society. London: 1855. 8vo. pp. 73.*

[A brief historical notice of the author of this work, may not be uninteresting to our readers.

CARL RICHARD LEPSIUS is most widely known as an Egyptian scholar; the magnitude and interest of his contributions to that department of knowledge throwing comparatively into the shade his other labors. Yet these, also, have been by no means of small account: from the commencement of his career as a scholar, general archæological and

philological investigations have claimed a considerable share of his activity. He completed his university studies at Berlin, in the year 1833, at the age of twenty-one; his graduating thesis was "De Tabulis Eugubinis." The following year he published his "Palæography as a Means of Linguistic Investigation" (*Palæographie als Mittel der Sprachforschung*), an essay of remarkable ingenuity, and went to Paris to continue his philological training. Thence he was soon drawn away to Italy, by the influence and aid of Chevalier Bunsen, at that time Prussian ambassador at Rome, and commenced with that celebrated man an intimacy, personal and scientific, which has powerfully affected his whole course since. He made his first public entry into the ranks of Egyptologists in 1837, by the publication of his "Lettre à M. Rosellini sur l'Alphabet Hieroglyphique," a little work whose views were, in many respects, decidedly in advance of anything previously made public, and which has not, even yet, been superseded. During the following years, his activity was unremitted and constantly productive: he made valuable contributions to archæological Journals, in France and Italy; he took the grand prize of the French Academy for two linguistic treatises, "On the relations of the Semitic, Indian, Ethiopic, Zend, and Egyptian Alphabets," and "On the origin and relations of the Numerals in the Indo-European, Semitic, and Coptic languages;" he investigated the ancient Italic languages, and published their existing relics (*Inscriptiones Umbricæ et Oscæ*: 1841); he edited a facsimile transcription of the most extensive remaining monument of the ancient Egyptian literature, the so-called Book of the Dead (*Das Todtenbuch der Egypter*: 1842), and a selection of a few of the most valuable Egyptian historical monuments then known (also 1842: plates only). In 1838, Bunsen had left Italy, and Lepsius followed him later to London, to bear a part in the preparation of the great work upon Egypt upon which he was then engaged. Their joint labors were interrupted in 1842, Lepsius being called away to take the leadership and direction of the Expedition to Egypt, sent out by the Prussian government in the year last mentioned.

It is with this expedition, most honorable and successful in its conduct and results, that his labors in the department of Egyptian science have since been mainly connected. To follow its history may not be attempted here ; its records are to be found written in the Letters from Egypt, etc. (*Briefe aus Ägypten, Äthiopien, und der Halbinsel von Sinai, etc.* : 1852 : two separate translations of the work have appeared in England), and in the Introductory Notice (*Vorläufiger Bericht, etc.* : 1849) of the Expedition and its Results, serving as prospectus to the gigantic pictorial work, the *Monuments from Egypt and Ethiopia* (*Denkmäler, etc.*), in which its collected treasures were to be laid before the eyes of the world. This, too, is now approaching completion. Of all the great works illustrating Egypt, it will be the most extensive, composed of the most carefully selected matter, and most accurately edited. Since the return of the expedition, in 1846, Lepsius has been residing in Berlin, as Member of the Academy and Professor in the University ; occupied in part with the editing and publishing of the works already named. He has also, during the same time, been engaged upon a great historical work, the *Egyptian Chronology* (*Chronologie der Ägypter*) ; of which only the first volume, containing the Introduction and Critical Examination of the Sources (*Kritik der Quellen*) has as yet been published (in 1849). He has also contributed to the *Transactions of the Berlin Academy* very valuable essays on special subjects in Egyptian antiquity ; as, *On the first Order of Egyptian Deities* (published in 1851), *On the twelfth Dynasty of Egyptian Kings* (1853), *Contributions from the Monuments to the History of the Ptolemies* (1853). A volume of lesser essays, of a kindred character, he is understood to have had for some time in preparation ; but it has not yet appeared. That he is nevertheless not entirely absorbed by his Egyptian labors, but finds leisure and inclination for the general philological studies by which he earliest distinguished himself, is shown by the little work, his most recent publication, reviewed below. He is, moreover, as Professor in the Berlin University, constantly engaged in imparting instruction, by lectures and

otherwise, upon the Egyptian Language and Antiquity. More than one American has already enjoyed his teachings, and made experience, in a manner to be gratefully remembered, of the kindness and attention which he is accustomed to show to his pupils.]

THIS unpretending but admirable essay of a distinguished German scholar, is the latest and, we think, incomparably the most successful attempt to construct a *universal alphabet* — so long the desideratum of linguistic science and a practical want of civilized life. What student of language, geography, or history; nay, what intelligent traveller, or even reader of newspapers, has not longed for some more accurate and trustworthy medium of names and sounds than that Roman alphabet on which the nations of Europe have rung such various and innumerable changes? The unfledged tourist, who vainly inquires for a railway “deépo,” or astonishes the natives of Vincennes by his interest in the “Duke de Injun,” the school-boy who learns that there is a Russian fortress called “Ox-a-cow,” the plain citizen who puzzles between “Sebástopol” and “Sevastópol,” without dreaming of the mighty questions of literary and linguistic controversy involved in the small compass of that now familiar word (to say nothing of the scarcely settled controversy between “Sclavonians” and “Slavonians,”), all testify, willingly or unwillingly, to one common want. As the world advances and nations approximate, the confusion of our alphabets becomes worse confounded. We adopt a Polish combination of consonants, with German pronunciation, to express the native title of the great potentate with whom Western Europe was lately at war; and we straightway metamorphose it, by a quasi English pronunciation, almost beyond the hope of recognition! And while Dr. Bowring and others, by a correct English analogy, write *zh* to denote the French *j*, the native of Poland can make nothing of our *sh* until he has transformed it into *sz*. The word which German geographers intended us to pronounce *Kamtchatka*, is resolved by Anglo-Saxon organs into *Kamskatka*! The best

educated American might mistake, in speaking of *thugs* or of *Runjeet Singh*, without the aid of *thag* and *Rana-djit-sing*, in some continental vocabulary. And how long may some reader of future history blunder in the dark before ascertaining that Owhyhee and Hawaii are identical, and that the Otaheite of captain Cook is no other than the Taiti of the piratical French invader !

We need not multiply illustrations of the obvious fact that such a state of things is a serious inconvenience, not to say a disgrace to modern literature and science.

The great and increasing importance of international intercourse, the consequent study of languages, of their etymology, their multiplied ramifications and connections, the valuable results already obtained, call for every possible aid that can be rendered. And at the head of these may safely be placed the preparation of an alphabet so comprehensive as to include the sounds of every known language and dialect, so simple as to be easily applied to them all, and so elastic as to admit of expansion in case of future need.

The introduction and general acceptance of such an alphabet, Dr. Lepsius forcibly argues, must greatly facilitate the study of foreign languages, as well as of the nations, of whose characters these languages are the expression. To appreciate fully the weight of this argument, we must not apply it to those tongues of modern Europe which are so generally diffused that they can be learned from natives in almost any European or American city. But if even in these such blunders as we have instanced above are continually occurring, what can be hoped for where native instruction cannot be procured, and sounds must be acquired by a Frenchman through such a medium as an English or German grammarian can supply in his own alphabet, and vice versa ? Let us try to imagine what notion we could form of the French nasals or the Slavonian gutturals, if no viva voce instruction existed. Something like the same state of helplessness and confusion doubtless exists now, in relation to the sounds uttered by remote nations in various parts of the world.

But it may be asked, where is the great loss in such cases? This brings us to Dr. Lepsius's "practical object" (p. 4), which must command the sympathies of every Christian heart. The aborigines of Africa, America, Australia, and Polynesia, says he, are almost altogether destitute of a written language. Yet to many of them missionaries have been sent and the gospel has been preached. Next to preaching the gospel, the first care of every Protestant missionary has been, of course, to give them the Bible to read in their own tongue. But how could they read without a book; and how can a book be printed without letters? It is obvious that either a new alphabet must be invented by the missionary, in every case; or one so comprehensive as to suffice for several (and if for several, why not for all?) must be provided for him. The advantages of the latter alternative must be apparent to the dullest understanding. Engrossed by his peculiar duties, exposed to the narrowing influences of a contracted sphere, and cut off from intercourse with cultivated minds, the missionary cannot be expected successfully to accomplish such a task. That he has done so much and so well, may excite astonishment; but we must look for greater things still. The British and Foreign Bible Society of London, says Dr. Lepsius, had published, up to the middle of last year, twenty-six million Bibles, or parts of Bibles, in a hundred and seventy-seven different translations, embracing one hundred and eight not European, viz. seventy Asiatic, seventeen Polynesian, eight American, and thirteen African. For such of these as possessed no alphabet, European letters were adopted by the missionaries, each after his own fashion, and in many cases without any enlarged views or comprehensive plan. The result has been "the adoption of the most various systems, often for languages the most closely related, and even for the same language. Here difficult and unintelligible combinations of consonants are employed to express simple sounds; there a multitude of new and unexplained signs; or, again, auxiliary signs are dispensed with, but the accurate expression of the language is sacrificed" (p. 6). "Not long since," adds the Dr., "when

the printing of the New Testament and Psalms in Bechuana had been completed, the secretary of the Church Missionary society expressed to the secretary of the Paris society his joy in contemplating the rich blessings which that great people would derive from it, and the increased efficacy which would attend the labors of the missionaries scattered among them. And yet, replied his sympathizing friend, is it not sad, that these thousands of volumes, completed and ready for use, are but sealed books and wholly useless to our French missionaries among the same people, and to all their pupils, because they use a different orthography !”

Our author further observes that even in India, where the English government has naturally continued to employ the Devanagari and Persian alphabets, which it found ready to its hand, the great advantages of the European system over those of Asia, by its division into vowels and consonants, and especially its importance in facilitating the progress of European civilization in those countries, have led to the introduction of European letters, both by the government and the Bible Society, with excellent results.

There is little doubt that such an alphabet, once fairly adopted by Missionary and Bible societies, would soon become practically universal. The great Russian nation has never possessed any other alphabet (nor any other Bible) than that introduced nearly a thousand years ago by foreign missionaries—the Greek alphabet, enlarged and modified, and subsequently modernized by Peter the Great. The success of Roman letters among the savage tribes of our times is far more certain. The saving of time, labor, and money, in every branch of our benevolent operations, by the adoption of a universal alphabet, would be incalculable ; their acquisition of European languages and European civilization, would be at least as great.

It is obvious that the Anglo-Saxon, whose ear and tongue are so entirely exceptional in modern Europe, is not likely to be the most successful laborer in this field. Yet it is gratifying to know that the first important step was taken by an Englishman, Sir William Jones (p. 8).

This highly cultivated scholar, as Dr. Lepsius most justly calls him, opened the first volume of proceedings of the Asiatic Society in Bengal, published at Calcutta in 1788, by a dissertation "on the Orthography of Asiatic Words in Roman Letters." He points out, in plain language, what is wanted, lays down as a first principle that the orthography of a language *should not apply the same letter to different sounds, nor different letters to the same sound*; and laments the great confusion of English orthography in this respect. He objects, in particular, to "double letters for the long vowels," and substitutes the German or Italian vowel-system for the English — a most important step towards uniformity in European alphabets. In regard to consonants, he finds fault principally with the "frequent intermixture of Italic and Roman letters in the same word." He decides, unhesitatingly, both against the useless attempt to express foreign sounds by English letters, and against the invention of new ones. He therefore recommends, as the only suitable course, the employment of certain distinctive signs, such as had been previously used by individual French and English scholars.

"These views," continues our author (p. 9), "are so thoroughly sound and founded on experience, that we are bound, even now, entirely to agree with them. If, nevertheless, the alphabet proposed by him is still incomplete, the cause of this lies partly in an imperfect comprehension of the general organization of the voice, and of the individual sounds to be expressed, partly in the imperfect carrying out of his own principles."

Next came Gilchrist, whose numerous publications on the Hindustani language gave him great influence in India. Unfortunately, however, he adopted the English vowel-system, and became acquainted with Sir W. Jones's essay too late to make the alterations he would have wished to make. But in 1834, Sir Charles Trevelyan, supported and aided, as it would seem, by the missionaries at Scrampore (p. 10), again brought forward Sir W. Jones's system, and with such success that the other may now be considered as abandoned. The reform, however, extended only to vowels;

the system of consonants having undergone no improvement since the days of Sir W. Jones.

Thus far we have accompanied Dr. Lepsius in the historical sketch with which his work commences. But want of space compels us to refer our readers to the work itself for the details of the less interesting lucubrations of Volney and others (p. 11—13). The labors of Bopp and other German scholars, in the Sanskrit and kindred branches (p. 13), those of Caspari and Fleischer in the Semitic (p. 14), are respectfully commemorated. To unite these two systems, or rather to propound one so comprehensive as to embrace them both, was naturally the next problem suggested; and the solution, equally simple and philosophical, has been found in the "*physiology of the human voice*" (p. 15).

In this direction, says our author, much important progress has been made (p. 16); but the latest and most effective steps have been taken by the Missionary societies, whose duty and interest it evidently was to take the lead in such an undertaking. The first effort was made by Rev. Henry Venn, secretary of the Church Missionary society, who published "*Rules for reducing Unwritten Languages to Alphabetical Writing in Roman Characters, with reference especially to the Languages spoken in Africa.*" In 1849, the American mission at Port Natal appointed a committee to investigate the orthography of the Zulu language; about the same time, additional signs were found necessary to express different sounds in other African dialects, and were introduced accordingly, at several missionary stations. This induced the Port Natal committee to address a Circular, in 1850, to the friends of missions and of African civilization, suggesting a plan for the attainment of a uniform orthography for all. The result was, in Oct. 1852, an Essay sent to the American Oriental society at New York, and published by it (Vol. III. No. II. 1853, p. 421 seq.), entitled "*An Essay on the Phonology and Orthography of the Zulu and Kindred Dialects in Southern Africa,*" by the Rev. Lewis Grout, Missionary of the American Board. This essay, says our author, points out, with great care and skill, the general principles and requisites of

such an alphabet as the African languages appear to demand, and applies them to the Zulu, in which are also found the *clicking sounds* (Schnalz-laute) peculiar to the southernmost African tongues. But as no definite system of sounds is taken as a basis, the letters do not appear in their natural connection. No reference is made to the Sanskrit or other languages of literature, and the change from the old combinations of consonants to simple signs, is effected partly by auxiliary points, partly by changing the letters themselves (p.17,18).

During a visit to London in the autumn of 1852, Dr. Lepsius had occasion to discuss his own alphabet (on which he had been engaged for a number of years) with many influential directors of the missionary societies, and was requested by Mr. Venn (with whose "Rules" it was found to be in harmony) to publish it, along with a brief exposition, for the benefit of the missionaries. The latter part of the request could not be complied with at the moment; but the alphabet itself was communicated, and published by Mr. Venn, in a second edition of his "Rules," at the end of 1853. Still further stimulated and encouraged by an interview with the missionary Koelle, who has contributed so much to the knowledge of African languages, Dr. L. at length resolved to bring forward his work. As it had hitherto only been communicated privately to a few of the most distinguished linguists, he resolved first to submit it, in a very general form, to the Berlin Academy, with a request that, if found satisfactory, suitable types might be cast for it. A committee, composed of Professors Bopp, J. Grimm, Pertz, Gerhard, Buschmann, and Joh. Müller, approved the request, with but one dissentient voice (who, however, saw no use in any attempts of the kind); and the types were ordered to be prepared accordingly (p. 19).

About the same time, the well-known and honored Chevalier Bunsen brought together, in London, a number of distinguished persons, more or less interested in this question, with a view to a definitive choice among rival systems. The missionary societies were represented among others by Messrs. Venn, Arthur, Koelle, Graham, Chepham, Trestrail,

Underhill ; the linguists by Professors Wilson, Müller, Norris, and Dietrich, Sir Charles Trevelyan, Sir John Herschel, Owen, Stanley, Babbage, Wheatstone, Cull, Pertz of Berlin, and last, but assuredly not least, Dr. Lepsius himself, who was only able to be present at the last three meetings. No difference of opinion existed respecting the physiological basis of the alphabet ; but in regard to its *written expression*, three systems were discussed. The first, advocated by Sir Charles Trevelyan, was the one already described as founded by Sir Wm. Jones, the merits of which, in opposition to that of Gilchrist, were fully recognized ; but having no physiological basis, and being imperfect in its details, it was rejected.

The second system, suggested by Prof. M. Müller, proposed to indicate variations from European sounds by italics. To this plan (which, as we have seen, had been strongly opposed by Sir W. Jones) it was objected principally that though practicable in print, it was not applicable to manuscript, which was more essential to missionaries than even to scholars ; further, that sounds undergoing more than one modification (of which there are whole classes) could not be expressed by this system, so that the alphabet would remain incomplete ; and finally, that the very novelty of the system would be likely to prevent its adoption (p. 20).

The third system was that of Dr. Lepsius ; and, so far as his modesty permits us to judge, it appears to have met with almost universal favor. The result was its definitive adoption by Mr. Venn, in behalf of the Church Missionary society, and the publication, at his request, of the present work. At the same time, duplicate sets of the types were ordered by that society from Berlin.

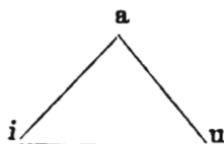
The concluding remarks of this portion of the work are so appropriate, and so full of the modesty of true science, that we cannot forbear quoting them : —

“ It is now to be hoped that this determination (of the Church Missionary society) may be favorably received by the other missionary societies. The alphabet now proposed cannot demand to be approved by every one in all its details.

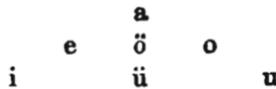
But it hopes to be looked on as a centre, which may give to its applications to individual languages the direction by which the greatest possible approximation to the common basis may be attained. Almost every language requires special modifications ; and can either dispense with certain distinctive signs which the complete alphabet must possess, or require certain explanations which are applicable to these alone. In such cases, the system must be elastic enough to admit of the necessary curtailments and enlargements, without departing from its fundamental principles. It may also happen that, in individual cases, fundamental variations from the proposed alphabet may appear unavoidable, and may be expressly desired by authors. In such cases, the Mission directors should at least demand that the reasons for such variations be expressly stated and referred to the proper committee before they are adopted" (p. 21).

We come now to the scientific portion of the work, in which all the (supposed) possible sounds of the human voice, practically applicable to language, are classified and expressed in European letters. Of this profound and most interesting investigation, we shall attempt but a brief and partial sketch, referring our readers to the work itself, of which an English translation has recently appeared.

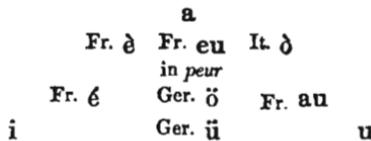
"There are three primary vowels," says our author, with true German ingenuity, "as there are three primary colors" (p. 22). Of course the three form a triangle, thus (the pronunciation being, of course, German):



"All the rest lie between these three, as all colors consist of mixtures of red, yellow, and blue." Accordingly *e* comes in between *a* and *i*, *o* between *a* and *u*, the German *ü* (French *u*) between *i* and *u*, and the German *ö* between *e* and *o*, thus:



But the triangle is an isosceles, not an equilateral ; in other words, “the distances from *a* to *i* and from *a* to *u* are greater than from *i* to *u*. Consequently, the intermediate vowels *e* and *o* split, each, into two, one nearer to *a*, the other to *u*, and *ö* divides in the same way. All these vowels are to be found in European languages, and they form the following pyramid (p. 23):”



“It is true,” Dr. Lepsius remarks, “that there are other shades of difference in many European languages and dialects ; but we need not trouble ourselves about them, especially as they have not as yet been observed in any of the non-European languages with which we have here to do.” In this we fully agree, hoping that our readers may be successful in attempting to realize the subtle distinctions already expounded by the learned doctor, who however intimates, in a note, that he considers English vowels a step beyond even these.

The space above each vowel being already liable to be occupied by the accent (´) or the prosodical sign of long or short (, -), the Dr. magnanimously and wisely sacrifices his patriotic predilections, and places *below* the line, rather than above, the two dots (-) which already indicate, to German eyes, the desired modification of *o* and *u*, and which he sees no reason to supersede. He writes, accordingly : *o*, *u*.

The double pronunciation of *e* and *o* cannot be indicated by the French accents (*é*, *è*), for reasons already made plain. Our author therefore, as others have done before him, denotes the more open vowel by a line, the more compressed or closed one by a dot, also placed below (*o*, *o* ; *e*, *e*).

"Adding the indifferent central vowel" (for symmetry, doubtless), "we have the following (p. 24) : —"

		a		
	e	o	o	
	e	o	o	
	e	o	o	
i		u		u

There still remains a vowel unprovided for, to which our author gives the name of *indefinite*. It is generally indicated in European languages by *e*, as in the following examples : (*French*) *sabre, tenir*; (*German*) *Verstand, lieben*. The English examples of *nation* and *velvet*, seem both faulty; but *the* before a consonant, pronounced without special emphasis ('the man,' 'the boy'), appears to furnish what is wanted. This vowel is inherent in all soft fricatives, and in the first half of the nasal explosives (see below); all which letters, therefore, occasionally form syllables by themselves. Its presence is then indicated by a small circle below the letter (*z*, *m*, *n*, *r*, *l*). When expressed separately, Dr. L. denotes it by the letter *e*, with a similar circle below it (*e*). When, however, it approximates to another rather than *e*, (as to *a*, in the Bornu language) it can be indicated accordingly (*a*, etc., p. 25).

Finally, the clear vowels may be *nasalized*. A sound so familiar to New England ears, requires no explanation here. It is indicated by a circumflex above the letter (*ā*, *ē*, *ī*, *ō*, *ū*, *ō*, *ū*).

Long and short vowels are indicated by the familiar signs of Latin prosody (—, ~).

Diphthongs, if necessary, may be denoted by a curved line below; the contrary, by the usual dots above (*Mai*, *maï*).

The following, then, is the complete view of the vowel system (p. 26) :

	a		ā	ē	ī	ō	ū	ō	ū							
	e	o	o	ǎ	ě	ï	ö	ü	ö	ü	r	l	m	n	n	z
	e	o	o	ā	ē	ī	ō	ū	ō	ū						
i		u														

We come, now, to consonants. These admit of a double classification. First, as they are formed in the throat, by the teeth, or the lips, they are known as *guttural*, *dental*, and *labial*. Secondly, if the passage of the breath is wholly closed in pronouncing them, they are called *explosive* or *dividual* (*dividuae*), because the act of closing divides them into two parts (as, b, t, d). But if the passage is only partially closed, the letters produced are called *fricative* or *continuous* (*continuae*), because of the *continuous friction* of the organ in pronouncing them (as, f, v, w). The letters *r* and *l*, which partake of both characters, the former leaving a passage open by vibration, the latter by only partial closing, are appropriately called *liquids*. In the following table, the simple European consonants are arranged accordingly (p. 27).

	explosives or dividuac.			fricatives or continuae.			liquids.
	hard	soft	nasal	hard	soft	semi-vowels	
Gutturals:	<i>k</i>	<i>g</i>	<i>ng</i>	Ger. <i>ch, h</i>	Dan. <i>g</i>	Ger. <i>j</i>	guttural <i>r</i>
Dentals:	<i>t</i>	<i>d</i>	<i>n</i>	Fr. <i>ch</i>	Fr. <i>j</i>		Ger. <i>r, l</i>
Labial:	<i>p</i>	<i>b</i>	<i>m</i>	hard <i>s</i>	Fr. <i>z</i>	Eng. <i>th(-in)</i> Eng. <i>th(-ine)</i>	
				<i>f</i>	Fr. <i>v</i>	Eng. <i>w</i>	

Of these twenty-five sounds, eleven (*k, h, t, d, n, r, l, p, b, m, f*) are substantially alike in all European languages, and five more (*g, s, z, v, w*), as given above, are generally received in linguistic works. All these our author adopts without modification. In regard to the remainder, the following rules are applied: 1. That a simple sound must be expressed by a simple sign. 2. That no sign shall designate more than one sound. 3. That letters which are differently pronounced in the principal European orthographies, are not applicable to a universal alphabet. 4. That, to prevent confusion, explosive letters must not be used to denote fricative sounds, and *vice versa*. In accordance with these rules, the guttural *ng* is expressed by *n̄*; the guttural *r* (so common in France and Germany), by *r̄*; the German *j* by *y* (its equivalent in English); the German *ch*, for want of a disposable Latin letter, by the Greek χ ; the French *ch* (English *sh*), by *s̄*; the French *j* (in strict analogy with *s*), by *z*. For the hard English *th*, our author can find no better sign

than the Greek \eth ; to express the soft *th*, the soft breathing (spiritus lenis) is prefixed (\eth') ; and the same prefix to χ (χ') denotes the soft Danish *g*. Our space will not allow us to transcribe, in detail, the ingenious reasons by which every one of the above conclusions is supported ; we can only commend them to the attention of our readers (pp. 28–34).

The following is the complete tabular view of European consonantal sounds (p. 34) :

	explosives or dividuae			fricatives or continuæ			ancipites
	fort.	len.	nasal.	fort.	len.	semivoc.	
Gutturales	<i>k</i>	<i>g</i>	<i>ŋ</i>	χ, h	$\chi(\gamma)$	<i>y</i>	<i>r</i>
Dentales	<i>t</i>	<i>d</i>	<i>n</i>	$\{ \begin{array}{l} s \\ z \\ \phi \end{array} \right.$	$\{ \begin{array}{l} s \\ z \\ \phi(\delta) \end{array} \right.$		<i>r, l</i>
Labiales	<i>p</i>	<i>b</i>	<i>m</i>	<i>f</i>	<i>v</i>	<i>w</i>	

Our author next discusses the sounds of Oriental languages. We shall not attempt to follow him, much less to carry our readers through his elaborate survey of faucals, gutturals, palatals, cerebrals, linguals, dentals, and labials, his patient adaptation of signs for each, and the valuable table of examples by which, in conclusion, the whole series, both of vowels and consonants, is illustrated (p. 34–43). Neither shall we attempt to fathom the mysteries of Sanskrit and Hindustani aspirates, for the former of which he adopts the Greek breathing ($\acute{}$), for the latter, the letter *h* following the consonant to which it is applied. For *consonantal diphthongs* (of which the Slavonian languages furnish such choice specimens), no special signs are required, and *double consonants* are to be employed only when they materially vary the pronunciation, as in Arabic and Italian, or on etymological grounds, or in expressing foreign words in which they exist (p. 44).

Some valuable practical remarks follow (p. 45–48), on the application of the universal alphabet to those of individual languages, pointing out how some of the auxiliary signs can be occasionally dispensed with, and the use of others still further extended, as future need may require. A large portion of this concluding section is devoted to the *clicking sounds* (Schnalzlaute) of the Hottentot and other South Af-

rican dialects, which the Dr. proposes to denote by single and double strokes ("), aided by minor auxiliary signs and the guttural consonants with which they are combined in pronunciation. A few interesting remarks on the practical difficulties offered by the older alphabets, Sanskrit, Arabic (in which the services of Drs. Smith and Robinson are honorably mentioned), and especially Hebrew, close the work. An appendix, exhibiting a series of more than fifty alphabets, Asiatic, African, American, and Polynesian, with their equivalents in Dr. Lepsius's alphabet, offers abundant facilities to the linguist and the missionary for testing the capabilities of the new instrument thus put into their hands.

We need hardly assure our readers that the idea of superseding any of the existing orthographies of European literature, was never entertained by Dr. Lepsius. "Such isolated attempts," he remarks in this connection (p. 4), "as have been made, for instance, in England" (he might have added, in America), "belong to those empty fancies which can neither lead to any practical result, nor advance the cause of science."

In a note on page 22, the author informs us of his intention to follow up the present work by a larger one, in which the physiological part of the question will also be treated in detail. We doubt not that its reception will be worthy of the importance of the subject and of the reputation of its distinguished author. But enough is already before us to enable our missionary societies to take up the question. The writer of this Article was present at a meeting of French pastors and friends of missions, convoked last summer in Paris at the house of M. Grandpierre (so well known and so highly respected among us), for the purpose of hearing from Dr. Lepsius, in person, a general account of his system. After an interesting exposition, followed by some discussion, in which the distinguished pastor Monod took a prominent part, it was unanimously resolved to bring the "universal alphabet" under the immediate consideration of the French Evangelical missionaries, with a view to its general adoption by them. We are happy to learn that similar steps have

been taken by missionary societies in Germany, Switzerland, and, we believe, in other countries. The adhesion of the London Church Missionary society has already been noticed. But until the other great societies of England and America follow this example, the work is not half done. And we cannot doubt that, in a question so important to the present and future generations of a multitude of people, nations, and tongues, all petty jealousies, all personal and national predilections, will be laid aside; and we venture to hope that this alphabet, the fruit of such lengthened labors and such extensive researches, may be enabled to effect all the benefit desired and intended by its philanthropic author.

ARTICLE II.

THE SCRIPTURAL AUTHORITY AND OBLIGATION OF THE SABBATH EXAMINED.

By Rev. W. M. O'Hanlon, Burnley, Lancashire. [Continued from page 551.]

The Primeval Sabbath.

OUR last paper was devoted to an examination of the views of Paley and Hengstenberg on the question of a Primeval Sabbath. This led to a consideration of the subject of septenary institutions, and of some of the modes in which writers have attempted to account for these institutions, while they have denied that original appointment of a periodic time (six days' labor, followed by one day of rest), which seems to us the only satisfactory explanation of the prevalent, if not absolutely universal, extension and establishment of this hebdomadal arrangement.

The topic of the Primeval Sabbath, however, is by no means exhausted, as all must be aware who have made themselves at all acquainted with the literature of the question.