

V.—*On the first and second Kinds of Persepolitan Writing.* By the Rev.
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IN the course of my inquiry into the exact powers of the characters in the Egyptian alphabet, my attention was directed to the second kind of Persepolitan writing, as one, a comparison of which with the Egyptian might throw light upon both. From a cursory examination of this writing, it appeared to me that it agreed with the Egyptian in some remarkable particulars, such as making no distinction between the hard and soft sounds corresponding to each other, and having several characters to represent the same sounds in different words. This observation made me desirous of investigating the nature of the writing more fully; and I accordingly procured the work of Westergaard, who is the only writer that has made any considerable progress in deciphering it, as well as the last work of Lassen, containing his latest views on the first Persepolitan writing. An examination of these works, with constant reference to the inscriptions themselves, led me to the conclusion that the authors had, in some important points, misconceived the nature of both these kinds of writing. I found that many rectifications of the views put forward by them were requisite, before the true nature of the languages and systems of writing could be correctly understood. These rectifications, as, if I do not greatly deceive myself, I flatter myself I have ascertained them, I now lay before the Academy, as a companion to my paper on the hieroglyphic character.

To avoid the inconvenience of frequently using the cuneatic characters, I give, once for all, a list of them, arranged according to the order of their constituent parts, without any reference to their value. This arrangement, so far as respects the first kind of writing, is due, I believe, to Seyffarth; and, as respects

the second, to Westergaard; I will then refer to the characters by their numbers, using the Roman numerals, I. and II., to distinguish the two series, should there be any doubt which is meant. I will also use these abbreviations on other occasions, to denote the first or second kind of Persepolitan writing, or the people that used it. This seems preferable to using the terms Persian or Median, which assume facts that are very questionable.*

My attention was given to the first kind of Persepolitan writing, as necessary to the understanding of the second; on account of many words of I., which are transcribed into II., and because the many proper names which appear in both, often, though not always, express the same pronunciation, so far as the genius of the two languages will admit. There are four points in which it appears to me that Lassen's account of I. needs rectification. 1st, As to the existence of *guna* diphthongs in the middle or at the end of words, which he does not recognize. 2nd, As to the use of 2 (*w*) after 26 (*u*), and of 16 (*y*) after 33 (*i*). 3rd, As to the nature of the secondary consonants, as I propose to call them, *generally*. And 4th, As to the powers of some particular consonants, both primary and secondary, which he has mistaken. I will mention these several points in order.

1. Lassen's rule for inserting a short *a* in words is, that it may be inserted between two consonants when there is no other vowel. Now, it appears to me that it may be added to any primary consonant, and that to some, as I will presently shew, it *must* be added, when *i* or *u* follows. In this case it may either combine with the vowel as a *guna*, forming a diphthong, or be sounded as a separate syllable. As examples of the former, I give the words which Lassen writes *bagibis*, *âqunus*. The root of the first is *baga*; and, in the second, the conjugational addition to the root before the verbal personal endings is *na*. I would, therefore, supply *a* in these two cases as a *guna*, converting *i* into *ê*, and *u* into *ô*, reading *bagêbish* and *âqunôsh*. I will give examples of diæresis when I come to speak of the secondary consonants, my present observation being merely introductory to what I shall then have to say.

2. Lassen admits that *ija* and *uwa*, at the end of words, are sometimes to be sounded as long *î* and *û*; but in general he gives them the pronunciation *ija* and *uwa*. The difference between him and me on this point is, as to the frequency

* I have *now* no doubt that these are their proper designations.

with which these different modes of reading the same characters should be adopted. He seems to consider the reading the two characters as one syllable to be rare, whereas I believe it to be the most common mode; and I read many words thus, without a final *a*, which he reads with it. I think, too, that it was not always a long *i* or *u* that was intended to be expressed. Though there are instances of words terminating with *i* or *u*, they are very rare; and it appears to have been considered incorrect spelling: *ij*, or (as I would write the latter character, 16) *iy* and *uw*, seem to me to be, for the most part, used as we should use *i* and *u* at the end of a simple or compound word, by no means implying that the vowel was to be lengthened. Thus, I read the two last syllables in Lassen's *ámija* as one, *ámi*, "I am;" and so, *ṣátija*, *ṣáti*, "he says;" translating both words as verbs in place of adjectives, as Lassen imagines them to be; and, combining this principle with the last, I read, instead of Lassen's *tjija*, *tyé* for *tyai*, which is just the nominative plural masculine of the article or relative pronoun *tyas*, used in the *Védas*. Lassen does not admit that this use of *ij* and *uw* for *i* and *u* could have place in the middle of a word. Here again I differ from him. I read *úza* for *uwaza*, as the name of Suza; and so in some other instances. But, further than this, where an *a* is to be supplied after *iy* or *uw*, in the middle or end of a word, or where the *a* is actually written, I would drop the semivowel, as being a mere fulcrum for the *a*, necessary, according to the genius of I., which did not admit the possibility of *i* or *u* preceding *a*, but unnecessary in our mode of writing. Thus I would write *martiam* for "man," and *Uárazmís*, the name of a country, without the semivowel.* The rule, then, which I would propose on this subject, is this: "*y* after *i* and *w* after *u* are not to be expressed; if an *a* is not expressed after the semivowel, it is sometimes to be supplied, but by no means generally."

3. I distinguish the consonants of I. into two classes, primary and secondary; the former were such as could be used before the vowel *a*, expressed or supplied;

* Since this was written, I have deciphered the third Persépolitán writing to a considerable extent; and I find that the name of this country was expressed in it by *ubarasbaya*, *ba* being the only mode of expressing both *wa* and *ma*; hence I infer that *v* was sounded in this word, and probably *v* and *y* in other analogous instances. My principal reason for making this slight correction here is, that the reader may infer that in other instances, where a correction is not made, the statements made in the text have been confirmed by my subsequent researches.

the latter were such as could not be used before *a*, but took the place of some of the primary consonants before *i*, *u*, or *r*. Lassen thinks that these secondary consonants differed in power from the corresponding primary ones; he does not, indeed, give them the names of primary and secondary, nor does he recognize their connexion in the manner that I do; and, in particular, he supposes them all to be aspirated. On the contrary, I believe them to be perfectly equivalent in sound to their primaries, or to be modifications of them, such as necessarily arose from the juxtaposition of the following vowel; and I consider them to be remains of the syllabic mode of writing formerly in use, retained for the sake of distinguishing syllables with single vowels and with guna diphthongs, which it was necessary to distinguish for grammatical purposes, and which, nevertheless, could not be distinguished if only three vowels were used, and if there were no secondary consonants.

The manner in which this distinction appears to me to have been made will be made evident by the following example. The primary form of the letter *m* was ३; but it had also a secondary form, १७, only used before *i*. Lassen writes this *m̄*, and maintains that both *m* and *m̄* could be used before *i*; whence he argues that they must express different sounds. I, on the contrary, maintain that his *m*, ३, is never used immediately before *i*, but that when it appears to precede it, an *a* is always to be supplied, converting the *i* into *é*; thus, according to my view of the matter, while ८, ३३ may be read either *ni* or *né*, १७, ३३ signifies *mi* only, and ३, ३३ *mé* only. It was necessary to distinguish these, because the former (with a mute *y* following it, as lately mentioned) is the termination of the first person singular present in verbs; whereas the latter (with the same addition of *y*) is an enclitic pronoun, used for “my.” Thus, what Lassen reads “*uta-mija khsathram*,” and translates “*tum hoc regnum*,” I read “*uta-mé khshatram*,” and translate “*meumque regnum*.” I combined the two words “and my” into a single word, as in Latin, but in I. the conjunction was the principal word, and the pronoun the enclitic, the reverse of what it is in Latin. In like manner *dé*, which Lassen writes *dija*, was an enclitic pronoun of the second person singular, signifying “thy.” Instead, then, of using new signs to express the secondary consonants, as if they expressed different sounds from the primary ones, I write them by the same signs, conceiving that they are sufficiently distinguished by their position; and I lay it down as an invariable rule, that if a primary con-

sonant precedes *i* or *u*, when a secondary consonant existed of the same value as the primary one, and appropriate to that vowel, an *a* *must* be interposed, either as a distinct syllable or as a guna to the vowel.* The same rule applies to such combinations as *yi* or *wu*, which are inconsistent with the genius of the language. Thus, I write the name of Darius, *Dárayawósh*; I call the country *Haraútish*, which Lassen writes *Haruwatis*, inserting an *a* between *r*, *9*, and *u*, because there is a secondary *r*, *5*, which alone can precede *u*, and, on the other hand, dropping the *wa* after *u*, pursuant to the rule laid down in No. 2. The Greek name is Ἄραχωσία. The strong breathing between the vowels, here represented by *χ*, was, I presume, derived from some other Iranian dialect than that of I. In like manner I write *Tigrakhôdá* for Lassen's *khudá*, and so in other instances. The want of this *a*, to be supplied before a vowel, has led Westergaard astray in analyzing the transcriptions of II. It is the principle of that mode of writing to express every vowel; but that principle has not been recognized by Westergaard, in consequence of his having been led to give characters the powers of single consonants, which really expressed consonants with *a* at the end.

Before leaving the subject of these secondary consonants I would observe, that, though it was an abuse, the secondary consonants were used *occasionally* to express syllables. Such was the old custom, as we may infer from its being the practice in II.; and though the alphabet of I. was constructed on the principle of not recognizing it, it was hard to banish from the language a mode to which they had been accustomed, and which still prevailed in neighbouring dialects, and, perhaps, in the popular mode of writing the language I., which was, doubtless, as in Egypt, different from the mode of writing used on the monu-

* Within the last month, Mr. Norris of the Royal Asiatic Society has communicated to me the following facts, which appear to me decisive in favour of the rule here laid down. In the great inscription at Bisitun, the names of Cyrus and Babylon have the *r* or *l* expressed by *5*, the secondary form, in the nominative, and by *9*, the primary form, in the genitive; and that of Margiana has *22*, the secondary form of *g*, in the nominative, and *25*, the primary form, in the genitive. According to my mode of reading, the declension is, according to the analogy of the kindred languages, *N. Kurush*, *G. Kuraush*; *N. Margush*, *G. Margaush*; as in Sanscrit, *N. Sínus*, *G. Sínós*, for *Sínaus*; in Zend, *N. pasush*, *G. paseush*. But what sort of a declension would be *N. Kurush*, *G. Kurush*; *N. Marghush*, *G. Margush*, according to Lassen's reading of the characters?

ments. Even in the inscriptions of Darius, there seems to be one instance, at least, of a character representing a syllable. I allude to the name which is in one place written *Shuguda*, and in another *Sóg(u)da*; where the secondary form of *g* preceding *u* must, I think, be read syllabically *gu*. In the inscription of Artaxerxes Ochus, the secondary form of *w* before *i* is used more than once to express the syllable *wi*, as is the secondary form of *m* for *mi*. The knowledge which we now possess of the strictly syllabic nature of II. enables us to account, in the most satisfactory manner, for all these anomalies. An old custom, though discountenanced at court, is not easily eradicated from a people, and will occasionally shew itself. I should add that there are two instances of double letters regularly used in I. Instead of a secondary form of *t* to be used before *r*, analogous to 19, the secondary form of *p* before *r*, I. used 34 to express the combination *tr*. The character 15, too, which is used with 8 (*n*) to express "king," has been supposed by Westergaard to be *rp*, thus giving the word *narpa*, from *nar*, "a man," and *pa*, "to defend," a compound which is said to be used in Sanscrit.

4. I now come to consider the errors which Lassen has committed in respect to the powers of individual letters. There have been, as yet, thirty-three characters met with, exclusive of double letters and contractions, such as *tr* and *rp*. I arrange these as three vowels, nineteen primary consonants, and eleven secondary consonants. As to the vowels, sixteen of the primary consonants, and nine of the secondary ones, the only objection that can possibly be raised to Lassen's values is, that he does not give the same values to the nine last as to the corresponding primary characters, but imagines distinct values for them. There remain five characters, three primary, and two secondary, of which Lassen's values at least need to be verified; and as to one of these, that numbered 10, it has been proved by Holtzmann, in the clearest manner, that his value is altogether wrong; that it is related, as a secondary letter before *i*, to *d* and not to *k*, or *ch*. Of the other four I will endeavour to settle the values in what follows. But though Lassen has given correct values to the sixteen primary consonants in question, they are not always such as suggest their pronunciation to an Englishman. I will, therefore, substitute other values for them adapted to England. The alphabet will then stand thus, the first value of each character being Lassen's and the second my own. As to the vowels and semivowels I refer to the observations already

made. It should be observed that the breathing, 21, expressed by *h*, was a very slight one. When initial it was scarcely, if at all, distinguishable from 30 (*a*); and when medial it indicated a fresh emission of the voice after an interruption, like the Arabic *hamza*.

THREE VOWELS :

30. *á, á*33. *í, í*26. *u, u.*

NINETEEN PRIMARY CONSONANTS :

2 semivowels,	16 <i>j, y</i>	2 <i>w, w.</i>	
2 breathings,	21 <i>h, h</i>	27 <i>kh, kh.</i>	
2 labials,	35 <i>p, p</i>	6 <i>b, b.</i>	
2 dentals,	7 <i>t, t</i>	28 <i>d, d.</i>	
2 gutturals,	13 <i>k, k</i>	25 <i>g, g.</i>	
2 palatines,	29 <i>k' ch</i>	?	
4 sibilants,	14 <i>ç, s</i>	?	
	32 <i>s, sh</i>	?	
3 liquids,	3 <i>m, m</i>	8 <i>n, n</i>	9 <i>r, r.</i>

ELEVEN SECONDARY CONSONANTS, VIZ. :

4 before <i>i</i>	31 <i>v, w</i>	10 <i>k'h, d</i>	17 <i>ṁ, m</i>	6 <i>j, ?</i>
6 before <i>u</i>	11 <i>χ, kh</i>	20 <i>d'h, t</i>	23 <i>dh, d.</i>	
	24 <i>q, k</i>	22 <i>gh, g</i>	5 <i>ṙ, r.</i>	
1 before <i>r</i>		19 <i>f, p.</i>		

The characters 12, *z*, 1, *z'*, and 18, *ç*, as Lassen denotes them, are the soft sounds of *ch*, *s*, and *sh*; but it is a difficult question to decide which represents the soft sound corresponding to each letter, as well as to which 6, *j*, corresponds. In the inquiries which I am about to make, I will use Lassen's values of these four letters, till I establish my own in lieu of them. I remark, in the first place, that it seems hopeless to attempt the solution of this problem by the etymology of words. All the words in which any of these letters occur, the etymological relations of which I have been able to ascertain, seem to have had, in their original forms, a hard *g*, which has been capriciously softened down into all these letters, just as the hard *k* has been into *s*, *sh*, and *ch*. The word *zanánám* points to the Greek root *γεν*, in Sanscrit *jan*. The first syllable in *wazarka* is a

softening down of *mag*, as I shall have occasion to shew hereafter; on this, however, no stress should be laid, as it is not a word properly belonging to the language of I., but transferred from another language. The same root appears in *maz*, part of the word *mazdâ*, but it also appears with a different letter in the superlative *mašishta*. Probably the original form, of which this is a softening down, was *magwistas*, the positive being formed on the analogy of the Latin *suad-vis*, or Greek ἡδύς, for ἡδ-Ἔς. The word *ḡati* is the Greek *φᾱτι*; the original form was *gvati* or *gwati*, from which both this Greek form, and the Gothic *quat*, as well as the Latin *inquit*, and the Persian *gu*, *guften*, are all derived. Again, the word *âzamiâ*, *adveniat*, is the third person singular, potential or optative, from *âzam*, compounded of the preposition *â*, *ad*, and *zam*, “to come,” which is not found in Latin or Greek,* but is the Sanscrit *gam*, Gothic *quiman*, and the Anglo-Saxon *cuman*. We have thus the three letters in question, all in different words, representing the hard *g* of a parent language, akin to the European languages. It must, therefore, be by the help of transcriptions alone that the value of each can be ascertained.

The transcriptions to be looked to are those in II., in Greek writings, and in the modern languages of the country. In order that the transcriptions in II. should be available for this purpose, it is necessary to use the precaution of not assuming the value of any of these letters, in the inquiry into the powers of the characters of II. To this I have carefully attended; I have used as data the values of the other letters of I., but have carefully refrained from using as such the values of any of these three letters.

The letter *z* of Lassen occurs in the names *Zaraka* and *Uârasmi* or *mis*, in both of which it is transcribed by *s*. I read the names in II. *Ersa.ra.an.ka* and *Wa.ra.s.wi.s*. In explanation of this I would observe that the syllable *Er* signifying in II. “land,” is here prefixed to the name of the first of these people, as it is in other cases substituted for an equivalent prefix, *ga* or *ḡa*. I

* Unless, indeed, it appears in *ven* for *gvn*. The difficulty is in the interchange of the nasals at the end. That *vivo* was *gvivo* (whence the preterite in *ixi* and supine in *ictum*), connected with *vigeo*, and with the Gothic *quiva*, “living,” our “quick,” admits of no question; and this is in Sanscrit *jiv*; in Greek βίβ, dropping the guttural, and ζα, softening down the guttural and dropping the labial. There would, therefore, be no difficulty in a Latin *vem* representing the Gothic *quim*; but I am not aware of there being authority for changing the *m* of a Latin root into *n*.

would also observe that the nasal in the first name, dropped in I., is retained in II.; that *w* is, in the second name, as always in II., used for *m* followed by a vowel; and that the corresponding hard and soft sounds were not distinguished; nor, generally speaking, were *s* and *sh*. These transcriptions, then, leave it open whether *z* was the soft sound of *s* or of *sh*; but I think they prove that it was not that of *ch*, for this would, I should think, have been written with a *t* before *s*. The Greek transcriptions are *Σαράγγαι* and *Χωράσμοι*, both with *σ* in Herodotus; but Arrian writes the former name with a *Z*, and Strabo with a *Δ*, *Δράγγαι*. In modern Persian, the *σ* in the latter word becomes *z*, and in Zend they are both represented by the corresponding letter. *z'* occurs only in the one name, which, in II., is totally different. The Greeks represented it by a *σ*, *Σούσα*, and in modern Persian it is represented by *z*. The third of these letters occurs in three names of countries; *Parθawa* was probably *Persawa*; though the second character, which is partly defaced, may have been different from *θ*, which I take it to be. *Aθura* is clearly *As.su.ra*; the third, *Satagush*, is *Er.t.ta.ku.s*; the syllable *θa* being translated into *er*, in place of being transcribed. This connects *θa* etymologically with *ga*, *γη*, and with the Zend *za*. The Greek transcriptions are *Πάρθοι* and *Παρθυαῖοι*, *Ασσύριοι* and *Σαρραγύδαι*. I may add that *Μιθρα*, the Sun God, was written *Μίθρας* by the Greeks. It appears to me evident that the *θ*, in these transcriptions, had the sound of our soft *th*, or *dh*; and that it was substituted for the soft sibilant, to which the Greeks had no proper equivalent in their language, their *ζ* being properly a double letter. It is exceedingly improbable that this was the sound of the Persian letter in question, as we know that the modern Persians cannot pronounce it, but are obliged to substitute for it, when it occurs in Arabic words, the English *z*.

In transcribing names of countries, it is certain, from what has been already said, that II. did not, in most instances, transcribe the names from I. The supposition that they did led Westergaard into many errors. Thus, he reads the name of India, with hesitation, *Sidhush*, the name in I. being, according to Lassen, *Hidhus*. He inclines to believe the first letter a different one from that to which he gives the sound of *sa*, though closely resembling it; otherwise, he would have to represent the word, according to his alphabet, by *Saithush*. I read *Si.n.tu.s*, as I read *Ersaranka* for *Zaraka*, restoring the *n*, which I. had omitted.

There are transcriptions of another sort, however, in which words appearing in I. are copied into II., and from these we may hope to gather the exact pronunciation of the letters. I observe, then, first of all, that the I. word *tacharam*, a sort of building, is transcribed in the inscription B, at the end, *ta.t.sha.ra.m*. In this word there are two characters used, which appear not to be used in native words, namely, II. 37, which represents *m* final, and II. 74, which is evidently a modification of II. 73, *sa*, and which, from its use in this place, cannot, as it appears to me, have been any other modification of it than *sha*. Now, in representing the word *paruzanânâm*, the syllable *za* is represented by this character, 74. This could not, I think, have been the case, if *z* had the power of *j*, for then *pa.ru.ut.sha.na.na.m* might have been written, as *ta.t.sha.ra.m* was written for the I. *tacharam*; nor, again, could it be equivalent to our *z*, or our *s* in *is*, for this would have been represented by simple *sa*, 73: I conclude, then, that Lassen's *z* was the soft sound of *sh*, equivalent to the French *j*.* This is confirmed by the transcription of another word, *wazarika*, declined as an adjective, "very great," in I., but clearly a foreign word. It belongs to a language different from both I. and II., but nearer II. It resembles II. in the radical part *waz*, the *w* being substituted for *m*, for this is a form of the root *mag*, &c. It resembles II. also in the form of the superlative, *arka*. The form in II. is *arra*, evidently derived from *arka* by assimilation, as in *ersarra*, from *ersa*; and in transcribing this word, it is represented by *akka*, using another mode of assimilation, as *ικπος* was made *ικπος* or *ικκος*. Now, in transcribing the second consonant of this word, this people used, in general, the character just mentioned, 74, *sha*, but in one instance it is represented by the combination of another character with this. This is in the inscription O, that of Darius from Mt. Alwand. It is here preceded by the character signifying *na*, 4, which is here used to mark that the consonant should be softened. So the Egyptians expressed the *d* at the beginning of the name Darius, by *n* and *t* united; and in the Leyden Papyrus, where foreign words are represented in Enchorial characters, *n* and *s* are employed

* I have since found that in the third Persepolitan writing, at Nakshi Rustam, the name *Zaraka* begins with a character of the same form as II. 74; while *ḡa* is expressed in *Satagush* and *Parḡava* by a character which is interchanged with one of the same form as II. 73, and which had certainly the value *sa*. These facts confirm the conclusions at which I had arrived in the text.

to express *z*. The syllable, then, which Lassen writes *za*, is expressed by *n'sha*, a combination which, by analogy, should represent a softened *sha*, or *zha*. This being settled, it remains to decide whether Lassen's *z'* or *ṣ* was our soft *s*; and though the transcription of the name Susa, in I., which would then be *Uja*, is a difficulty, I think there is an immense preponderance of argument in favour of *ṣ* being soft *s*, or *z*. It is twice transcribed by *s* in II., which *z'* never is; and the reading the transcription of the name of Assyria in I. "*Ajura*," appears to me attended with far greater difficulties than to read Susa "*Uja*." I, therefore, give the letters 1, 18, and 12, the values *j*, *z*, and *zh*. With respect to 4, it cannot be a secondary value of 18, for this is used repeatedly before *i*; on the contrary, 12 is never so used; and the character 12 is much more frequent than 1. I, therefore, class 4 with 12, as its secondary value before it, although there is no positive proof that it is not a *j*.

I conclude with transcribing a passage as Lassen writes it, and as, according to my corrected method, it ought to be written. I take the conclusion of the inscription E.

᠙âtija khsjârsâ, khsâjaṣija wazarka; wasnâ Auramazdâha ima hak'his
Zâti khshyârshâ khshâyazia wazharka; washnâ Aüramazhdâha ima hadish
 âdam âqunwam; mâm Auramazdâ pâd'huwa hadâ bagibis; utamija khsa-
 âdam âkunawam; mâm Aüramazhdâ pâtu, hadâ bagêbish; uta-mê khsha-
 thram utâ tjamija kartam.
tram utâ tya-mê kartam.

I place also in juxtaposition Lassen's translation and my own :

Generosus (sum) Xerxes, rex magnus. Ex voluntate Auramazdis hanc
Dicit Xerxes, rex magnus. Ex voluntate Auramazdis hanc
 aulam-columnarem ego erexi. Me, O Auramazdes, tuere, (*cum*) diis *hujus loci,*
aulam ego feci. Me, O Auramazdes, tuere, unâ cum diis,
 tum *hoc regnum, tum hoc palatium.*
meumque regnum, atque meum opus.

In the first part of a critique on Lassen's work, by Holtzmann, the mis-translations *hujus loci* and *palatium* are noticed, but the initial sentence is not

touched on; and the attempt at explaining the enclitic *mé*, "my," is worse than Lassen's.

I now come to consider the second writing. Here I adopt a great number of Westergaard's values of the characters. As to many of them, however, I differ from him more or less. In some I reject his modifications of the values of consonants, which, it appears to me, this people never intended to distinguish. In some cases I add vowels to his values, thus making characters to represent syllables, which he made simple letters. In other cases I substitute a different vowel for his; and in some cases I differ altogether as to the value of the character. These differences will be seen in the catalogue of the characters, where I first give his value, if he has given any, and then my own, if I have been able to satisfy myself as to it. They will also appear from comparing passages as transcribed by him and by me. In this place I will mention the differences between us, in respect to general principles.

1. Westergaard thinks that II. had six vowels, *a, á, i, u, e,* and *o*, and sixteen consonants, *q, k, t, p, kh, ph, th, j* (i. e. *y*), *r, w, s, sh, z, h, n,* and *m*; and he thinks that the characters represented, in the first place, these twenty-two characters, and then syllables, composed of the consonants followed by vowels.

I think that there were four vowels, *a, i, u,* and *er*, which this people regarded as a proper vowel; and only five consonants, *p, t, k, s,* and *n*; that besides these nine simple sounds, there were characters representing combinations of the five consonants with preceding and following vowels; and that the vowels also formed combinations with each other. Of these there were or might be twelve, viz., *ai = é, ya, yu, yer*; *au = ó, wa, wi, wer*; *aer = ár, ra, ri, ru*. It is probable that many combinations which were theoretically possible had no representatives at all, while many had two, or even three, which were perfectly equivalent, as in the case of the Egyptian hieroglyphics. Besides what may be called the regular combinations, consisting of one consonant and one vowel, there were some which represented more complicated combinations, that happened to occur frequently, such as *tas* and *rus*, in which a vowel lay between two consonants, and *ersa*, in which there were two vowels joined to one consonant. There were also characters, such as 37 and 74, already noticed, which were confined to foreign words, representing sounds occurring in them, which were not used in the ordinary words of the language, or, if used, were not distinguished.

2. Westergaard thinks that, when a simple consonant is placed before a syllable, of which it is the initial sound, it is meant as a sign that the consonant is to be pronounced hard; *k.ka*, is, according to him, *ka* only, while *ka* might be *ka* or *ga*. This appears to me utterly unfounded. In the name of the father of Darius, the same character occurs as begins the name of Darius himself. It is not *ta* in the latter case, and *t.ta*, in the latter, but in both *ta*; on the other hand, *n.na*, is frequently used for *na*, where there is no distinction of hard and soft sounds admissible. I regard this use of a consonant, which is, in point of fact, unnecessary, as analogous to the completion of the Egyptian syllabic signs. There was this material difference, however;—the Egyptians generally, though not always, completed their syllabic signs by the addition of a vowel, whereas in II. they were completed by prefixing a consonant.

3. Westergaard thinks that all the vowels were not expressed in II., and that a short *a* was sometimes to be supplied, as in I. I think, on the contrary, that every vowel was expressed *at least once*, and often more than once; for, whether by way of lengthening the vowel, or to suggest deficient letters in case of a defect in the stone, it was customary to write vowels *twice over*, at the end of the consonant preceding them, and before the consonant following them. This could not be done in every instance, but it seems to have been effected, and we meet with instances of it very commonly, as will appear in the specimens. In such cases it would be an error to pronounce the vowel twice; *per.ersa* is simply *persa*, *an.na.ap* is *anap*; for the same duplication of a letter was applied to the consonants as to the vowels.

The remaining differences between Westergaard's mode of reading and mine regard matters of detail. I now give a specimen of a passage transcribed in both manners. I should observe that the initial signs, 1 and 56, are prefixed to proper names, and other important words. It will be observed that he has given values to some signs which I have left unvalued, and *vice versa*. From the reference to the figures it will at once be seen where we agree and where we differ. The passage I choose is the commencement of the inscription on the tomb of Darius, and I distinguish the representatives of each character by points (.).

3.	4.	27	23.	73.	23.	13	3.	76.	13.	57.	51	11.	31	1.	28.	39.	42	51.	64.	51													
a	.	n(a).	p	ra	.	sha	.	ra	.	r	a	.	u	.	r(a)	.	z	.	da	k	.	ka	Q	.	ru	.	—	ta	.	s	.	ta	
an	.	na	.	ap	er	.	sa	.	er	.	ra	an	.	u	.	ra	.	sh	.	ta	k	.	ka	K	.	ru	.	n	ta	.	as	.	ta

3. 81. 19	22. 25	51. 64. 51	11. 31	56. 55. 66	25. 63. 12. 45. 51
a .kha.kh	ju.tu	ta.s.ta	k.kā	Wo.thi	tu.t'h.thu.sh.ta
an.ku.k	yu.tu	ta.as.ta;	k.kā	— .kā?	tu.ut.tu.s.ta;
11. 31	80. 47. 15. 37	25. 63. 12. 45. 51	56. 55. 66. 23. 13. 4	11. 31	
k.kā	shi.j(a).ti.m	tu.t'h.thu.sh.ta	Wo.thi.ra.r.n	k.kā	
k.kā	si.ya.ti.m	tu.ut.tu.s.ta	— .kā.er.ra.na;	k.kā	
56. 51. 24. 47. 67. 76. 45	56. 71. 23	22. 32. 70. 51	81. 23	23. 5. 81. 63. 4	
Da.ri.j(a).w.u.sh	Ku.ra	ju.t.—.da	kha.ra	ra.sa.kha.t'h.n	
Ta.ri.ya.wa.u.s	Ku.er	yu.t.tas.ta;	ku.er	er.si.ku.ut.na	
56. 71	81. 23	23. 5. 81. 63. 48. 4	34. 77. 37. 51. 32. 15. 13	56. 38	
Ku	kha.ra	ra.sa.kha.t'h.i.n	phi.ni.m.da.t.ti.r	Jo	
Ku;	ku.er	er.si.ku.ut.n.na	pu.ni.m.ta.t.ti.ra	Yu	
56. 51. 24. 47. 67. 76. 45	56. 71	23. 73. 23. 13	56. 71	56. 71. 63. 23. 13	56. 71
Da.ri.y(a).w.u.sh	Ku	ra.sha.ra.r	Ku	Ku.t'h.ra.r	Ku
Ta.ri.ya.wa.u.sh,	Ku	er.sa.er.ra	Ku	Ku.ut.er.ra;	Ku
56. 51. 72. 38. 45. 22	79. 45. 73. 51. 4. 45. 25. 4	56. 71	1. 28. 39. 42		
Da.h.jo.sh.tu	wi.sh.sha.da.n(a).sh.tu.n	Ku	Q.ru.—		
Ta.i.yu.s.tu	wi.s.sa.ta.na.s.tu.na;	Ku	K.ru.n		
5. 28. 69.	13. 23. 13	23. 73. 3. 4			
sa.q.qu	r.ra.r	ra.sa.a.n			
si.k.ku	ra.er.ra	er.sa.an.na			

Until the last word but one, there is no difference between us as to the division or interpretation of the words, except, indeed, as to the precise meaning of the compound epithet of *taiyustu*, “provinces;” but Westergaard takes *saqurrar* as one word, the genitive of *sa*, “this,” whereas I divide the word into two; making *sikku* the genitive *hujus*, from a nominative *si*, and taking *rarra* as an adverb in the superlative degree “most,” forming the superlative of the adjective to which it is prefixed. Thus I take *rarra ersa* to be equivalent to *ersarra*. I

may here mention that the bracket between two syllables is intended to imply that the *a* of the former is to be taken as a guna to the vowel of the latter, converting *u* into *ô*, *i* into *é*, and *er* into *âr*. In the above transcription I have uniformly represented the same character by the same letter or letters; but Westergaard has arbitrarily used *ta* and *da* for 51, and so in other instances. The translation of the above passage is as follows. I connect together words which represent the same word in the original by hyphens, and supply in brackets two short words, which are here omitted, apparently by mistake, but which are found in other similar inscriptions, and in this place in I.:

“Deus maximus (est) Auramazdes, qui [hanc] terram creavit; [qui] cœlum istud creavit; qui hominem creavit; qui fortunam creavit hominum; qui Darium regem constituit; unum, multorum regem; unum, multorum gubernatorem. Ego (sum) Darius, rex maximus, rex regum, rex provinciarum omnia-gignentium, rex terræ hujus maximè grandis.

As a further specimen I give the passage in E, of which the corresponding passage in I. has been already given:

4. 3. 24.	56. 19. 5. 23. 73.	56. 71.	23. 73. 23. 13.	74. 76. 79. 48.
n . a . ri	Kh . sa . ra . sha	Ku	ra . sha . ra . r.	z . u . vi . i.
na . an . ri	K . si . er . sa	Ku	er . sa - er . ra ;	sha . u . vi . n.
Dicit	Xerxes	Rex	magnus ;	ex voluntate
3. 76. 13. 57. 51. 4.	5. 1. 78. 5. 66.	56. 38.	22. 32. 51.	56. 38.
a . u . r(a) . z . da . n	su	— sa . thi	Jo	ju . t . ta
an . u . ra . sh . ta . na,	si	Er . si . ka(?)	Yu	yu . t . ta
Auramazdis	hanc	Aulam	Ego	feci ;
3. 76. 13. 57. 51.	42. 77. 45. 17. 45. 16.	3. 4. 27. 33. 25.	47. 51. 31.	69. 32. 51.
a . u . r(a) . z . da	— ni . sh . — sh . —	a . n(a) . p . pi . tu	i . ta . ka	qu . t . ta
an . u . ra . sh . ta	n . ni . s . su . s . ser	an . na . ap . pi . tu	i . ta . ka	ku . t . ta
Auramazdis.	tuere,	Diis	cum ;	atque
1. 54. 42. 69. 28. 26?	69. 32. 51.	27. 60.	22. 32. 51. 13.	
— qu . q . we	qu . t . ta	p . pu	ju . t . ta . r	
— n . ku . k . vi	ku . t . ta	ap . pu	yu . t . ta . ra	
Regnum meum	atque	id-quod	feci.	

Westergaard divides the four characters after the fourth word into *zu vii*; I divide them into *sha uwin*, or read them in one word, *shôwin*. He takes the character 42 after the vocative, as an interjection; I have found it to be an *n*, and join it to the following word. The enclitic pronoun, after the word signifying kingdom, is injured; Westergaard reads 57, but I think the other mode of completing it more probable. In a parallel passage (D. 18), 79 is used, which seems interchangeable with 26.

When the great inscription from Bisitun, which it is understood that Colonel Rawlinson has copied, shall be published, our knowledge of this language will be considerably increased. Characters will, no doubt, be found there which do not appear in any of the inscriptions yet known, and data will probably be obtained for valuing the greater part of the characters which are now without values, as well as the new ones. Meanwhile, I hope that what has been said will prove interesting, as relating to an ancient language, which, as far as I am aware, has no resemblance in its inflexions to any language of the Indo-Germanic family; though in the fact of its having inflexions it agrees with the languages of that family, in what has been often stated to be their distinguishing characteristic.

NINE SIMPLE SOUNDS.								
A.	I.	U.	ER.	P.	T.	K.	S.	N.
75.	46; 72.	76.	23; 78?	40.	30; 32.	11; 19; 28.	45.	42; 48.
COMBINATIONS OF THE ABOVE SIMPLE SOUNDS.								
. .	<i>ya</i> , 47	<i>wa</i> , 67; 75	<i>ra</i> , 13	<i>pa</i> , 49	<i>ta</i> , 51; 50?	<i>ka</i> , 31; 66? <i>sa</i> , 73		<i>na</i> , 4
é, ?	. . .	<i>wi</i> , 26; 79	<i>ri</i> , 24	<i>pi</i> , 33	<i>ti</i> , 15	<i>ki</i> , ?	<i>si</i> , 5; 80	<i>ni</i> , 77
ó, ?	<i>yu</i> , 22; 38	. . .	<i>ru</i> , 39	<i>pu</i> , 60; 34?	<i>tu</i> , 12; 25	<i>ku</i> , 69; 71; 81	<i>su</i> , 52; 17?	<i>nu</i> , ?
ár, 10	<i>yer</i> , ?	<i>wer</i> , ?	. . .	<i>per</i> , 14	<i>ter</i> , 53	<i>ker</i> , 43	<i>ser</i> , 16	<i>ner</i> , 36
.	<i>ap</i> , 27	<i>at</i> , ?	<i>ak</i> , ?	<i>as</i> , 64	<i>an</i> , 3
		* <i>m</i> , 37	<i>ersa</i> , 8; 82		<i>ut</i> , 63		* <i>sh</i> , 57	
		* <i>va</i> , 29	<i>rus</i> , 68		<i>tas</i> , 70		* <i>sha</i> , 74	

* Characters marked with a star were probably confined to foreign words.

CATALOGUE OF THE CHARACTERS.

		L.	H.			W.	H.			W.	H.			W.	H.
I. 1		z'	j	II. 1		initial	sign	36		pe	ner	71		ku	ku
2		w	w	2		—		37		m	*m	72		h	i
3		m	m	3		a	an	38		jo	yu	73		sha	sa
4		g'	zh(i)	4		n	na	39		ru	ru	74		za	*sha
5		r	r(u)	5		sa	si	40		ph	p	75		o	a
6		b	b	6		—		41		—		76		u	u
7		t	t	7		—		42		—	n	77		ni	ni
8		n	n	8		as	ersa	43		khu	ker	78		—	er?
9		r	r	9		—		44		—		79		vi	wi
10		k'h	d(i)	10		â	âr	45		sh	s	80		shi	si
11		χ	kh(u)	11		kh	k	46		e	i	81		kha	ku
12		z	zh	12		thu	tu	47		j	ya	82		ash	ersa
13		k	k	13		r	ra	48		i	n				
14		ç	s	14		pha	per	49		pa	pa			or	lus
15		rp	rp	15		ti	ti	50		—	ta?				
16		j	y	16		—	ser	51		ta	ta				
17		m	m(i)	17		—	su?	52		su	su				
18		z	z	18		—		53		th	ter				
19		f	p(r)	19		kh	k	54		—					
20		d'h	t(u)	20		—		55		wo					
21		h	h	21		—		56		initial	sign				
22		gh	g(u)	22		ju	yu	57		z	*sh				
23		dh	d(u)	23		ra	er	58		—					
24		q	k(u)	24		ri	ri	59		—					
25		g	g	25		tu	tu	60		pu	pu				
26		u	u	26		ve	wi	61		—					
27		kh	kh	27		p	ap	62		—					
28		d	d	28		q	k	63		t'h	ut				
29		k'	ch	29		wu	*va	64		s	as				
30		â	â	30		t'	t	65		—					
31		v	w(i)	31		ka	ka	66		thi	ka?				
32		s	sh	32		t	t	67		w	wa				
33		i	i	33		pi	pi	68		ro	rus				
34		thr	tr	34		phi	pu	69		qu	ku				
35		p	p	35		—		70		—	tas				

POSTSCRIPT.

Since the above was written, I have applied myself to the third Persepolitan writing, which agrees in character, and, to a great extent at least, in language, with the Babylonian inscriptions, and to the Assyrian writing in Schütz's inscriptions. Having as yet a very scanty supply of data, I have not been able to prepare alphabets of either of these modes of writing. I have, however, ascertained that they both agree in principle with the second Persepolitan. In both, some of the characters represent elementary sounds and some combinations. In both, two or more characters are used to represent the same sounds. In both, no vowel is omitted, but vowels and consonants are repeated in two consecutive characters. The number of elementary characters is greater in both these modes of writing than in the second Persepolitan. In the latter, a single vowel was rarely expressed after a syllable terminating with the same vowel, but this was commonly done in the Babylonian and Assyrian, in which, of course, the simple vowels were of much more frequent occurrence. In the second Persepolitan, *m* was expressed by *w*, but in the Babylonian by *b*, which accounts for the same name being written Berodach in the Second Book of Kings, and Merodach in Isaiah. I have found the name of Babylon in the inscription on a piece of baked clay, shaped like a barrel, brought from the ruins, and in those on a few of the bricks.* I have also found the name of Nineveh on the bricks brought from that place. Both the Assyrian and Babylonian languages appear to have much in common with the Semitic languages; but some of their roots are common to them with the language of the second Persepolitan inscriptions, with which also they have many characters in common. I have found it to be a general rule, though it admits of some exceptions, that where a character occurred in two or more alphabets, it had the same value, or nearly so, in all of them. Thus, the *pa* of the second Persepolitan is *pa* in Assyrian, and *ba* in Babylonian; and so in other instances. The first Persepolitan alphabet, on the contrary, had nothing in common with any of the others.†

* *m*, *w*, *b*, and *p*, are all expressed alike in Babylonian. The name of Babylon, variously written, is found on all the bricks from that city.

† It may be proper to state here that the body of the paper was written in the beginning of May, this postscript in the beginning of June, and the notes at the end of August.