

VII.—*On the three Kinds of Persepolitan Writing, and on the Babylonian Lapidary Characters.* By the Rev. EDWARD HINCKS, D.D.

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SINCE my paper “On the first and second Kinds of Persepolitan Writing” was printed, I have received a copy of the Bisitun inscriptions of the first kind; and I am happy to be able to say, that they completely confirm the three *general* corrections of Lassen’s mode of reading which I proposed in that paper. I will mention some points that appear to me very strongly in favour of my views.

1st. Instances occur, in which words which terminate in 33, 16, *iy*, or 26, 2, *uw*, when they stand alone, are deprived of the final semivowel when an enclitic is attached to them. Thus, *imiya*, “these” (as Major Rawlinson reads it, after Lassen), which occurs alone, IV. 80, occurs IV. 77, with the enclitic *wá*, “and,” and is written *imiwá*. *Huwa*, “he,” with the enclitic for “to him,” is written *hushiya* in the Persepolitan inscription H. 3. This I regard as positive proof that, *in these words*, the final syllable, as the Major writes them, should be dropped. We cannot, however, infer that, where the semivowel was retained before the enclitic, it was sounded as *wa* or *ya*. This same word is, in III. 11, written *huwa* before an enclitic, and yet it must have been sounded *hu*. In *some* words it was sounded as in *har’uwashim*, from *har’uwa*, “all,” and *shim*, “him,” II. 90; but by no means in all. According to my mode of reading, these words would be *imé*, *imé-wá*; *hu*, *hú-shé*; *haruwa*, *haruwa-shim*; the enclitic making no change in the pronunciation of the word to which it is attached.

2nd. Instances occur in which prepositions which terminate with the semivowel, when alone, omit it in composition with words beginning with consonants. Thus, *patiya* is found alone, II. 43, and *an’uwa*, I. 92. Both these occur, also,

in composition, prefixed to consonants, as IV. 71, *patikará*, and I. 58, *an'ushiyá*. Surely it follows from this, that the prepositions were pronounced as dissyllables, *pai* and *anu*. Before a vowel the semivowel is retained, as in *patiyáisha*, I. 13, 18, which is compounded of the former preposition and *áisha*, which occurs alone, I. 93.

3rd. Some new words occur, in which transcriptions or analogy of other languages, in a manner, compel us to read the two letters as a single vowel, even in the middle of a word. Thus, the name of the younger son of Cyrus is, according to Major Rawlinson, *Barfia*, and in the accusative, *Barfiam*. The name given to this prince by Herodotus clearly shews that its final syllable should be read *di* in the nominative, and *dím* in the accusative. The pronoun of the second person singular is, in the nominative, *t'huwam*, IV. 37. This would be, according to my mode of reading, *túm*, which is precisely the Zend form. In II. 75, we have *dhuwarayá*, meaning, "at the gate," the locative singular from *dhuwará*. I read this word *dúrá*; and it appears to me evident that it corresponds to the Greek *θύρα*. I will presently notice the bearing of this correspondence on the value of the initial letter in the word.

4th. I mentioned in my former paper one word in the inscriptions of Darius, in which a secondary letter was used to express a syllable. The Bisitun inscription supplies a great number of analogous instances. Thus, No. 31 is used for 31, 33; twice in I. 4, in the name of the father of Darius; and elsewhere, in this and in other words, as in I. 69, 71, &c. Major Rawlinson reads in these places *Váshtáspa*, *vátham*, &c.; I read *Wishtáspa*, *wizam*, &c. In like manner, No. 24 is used for 24, 26, in I. 93 and elsewhere. The Major reads here *Nabukhadrachara*, without even a distinguishing mark after the secondary letter, such as he used in *vátham*. Elsewhere he reads *khu*, No. 26 being supplied. I read, in both cases equally, *ku*.

5th. When a primary letter occurs before *i* or *u*, in a case where a secondary letter proper to that vowel existed, I laid it down as a rule that *a* is to be interposed, sometimes as a distinct syllable, but generally as a *guna*, or, I should have added, a *vridhhi* to the vowel. I gave some instances of this, and I added more in my note. I will now give some additional ones, including some in which the Major's translation appears to me erroneous, from his not having been aware of this rule. In I. 78, after words signifying "he rose up," come *Bábiruwa*

káram, with the primary *r* before *u* in the first word. The Major places a stop before these words, and translates them "the state of Babylonia." I read the first word *Bábirau*, taking it as the locative, and translating it with the preceding clause, "he rose up at Babylon." The Sanscrit locative, in the corresponding declension, ends with the *vridhhi* diphthong *au*. In like manner, II. 15, he takes *Mádiya*, as he reads it, for an epithet of the following noun, *kárahya*; but it is the locative, and should be read *Mádé*, "he rose up in Media; he said thus to the people." In II. 77 he reads *awiya Hagamatániya*, and translates the two words in his interlineary version "ad Ecbatanam;" but the primary *w* cannot precede *i*; we must interpose an *a*, and thus I read *awé Hagamatáné*, the locative again, and translate "in that Ecbatana," making the first word a case of the demonstrative pronoun, *awa*, instead of a preposition.

6th. The interchange of the primary and secondary letters when, in the course of inflexion, the vowels which follow them are changed, appears to me inconsistent with the supposition that they had different values. The most remarkable instance of this interchange which occurs is in the words signifying "a liar," and "he (or they) lied." These are, according to the Major's mode of reading, *darujhana* and *adhur'ujiya*, or *jiyasha*. Here are two words evidently from the same root, and yet they have not a single consonant in common! The former is, according to my system, written with three primary consonants, and the latter with three secondary ones, *having the same powers*, and thus I make the radical parts of the words only to differ in respect to their vowels. I read them *drójana*, *aduruji*, and *adurujisha*. These last words correspond in form to the Sanscrit *asvanit* and *asvanishan*, from the root *svan*, *sono*. By analogy the root should be *duruj*; but it seems to have been the custom in the old Persian language, when a verb began with two consonants followed by a vowel, to insert that vowel between the consonants in certain of its tenses. The real root would then be *druj*, forming *drójámi* in the present, after the analogy of the first Sanscrit conjugation. Hence we have *drójana* with all the consonants primary ones; while in the aorist, *adurujisham*, the dropping of the *guna*, the repetition of the *u* which follows the liquid before it, and the *i* of the tense ending, require secondary letters to be substituted for the primary ones, there being such in this instance in all the three cases.

7th. The manner of forming the derivatives of roots ending in *u* furnishes a

distinct argument in favour of the identity of sound of one primary letter and its secondary, those which Major Rawlinson calls, after Lassen, *w* and *v*. When a root ending in *u*, which, as I have already observed, when it stands alone, is terminated with *uw*, enters into composition with a word beginning with a consonant, or combines with a termination so beginning, the *w* is dropped, as *par'uzanánám*, *am'utha*, from the roots *par'uw*, *am'uw*, in Sanscrit, *puru*, *amu*. According to my method, the roots are *paru*, *amu*, and the derivatives *paruzhanánám*, *amu-za*. Before a word or ending beginning with a vowel *w* should in all instances be inserted. If the vowel be *a* it is so; thus, in II. 8, we have *uwaspá umartiyá*, *εὐππος εὐανδρος*, where the root *ú bene* takes a *w* after it when preceding *aspa*, *equus*, though in the following word, where it precedes a consonant, no *w* appears. Now it is well worthy of notice that, when the second part of the compound begins with *i*, the secondary form of *w* before *i* is invariably interposed instead of the primary *w*. Thus, from *Bábir'ush*, "Babylon," as Major Rawlinson writes it, he deduces *Bábir'uviya*, "a Babylonian." According to my method, the words would be *Bábirush*, *Bábiruviya*, the secondary *w*, No. 31, expressing not *v*, but the simple semivowel *w*, introduced for euphony, or rather necessarily sounded after *u*, when another vowel follows it without a suspension of the utterance.

It appears to me that these arguments completely establish the correctness of the three general principles contained in my paper. In the two first of them I have been partially anticipated by Major Rawlinson and by Holtzmann, who, however, do not apply them to one-half the cases that I do; but the great principle of secondary letters I believe to be altogether my own, and it affects the mode of reading of a very large proportion of the words of the language. With respect to a few of the letters of the alphabet, I have to correct the values which I gave in my paper; but no change which I have to make is inconsistent with the three general principles above mentioned. I will now briefly notice the new light which the Bisitun inscription throws on the values of individual letters.

I have to notice, in the first place, the discovery of a new letter, \llcorner , which Major Rawlinson values as *n'*. It is *n(u)*, or the secondary form of No. 8, before *u*. Another new letter, which he calls \tilde{n} , is, in fact, the Median character No. 4, as he himself remarks. It was, I conceive, used by mistake by a Median

sculptor for the syllable *na* ; and I read the syllable which the Major expresses by *nan* as *n.na*, or simply *na*.

From what has been already said on the root *druj*, it appears that No. 4 is the secondary form of No. 1, and not of No. 12. Its value is *j(i)*, not *zh(i)*. These letters, being etymologically connected with *g*, No. 25, and *kh*, No. 27, and being transcribed by a Babylonian character, which certainly contains the consonant *k* or *g*, must certainly be *j*. Neither *z* or *zh* are admissible for them.

No. 11 is the secondary form of No. 3, *m*, not of No. 27, *kh*. It is *m(u)*, not *kh(u)*. This appears fully from the inscription, in which *Mudráya*, the country whose name begins with this character, is clearly identified with Egypt. This was the value which I myself had originally assigned to No. 11, but I was led astray by Westergaard's positive statement, that the Median character, No. 28, which begins the corresponding word, was a *q* or *k*. I now see that he had no ground for that statement save Lassen's hypothesis, that the country in question was not Egypt but Kurdistan. The value of that Median character will, of course, have to be corrected.

No. 19 is used at Bisitun without an *r* after it, in a word which Major Rawlinson writes *kufa*. According to my principle, the first vowel should be *gunaed*. On the authority of this word, I must make No. 19 a primary letter, having the same relation to *p* and *b* as No. 27, *kh*, has to *k* and *g*. Accordingly, I write it *ph*, making the above word *kôpha*. I still think, however, that *p* cannot precede *r* without an intervening *a*, and that if it should do so by analogy, it would become *ph*. Thus, *parasâmi*, "I punish," has for its participle *phrasta*, "punished," whence *uphrastam*, "well punished," in IV. 38. The word which the Major reads *prîtá*, and translates *salvete*, as if from a root *pri*, corresponding to the Sanscrit one, I take to be *parîtá*, compounded of the preposition *para* and the root *i*, *eo* ; and I translate it "go forth." Now, if *r* be so decided an aspirate that the *Tenuis p* cannot precede it, as appears to be the case ; and if, as also appears to be the case, it is never preceded by *k* (to avoid which conjunction of letters the Persians used *ku* for the Sanscrit *kri*), we may safely infer that No. 34 was *thr*, not *tr*. The declension of *pitá*, which makes in the genitive *pithra* with this letter, is strictly analogous to the change in the participle of *parasâmi*. Here, then, I restore Lassen's value, and I think we may now safely regard this

as a double letter, not as a secondary syllabic character. The class of secondary letters preceding *r* must, it seems, be rejected.

I must now say a few words on the letter No. 10, as to the value of which I differ from Major Rawlinson, and the use of which letter has been pointed out to me as an objection to my theory of secondary letters. I feel quite confident that my value (founded on Holtzmann's) is right; that the Major's is wrong, though much less astray than Lassen's; and that the facts connected with the use of this letter are quite consistent with my theory. The objection proceeds on the supposition that No. 10, which the Major writes *t'*, is connected with No. 7, *t*; so that, if my theory were correct, it would be a secondary form of that letter; whereas No. 7, *t* itself, precedes *i* in instances where no *a* can intervene; as *e. g.* in the third person singular of the present *asti*, "he is," and the like; and again, Nos. 7 and 10 appear to be interchanged. As to the first point, I stated in my former paper, and still state, that No. 10 is the secondary form of *d*, not of *t*. I admit that No. 7 precedes *i*, both immediately and with *a* intervening, there being no secondary form of it before *i*; but I deny that *di*, as the Major writes it, that is, 28, 33, ever come together, except in the inflexion of a noun ending in *da*, in the enclitic pronoun *dē*, or in some other similar case, where a *guna* to the *i* is required by analogy. As to the alleged etymological connexion between No. 7 and No. 10, I cannot discover it. The only *apparent* instance of such a connection is in the imperative of certain verbs, where the 2, *s*, the 3, *s*, and 2, *pl*, are written with *t'iya*, *t'uwa*, and *tá*, according to the Major's orthography; *di*, *tu*, and *tá*, according to mine. These I compare with the Greek and Sanscrit forms. They are the terminations annexed to a root which terminates with a vowel. In Greek we have *ἴθι*, *ἴτω*, *ἴτε*. Bopp gives *s'rud'hi* as the Veda form of the Sanscrit, corresponding to *κλύθι*; the other persons end in *tu* and *ta*. Now, it is admitted that, in the old Persian, *da* corresponded to the Greek *θα* or *θη*, and to the Sanscrit *d'ha*; *dadámi* was the equivalent of *τίθημι* and *dad'hámi*; but it has not yet been admitted that *di* and *du* were the old Persian equivalents of *θι*, *θυ*, and *d'hi*, *d'hu*. This, however, is what I contend for, as a part of my theory of secondary letters; and it is in perfect accordance with this theory that I found above *dúrâ* as the equivalent of *θύρα*; and that I now find *di* to be the termination of the second person sin-

gular of the imperative, corresponding to ῥι and $d'hi$, while tu and $tú$ are, in the other persons, corresponding to $\tau\omega$, $\tau\epsilon$, tu , ta . Lest, however, any one should persist in thinking that the letters which I call secondary should have an aspiration, because θi and θv , $d'hi$ and $d'hu$, have, I observe, further that d , in the old Persian, in all its forms, primary and secondary, corresponds to the Greek δ as well as to θ ; to the Sanscrit d , as well as $d'h$. The old Persian $dadâmi$ corresponds equally to $\delta\acute{\iota}\delta\omega\mu\iota$ and to $\tau\acute{\iota}\theta\eta\mu\iota$; to the Sanscrit $dadâmi$ and $dad-hâmi$; and so do the secondary forms of d ; $dhuwitiyam$, as the Major writes it, $duwitiyam$, as I write it, corresponds to the Greek $\delta\acute{\epsilon}\upsilon\tau\epsilon\rho\omicron\nu$, the Sanscrit $dvitiyam$; while his $yafiya$, my $yadi$, is the Sanscrit $yadi$. With respect to the alleged interchanges of Nos. 7 and 10, I observe, that if they be not errors of the sculptor, which I believe them to be, they are interchanges of di and ti , not interchanges of a primary letter with its secondary one. The instances are two. In one (III. 14), the imperative singular terminates in ti instead of di . The same sentence in the plural had occurred not long before, and the sculptor was apparently repeating it. After he had written the t he perceived his mistake, but he could not well correct it: in another imperative, however, connected with this by the conjunction "and," he wrote di . The other instance is the name of a month, which occurs twice; in one place it is written with ti , and in the other with di . It is uncertain which was right, and a confusion between syllables so like in a long word should have no stress laid on it.

The Bisitun inscription does not appear to me to throw any new light on the value of No. 12.* As to No. 18, it seems at first sight in favour of its having the value th ; since, with a after it, it corresponds as a termination of pronominal adverbs to the Sanscrit tas or $d'has$ (the former the more frequent, but the latter, I believe, the original form), and the Greek ῥεν (for ῥες , as in the first person plural of verbs, $\mu\epsilon\nu$ for $\mu\epsilon\varsigma$). To this, however, it may be objected that,

* It may, indeed, be said, and with some appearance of reason, that the argument drawn from the Median transcription, *tatsharam*, is affected by the rectifications of the Median alphabet made in the present paper. I now read the word *v.ta.sha.ra.m*. Consequently, I cannot rely on the argument drawn from it, to prove that No. 12 was not j . This, however, is abundantly evident from other considerations; and the argument that it was zh , and not z , appears to me unaffected by the change.

as above shewn, *da* would be the termination corresponding to *d'has* and $\delta\epsilon\nu$; for the old Persians always dropped *s* and *u* after *a*. *Da*, however, would also correspond to the Greek $\delta\alpha$ in $\epsilon\nu\delta\alpha$, which is in the Vedas *d'ha*, in the later Sanscrit *ha*, in *iha*. Now, it was necessary to make a distinction between adverbs which differed in signification, as *there* and *thence*. If *awadâ* was to signify *there*, some other termination must be used to form a word signifying *thence*; and it appears to me that *za* is at least as likely a modification of *da* as *tha* is. It may also be considered as bearing on this question, and therefore I think it right to mention, that the genitive singular of the pronoun of the second person singular, *tûm*, begins with No. 18. It is what I should read *zuwâm*. This has certainly no etymological connexion with the nominative, but neither has *manâ* with *adam*, nor *amâkham* with *wayam*, the genitives and nominatives of other pronouns. There is no corresponding Sanscrit form, for I cannot consider *tava* to correspond, which is the genitive in both Sanscrit and Zend; and in the absence of such, it does not appear to me that any inference can be fairly drawn as to the value of the letter. I suspend my opinion till I see what Major Rawlinson has to say in support of the values which he has given, after Lassen, to these two letters; but I certainly incline strongly to think that those assigned in my former paper are the true ones.

No. 15 is not used in the Bisitun inscription. It has occurred to me, however, that it is rendered highly probable by the Babylonian deciphering that its value was *iya* or long *i*. It is only used after No. 8, *n*, in a word signifying "king." Now, the Babylonian word signifying "king" was certainly *ni*. If this word, or *niya*, with the usual termination, was adopted into the Persian language, it could not well be written with the ordinary letters, for they compose the word *nî* or *nê*, "not;" and the character actually used bears a very strong resemblance to that which represents *y*, and might therefore naturally be selected as suitable to represent the new word.

In respect to the second or Median kind of writing, I am satisfied that the general principles announced in my former paper are correct; I have to add to them, however, a new one, which I ascertained from the inscriptions of the third kind to prevail in *them*, and which I have since found to be also applicable to the Median inscriptions. It is this: if a character which expresses a syllable commencing with a consonant, be preceded by a character expressing the same

syllable (neglecting the distinction between *i* and *u*), or a syllable containing the same consonant followed by *a*, the first of the two characters loses its vowel, and becomes, in fact, a mere expletive, as I explained in my former paper that the simple consonant would be under the same circumstances.

This has led me to some important rectifications of values.

The three following characters, which I made to consist of a consonant preceded by a vowel, really represent the same consonant followed by a vowel, namely, 3, *na*; 27, *pu*; 63, *tu*.

The three following, which I made simple consonants, really contain a following vowel, viz. 30, *ta*; 32, *ta*; 42, *na*.

No. 28, which begins the name of Egypt, should be *wa*, not *k*. I make its value commence with *w*, because this is used for *m* in other instances; and I make it to end with *a*, because it is the second character in the name, answering to the Persian *Hômaw[étâ]*, as I supply the deficient letters. I read the Median name, which is 76, 28, 36, 32, 50, *O.wa.pi.ʔ.ta*. Where a vowel is suppressed, pursuant to the new principle above laid down, as in 32 in the present word, I substitute an apostrophe for it.

I have no longer any doubt that 50 is *ta*; 54, not valued before, is *si*.

In addition to the foregoing, I make the following changes in the printed alphabet:

17 is *sa*; 22, *u*; 29, *washa*; 33, *pu*; 34, *pi*; 36, *pi*; 38, *u*; 57, probably *wash*; 76, *ô*; 78, *sa*. There is no ground for giving 66 the value suggested for it.

Besides having a phonetic value, *na*, No. 3 is used as a non-phonetic initial before the name of Ormazd, as the corresponding Babylonian character is. This name is 3, 76, 13, 57, 51, which I now read **O.ra.wash.ta*. The word signifying God is written 3, 4, 27, or with 33 or 36 added, i. e. *n'.na.pu*, *n'.na.p'.pu*, or *n'.na.p'.pi*. The Babylonian word is *nabu*, and it might have been better to have always used *b* in place of *p* in the Median.

It is worthy of notice that, in the name *Owapita*, above quoted, the character which denotes *pi* or *bi*, in this last word, is used to express *wi*; a proof that in Median these sounds were sometimes confounded, as they always were in Babylonian.

To the third kind of Persepolitan writing the name of Babylonian may be

given with perfect confidence, from the identity in form of its characters, and those of the cursive writing on the clay cylinders, barrels, &c., found at Babylon. Since the date of my last paper I have made considerable progress in deciphering both this cursive character, and the lapidary characters used on the Babylonian bricks, and in the great inscription of the East India Company. Although much remains to be done, I have thought it right to take the earliest possible opportunity of communicating to the Academy the progress which I have already made.

I should begin with stating that, in this field of discovery, I have no predecessor who has published anything to the purpose, except the venerable Professor G. F. Grotefend, who, very early in the present century, made a commencement in the deciphering of all the three kinds of Persepolitan writing. Not having seen his "New Contributions to the elucidation of Persepolitan Wedge Writing," published in 1837, I cannot state precisely in what degree he has anticipated me; but he must be admitted to have discovered the nature of the Babylonian characters, as partly syllabic and partly expressive of letters, and the fact that certain lapidary characters corresponded to certain cursive ones. He correctly transcribed the entire name of Darius into lapidary characters, though he did not, as I conceive, assign perfectly correct values to more than two of the five characters which it contains. He was, I believe, ignorant of the two important facts that, in this mode of writing, as in the Median, a syllable commencing with a consonant may take that consonant before it at the pleasure of the writer, *s.sa* being, for instance, used in place of *sa*, *n.ni* of *ni*, and the like; and that several equivalent characters might be in use to represent the same letter or syllable. I should not suppose that the cursive characters to which he gave correct values amounted to ten, nor that he assigned values approximating to the true ones to more than ten others. For the reason, however, which I have already given, I cannot speak confidently on this subject. About a year ago, a M. Lowenstern published a small work on the Babylonian character in Paris. I have not seen it; but, from a letter which its author published in the Literary Gazette, containing an account of his system, it is evident to me that he is far behind Grotefend. Dr. Seyffarth's attempt is another complete failure.

The data to which I have had access are, 1st, the Achæmenian inscriptions

published by Westergaard, in the *Memoirs of the Royal Society of Antiquaries of the North* for 1844, and marked B, C, D, E, G, H, L, M, and NR, together with the inscription on the Venice vase of Artaxerxes. This work did not reach me till about a month ago; but I had previously seen other copies of all these inscriptions but three.* The other inscriptions, F, K, and O, have not yet reached me. 2ndly. The great inscription of the East India Company, containing 619 lines of lapidary characters brought from Babylon, the inscriptions on the Babylonian bricks, a comparative table of eighteen kinds of which is given by Grotefend at the end of his "New Contributions to the Elucidation of Babylonian Wedge Writing, 1840;" the beginnings of certain inscriptions in the cursive character which Grotefend places in comparison with the legends on the bricks in this plate; a complete barrel inscription published by Mr. Rich; and a fragment of an inscription on a clay cylinder, published by Sir R. K. Porter, which I discovered to contain a transcript of portions of the great inscription of the East India Company;—a most important discovery, as the equivalence of certain cursive and lapidary characters, which bore scarcely any resemblance to one another, was thus demonstrated, as well as the equivalence to each other of different lapidary characters, as, for example, 111 and 28, in the published list, which are constantly transcribed by one and the same cursive character. All these Babylonian documents are of the age of Nebuchadnezzar the Great, and contain his name and titles, which Grotefend thought to be forms of prayer. Other Babylonian documents in the cursive character, containing contracts executed in the reigns of Darius, Xerxes, and Artaxerxes, have been published by Grotefend in different numbers of the *Zeitschrift für die Kunde des Morgenlandes*. These I have not yet examined.

It will be observed, on inspection of the table, that many of the cursive characters are exactly, or almost exactly, of the same form as the corresponding lapidary ones; such are those numbered 1, 3, 4, 5, 7, 9, &c. Another class, though decidedly differing, have, nevertheless, such a resemblance that their

* I have to thank Mr. Norris, of the Royal Asiatic Society, for his kindness in transmitting to me a manuscript copy of the part of the inscription N. R., containing the names of the provinces, several weeks before I received this work from my bookseller. He at this time remarked to me the use of No. 35, as an initial sign before names of countries, but not its phonetic value. Its signification, as "a country or province," had been pointed out by Grotefend.

values cannot be mistaken ; such are 6, 8, 11, 13, &c. In 10, 36, 40, and some others, there is a resemblance traceable, though not very obvious. In other cases, where the difference seems very great, a comparison with other characters shews that a correspondence in form exists to such a degree as to prove that, if one was not copied from the other, both had a common origin. Compare, for instance, 2 and 46 ; 40 and 58 ; 55 and 60 ; 20, 43, 53, 66, in all of which the cursive character has one-half the wedges in a given direction that the corresponding lapidary character has. In a few cases, such as 30, 35, 39, 71, the equivalence of the characters would never have been suspected, if they had not been observed to be similarly used.

The first step in this deciphering was, of course, an analysis of the proper names occurring in the Persepolitan inscriptions, and a comparison of them with their equivalents in the first and second kinds of writing, and, where possible, in Hebrew and Greek. It will be observed that some of the Babylonian names correspond much more closely to the Greek forms than either the Persian or Median. See, in particular, the names of Cyrus and Darius. This deciphering of the proper names determined the values of many characters ; more were determined by comparing different modes of writing the same words in the inscriptions which commence with the same formula, and in phrases of common occurrence found elsewhere. I also observed some Median words transcribed in one of the inscriptions, and a few other words that, though altered, appeared to be of Persian or Median origin. When the equivalence of the two sets of characters, lapidary and cursive, was ascertained, more values were determined by comparing the proper names in the great inscription, in their various forms, with their representatives in other languages, and by comparing the different forms in which words of the great inscription which occur in formulas that are frequently met with, are written.

The following page contains seventy-six Persepolitan cursive characters, with the Babylonian lapidary ones which most nearly correspond to them. Before I enumerate the other Babylonian lapidary characters which have the same values, I will make some general remarks on the mode of reading the characters, followed by observations on a few which I have distinguished by the sign †.

THIRD PERSEPOLITAN CHARACTERS,

WITH THEIR VALUES, AND WITH THE CORRESPONDING LAPIDARY CHARACTERS.

1	‡ A.			20	N.			39	Bu.			58	S.		
2	‡ Ya.			*21	‡ Ana.			40	„			59	„		
3	„			22	Na.			41	‡ „			60	„		
4	I.			*23	‡ „			42	„			61	As.		
5	U.			24	‡ „			43	„			62	„		
6	„			25	„			44	„			63	„		
7	‡ „			26	Nu.			45	Bar.			64	Us.		
8	‡ „			27	„			46	Ak.			65	‡ Sa.		
9	Yu.			28	„			47	Ka.			66	„		
10	R, Er.			29	‡ „			48	Ku.			67	„		
11	„			30	‡ „			49	„			68	„		
12	‡ „			31	„			50	„			69	Su.		
13	Ra.			32	„			51	Ta.			70	„		
14	„			33	„			52	„			71	„		
15	„			34	Ba.			53	„			72	„		
16	„			*35	‡ „			54	‡ „			73	„		
17	Ru.			36	‡ „			55	Da.			74	„		
18	‡ „			37	Bu.			56	„			75	Sar.		
19	„			38	„			57	S.			76	‡ P.L.S.		

Thus marked (*) also used as non-phonetic initials. Thus marked (‡) see observations.

A character which represents a consonant followed by *a* generally loses its vowel, if it precedes a character in the same word which represents any syllable beginning with the same consonant; and a character which represents a consonant followed by *u* generally loses its vowel, if it precedes a character of the same value. In these cases I substitute an apostrophe for the vowel that is to be suppressed. If three characters which represent syllables commencing with the same consonant concur, two only are to be sounded; and those which are equivalent in value, if concurring, are to be reduced to one syllable. Thus, 35, 43, 41, *ba, bu, bu*, in the name of Babylon, are to be read *ba.b'bu*. It is possible, however, that this may have been regarded as a compound word, and that, on this account, the first syllable was pronounced distinct; for, in other instances, the first and second syllables seem to be reduced to one, and the third to be pronounced separately.

The vowels *i* and *u* are scarcely distinguished; and, in the application of the preceding rule, syllables commencing with the same consonant, and terminating with *i* and *u*, are regarded as equivalent. I have, therefore, classed them together, placing, however, those characters first which appear most decidedly to have contained *i*, and those last which always expressed *u*. For greater distinctness 4 is added to these ambiguous syllables when *i* is intended to be pronounced, and 6 when *u*. I am not sure whether 5 be not an ambiguous or intermediate vowel, or whether it be equivalent to 6.

The consonants R and L are not distinguished; nor are B, P, W, and M; nor K, G and KH; nor S and the other sibilants, except in one instance: see note on 65. CH appears to have been expressed by S, and J by K; but, perhaps, not in every instance.

1. Rather *Aleph* than A. In some cases it appears to have the value *i*; and it is remarkable that the Median character which corresponds in form, No. 72, was an I. This character is used in the Persepolitan inscriptions to express "son of."

2. This is interchanged with both the preceding and following. I should give it the value *a*, if I could depend on the manner in which the name of Artaxerxes is written on the Venice vase being correct. [I suspect, however, that 2 was used by mistake for 46; see the transcription.] In other cases, the charac-

ter clearly represents *ya*, and, when preceded by a syllable terminating in *a*, the compound, *aya*, seems to have expressed *i*.

7, 8. Both these are used, I believe, exclusively for the conjunction "and." The corresponding Median letter is *au* or *ô*; but I think it better to give these characters the value U, which, if not accurate, is a safe approximation.

12. [Used by abbreviation for the words 12, 66, *er.sa*, and 12, 75, 15, *er.sar.ra*, being transcriptions of the Median 23, 73; 23, 73, 23, 13; which as read by me, are identical in sound. They signify "great," "very great."]

18. Signifies "the earth," "land;" and it may be doubted whether it was not, in some cases, a non-phonetic initial. I believe that this word was simply *Lu*.

21. In the word 21, 48, elsewhere written 1, 22, 48, *a.na.ku*, "I," it is clearly phonetic. I presume the word *ana* signified "one."

23. Prefixed non-phonetically to the name Ormazd, and also used by abbreviation for the word 23, 22, 39, *n'.na.bu*, "God." The word signifying "heaven" is written 23, 41; I am uncertain whether it should be read *na.bu* or *nabu.bus*, "the dwelling of God," considering both characters to be used as abbreviations for words. This is, I think, the more probable; and the same may be said of the Median word signifying "heaven."

24. Sometimes used to represent the word "man," which I believe to have been *bana*. See below.

29, 30. The former of these is sometimes, and the latter, I believe, always, used to represent the word *ni*, signifying "king."

35. Signifies "a province," pronounced *ba*; prefixed to the names of countries, generally as a non-phonetic initial; but in the name of Babylon it was sounded.

36. Used to express the word "man," which I believe to have been *bana*. It is written in the Persepolitan inscriptions which I have consulted in four ways, 36 alone; 36, 24; 34, 24; and 24 alone.

41. Used in the Babylonian inscription to express "a house," or "dwelling," almost synonymous with 54. I read it *bus*, as it seems to be the same word that occurs, written 39, 60, in the inscription L. In the Persepolitan inscription, C, it seems to signify "the world."

54. I suspect it is used as a non-phonetic initial in some words where it occurs. It signifies "a house," and is written in full, 54, 62 or 63, *ta.as*.

65. The first of these characters represents *sa*, and the second *sha*, in the Persepolitan inscriptions. These were not distinguished in the lapidary character.

76. [This character expressed the plural termination, whatever that may have been ; and it may not have been always the same.] The plural was also represented by doubling the word, whether represented by a single character or by more ; by adding a termination ; or by two of these three ways combined. I must observe that the plural sometimes denoted dignity, and not real plurality. Thus, in the inscription C, Darius is twice called by Xerxes his "fathers," in the plural.

On the interpretation of these inscriptions I am not prepared to enter at present, though I have already made some progress in explaining them.

N. B.—The remainder of this paper, containing a list of lapidary characters, with transcriptions of Babylonian and Persepolitan words, is omitted, being superseded by those in the following paper. A few sentences which are pointed out in that paper as incorrect are enclosed within brackets.