

VI.—*An Attempt to ascertain the Number, Names, and Powers, of the Letters of the Hieroglyphic, or ancient Egyptian Alphabet; grounded on the Establishment of a new Principle in the Use of Phonetic Characters.* By the Rev. EDWARD HINCKS, D.D.

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INTRODUCTION.

I BELIEVE that very few persons can be found, that have studied the subject of Egyptian writing themselves, or that place a reasonable degree of confidence in those who have, who do not now admit that the Egyptians of all ages, from which any monuments remain to us, represented their ideas to the eye in three ways:—partly by characters, which, singly or in combination, immediately represented them; partly by characters which expressed the words by which they were represented to the ear; and partly by combinations of both sorts of characters. Thus, in the last line of the Rosetta stone, we have a *collection of writing materials* (fig. 1), expressing the word *γράμμασι* of the Greek text which corresponds to it, and which would probably be pronounced *Skhi*; we have a *square mat*, a *semicircle*, and a *twisted rope* (fig. 2), expressing in combination the name of a god, which, in the fourth line of the Greek text, is written $\Phi\theta\hat{\alpha}$, and in a Sahidic manuscript $\pi\tau\alpha\epsilon$, i. e. *Ptah*; and again, we have a *chair-back*, a sort of *flowering water-plant*, and a *pair of leaves*, with an object which Champollion supposed to be a *pen-knife* (fig. 3), representing the same word, *Skhi*, as fig. 1 does. The three first characters represent the three phonetic elements of this word; and the fourth indicates that it expresses some idea connected with writing. A character like the last was called by Champollion a Determinative Sign. Chevalier Bunsen calls it a Deutbild. We may give to these characters, and also to those which, like the *collection of writing materials*, represent ideas without the intervention of words, the common name of Ideoglyphs; the other characters in these figures being called Phonoglyphs.

I have said that these three modes of expressing ideas were in use in all ages of Egyptian sculpture. Thus, on the front of a tomb in the British Museum, which was constructed in the time of the fourth dynasty, we have the ideographs, a *pyramid* (fig. 4), representing "a pyramid;" a *sun's disk* (fig. 5), representing by metonymy "a day," and also representing *Ra*, or "the sun," as an element in a royal prænomen; and a great number of others. The name *Ptah* occurs here precisely in the same manner as it does on the Rosetta stone, composed entirely of phonoglyphs. And among many words containing characters of both sorts is a group consisting of a *waved line*, a *plan of a house*, a *semicircle*, and a *sycamore tree* (fig. 6). The last character is an ideograph, and is used as a determinative sign after all names of trees, as well as after this; the first two express the sounds of N and H, and may be read *Nûhe*, $\text{H}\sigma\text{R}\rho\epsilon$, the Sahidic name of the sycamore tree. The semicircle is sometimes, and is probably *here*, a sign of the feminine gender; but it also denotes the letter T, which was a feminine termination, and the word may, *perhaps*, have been sounded *Nûhet*.

In the first work of Champollion, his essay *De l'Écriture hiéراتique des anciens Égyptiens*, published in 1821, he recognized the existence of only the first of these three ways of representing words, supposing that all the Egyptian characters represented ideas. When he discovered the erroneousness of this opinion, he used all possible efforts to suppress the work in which he had stated it. That work, however, contained a valuable discovery. In it he announced the great principle that hieratic characters, as they have been called, were exact transcripts of hieroglyphics, having the same relation to them as the cursive characters which we use in writing on paper bear to the capitals of our lapidary inscriptions. To mark out this correspondence between the two kinds of writing, it may be well to substitute the name Hierographic for Hieratic; and we may, in like manner, give the names of Ideographs and Phonographs to the two classes of the written characters. By the discovery of this principle, the way was opened for using the papyri which contain hierographic texts, in conjunction with the proper hieroglyphics, as means of attaining the knowledge of the common language and manner of writing. It is to the joint study of hieroglyphic and hierographic texts that I owe the discoveries which I am now about to announce.

In the year after this publication, Champollion published his *Lettre à M.*

Dacier, in which he announced the phonetic powers of certain hieroglyphics, and applied them to the reading of Greek and Roman proper names. Had he been candid enough to admit that he was indebted to Dr. Young for the commencement of this discovery, and only to claim the merit of extending and improving the alphabet, he would probably have had his claims to the preceding and subsequent discoveries, which were certainly his own, more readily admitted by Englishmen than they have been. In 1819 Dr. Young had published his article "Egypt" in the Supplement to the *Encyclopædia Britannica*; and it cannot be doubted that the analysis of the names "Ptolemæus" and "Berenice," which it contained, reached Champollion in the interval between his publications in 1821 and 1822, and led him to alter his views.

In the *Précis du Système Hiéroglyphique*, of which the first edition appeared in 1824, the two first of the three modes of writing above mentioned are recognized. Champollion had now discovered that not only the names of several of the ancient Pharaohs, but several words of the ancient language, were expressed phonetically. He was still, however, ignorant of the third mode, which is the most frequent of all. The discovery of it, including the theory of determinative signs, was made in the interval between the publication of the second edition of the *Précis* in 1828, and his last illness in 1831,—probably during his stay in Egypt. It is much to be regretted that he was cut off before he could completely develop this his grand discovery; and it is to be regretted also, that the ill-judging anxiety of his friends to do justice to his memory, should have induced them to publish manuscripts of his, written previously to his having made it, and containing statements which he had ascertained to be erroneous. The "*Grammaire Egyptienne*" ought to have been given to the public as his *sole* bequest in the department of Egyptian philology. It was published from a manuscript written in 1831, immediately before his last illness. Shortly before his decease, having carefully collected the sheets, he delivered them to his brother, with the remark, "Be careful of this; I trust that it will be my visiting card to posterity."

Even the warmest admirers of Champollion must admit that he left his system in a very imperfect state. Few, probably, will deny that he held many errors to the close of his life, both in what respects the reading of the characters, and in what respects the interpretation of the texts. In the present paper I confine

myself to the first of these ; stating, however, my conviction that he was still more astray in the other than I shall now prove him to have been in this. The Egyptian phonoglyphs are susceptible of a double classification, in respect to their nature, and in respect to their powers. Of the first classification Champollion seems to have had very little idea. A few of the characters in his list are, indeed, marked B. E., indicating that they were only used in the times of the later Ptolemies and of the Emperors ; or E. S., implying that they only occurred in a sort of secret writing, used in certain inscriptions of the age of the nineteenth or twentieth dynasty. To three or four others there is added " Init.," apparently as an after-thought, for it is not explained in the text of his work ; and here and in his 82nd section, " on abridged phonetic names," we have the germ of Dr. Lepsius' discovery of the restricted use of certain phonoglyphs, and of their complementary letters. As to the second classification, according to their powers, Champollion arranged his phonetic characters in sixteen divisions, exclusive of one which contained the hieroglyphic representations of the five Greek letters, Δ, Ζ, Ξ, Φ, and Ψ, which had no single Egyptian characters properly equivalent to them, and which must, therefore, be expressed either by combinations of characters, or by such as properly expressed approximate sounds. The sixteen classes are vowels, fourteen consonants, and ligatures, that is, double consonants. The number of characters arranged in these classes is, according to Champollion's own enumeration, 247 ; but several of these are mere variations of other characters which appear in the lists ; about ten are combinations of characters which appear separately ; and many more are marked E. S. or B. E. The true number of distinct simple phonoglyphs in general use before the low epoch was, according to Champollion's view of the matter, 167 ; of which thirty-two were vowels, and three double letters. To a few of these more than one power is assigned, but this is rather to be considered as resulting from the unfinished state of the work than as intentional. In addition to the defects which exist in his classifications, Champollion committed many errors in respect to particular characters : he placed some in wrong classes with respect to their powers ; he marked some that were in use in early times as not being so ; and he omitted marking many that were certainly not in use till the low epoch, if, indeed, they were ever in use at all. On the other hand, he omitted many characters from his list, the phonetic powers of which are unquestionable. His alphabet was thus

in every point of view defective ; and, though highly creditable to him as a first attempt, is quite unworthy of the present state of hieroglyphical knowledge, and unfit to be even made the basis of a more perfect arrangement.

Of those who have endeavoured to rectify and complete the old Egyptian alphabet, left by Champollion in the state I have mentioned, I need only name Salvolini, Dr. Lepsius, and Chevalier Bunsen. The alphabets which have been published by others are all, so far as I am aware, inferior to that of Champollion. To Salvolini must be assigned the merit of adding some characters to the alphabet which Champollion had omitted, and which certainly ought to find places among the phonoglyphs. He added, however, many others improperly ; and in respect to classification he must be considered as having made a retrograde movement. His absurd notion that a phonoglyph might have two different values, independent of each other, and equally proper, has been made a handle of by those who have denied the truth of Champollion's discoveries, in order that they might turn the whole system into ridicule. If it were well founded, as Chevalier Bunsen justly remarks, it would put an end to all clear and certain investigation in this department. Except, however, in the case of a very few syllabic signs, it is a groundless fancy ; and neither Salvolini nor Dr. Seyffarth, who carried it to a still greater extent, have been able to procure for it the belief of any large number of Egyptian scholars.

The object of Champollion and Salvolini appeared to be to extend the list of phonoglyphs as much as they could. Dr. Lepsius was more anxious to classify those which had been already discovered. He divided them, in respect to their *nature*, into three classes : those which were used in early times to express simple sounds, without reference to their connexion ; those which were only used to express simple sounds in particular words or syllables ; and those which were first used to express simple sounds in the Ptolemaic or Roman period. To each of the peculiar letters of the second class there belonged one or more complementary letters, which, if not appearing after it, were to be supplied. Thus, the phonoglyph representing a *battlemented wall* (fig. 7), expresses the sound M, but only before the *waved line* N. It is thus virtually equivalent to the combination MN (fig. 8). The *waved line* is the *complement* of the *battlemented wall*, and is always to be understood after it, if it be not expressed. In like manner the *cru \bar{x} ansata* (fig. 9), which Dr. Lepsius supposed to be equivalent

to the *quail*, U, when followed, as in fig. 10, by the *waved line* and the *sieve*, has these two letters for its complement; and if they be not expressed after it, they must always be supplied. The word is *Unkh*, corresponding to the Coptic $\omega\text{r}\mathfrak{h}$, "life," or "to live." With respect to the other mode of classifying the phonoglyphs, according to their *powers*, I will only observe that Dr. Lepsius divided the vowels, which Champollion had thrown into one class, into three classes, having the powers of A, I, and U, while he reduced the number of classes of consonants from fourteen to twelve. The class of ligatures he rejected as useless, the characters contained in it being arranged in the division of peculiar letters. In these fifteen classes Dr. Lepsius arranged thirty-four characters, which he supposed to be the only ones which originally expressed simple sounds, irrespective of their connexion.

During the last year, Chevalier Bunsen has published what he considers to be an improvement on Dr. Lepsius' alphabet. It would be natural to suppose that it should be so, as he had the assistance of Dr. Lepsius himself in its construction, as well as of Professor Schwartz and Mr. Birch. I am, nevertheless, disposed to think that it is little, if at all, superior to Dr. Lepsius' original alphabet; the amendments made in some matters of detail being counterbalanced by deteriorations in others, and no improvement being made in the general principles on which it is based. The peculiar letters are divided by Chevalier Bunsen into two classes, which he calls Syllabic Signs and Mischbilds, or, as we may call them, Ideo-phonoglyphs; but the distinction, at least as he makes it, can scarcely be maintained. The *battlemented wall* (fig. 7) is, according to him, a syllabic sign, because it represents the syllable MeN in *any* word in which it occurs; whereas the *crux ansata* (fig. 9) is a *mischbild*, as it is only used in the *one* word and its derivatives, with which it is presumed that it has an ideographic relation. It is, however, quite uncertain what connexion existed between the *crux ansata* and *life*; and the most probable supposition seems to be that it was nothing more than that the Egyptian words representing this object and the idea of "life" were accidentally sounded alike. We *know* that this was the case with other characters that appear in the Chevalier's list of *mischbilds*. The *spindle with thread* (No. 46) is given by him as the *mischbild* for *Hôs*, "to sing." What possible connexion could there be between *a spindle* and *singing*, if we looked to the ideas alone? On looking into a Coptic dictionary, however, we

find that the one word (ϋωϋ) represented both ideas. Hence, the character, which ideographically represented the word in one sense, was used to represent it also in the other. The case is the same with the *lute* (No. 32), which represents the word *never*, "good," because the name of this musical instrument was, in the old Egyptian language, *nevel*, corresponding to the Hebrew נבל, and the Greek νάβλα, the letters L and R being confounded. It appears from this, that the distinction between the mischbilds and the syllabic signs is a very uncertain one. To draw a correct line between the two would require a more complete knowledge of the language than we now possess, or, indeed, I may say, than we are likely to possess; and if it could be drawn, it would be of little or no practical benefit. I will, accordingly, make no attempt to draw it, but will revert to the original arrangement of Dr. Lepsius, classing the phonoglyphs which are not used as letters under the letters which are first sounded in the words or syllables that they represent, and making no other distinction between them than what depends on the various manners in which they are connected with the letters that sometimes accompany them.

Chevalier Bunsen has also made a distinction between the alphabetic characters which were used in his so-called old kingdom, and those which were introduced subsequently. He supposes the former to have been in number twenty-five, which is stated by Plutarch to have been the number of letters in the old Egyptian alphabet; and he says that seven were added in the new kingdom. Thus he makes the total number of purely alphabetical characters less by two than Dr. Lepsius had made it, who, as I shall shew in this paper, reduced it considerably below the truth. The distinction here made is as little to be depended on as the foregoing one. Of the seven characters which he rejects from the alphabet of the old kingdom, four at least will be shewn, in the course of this essay, to have been in use as letters under the twelfth dynasty; while one is admitted by himself to have been never used as a letter till the Ptolemaic period. It is certainly a matter of interest to ascertain when each character was first used; and this I will endeavour to do, subject, of course, to correction from future observations; but I consider the notion that the monuments of the eighteenth dynasty exhibit an alphabet materially different from those of the latter part of the twelfth, to be unfounded in fact.

The causes of the want of success, which I attribute to Dr. Lepsius and his

followers, in applying the principle of the peculiar letters with their complements to the arrangement of the Egyptian phonoglyphs, I believe to be two. They were ignorant of another principle, in some measure antagonistic to this, which I have been fortunate enough to discover; and they adopted an unsound method of investigating the powers of the characters. The course which I mean to adopt in this essay is, in the first place, to establish the new principle to which I allude. I will then consider the various modes of investigating the powers of the characters which have been practised or suggested, with the objections which may appear to lie against any of them, and I will point out the course which appears to me most likely to attain the desired end. Lastly, I will apply the principle that I have discovered, by the method that appears to me the true one, to the practical ascertaining of the powers of the phonoglyphs. In doing this, I may err as to some matters of detail, and I candidly acknowledge that there are some of the characters of which I have not yet satisfactorily ascertained the powers; but if the principle that I announce be established—if the method of investigation which I pursue myself, and recommend to others, be a sound one—and if the powers of a large number of the phonoglyphs be completely ascertained, I trust that I shall not be considered to have laboured in vain.

PART I.—NEW PRINCIPLE IN READING PHONOGLYPHS.

The principle which I wish to establish is this. “The phonoglyphs which compose the proper Egyptian alphabet had *names*, which consisted of *themselves with the addition of certain expletive characters*; and these names might be, and often were, used in place of the simple phonoglyphs. If then, a phonoglyph belonging to the alphabet be followed by the expletive character which appertains to it, that expletive *may be*, and for the most part *should be, altogether neglected.*” This principle is, as I have already observed, antagonistic to the principle of Dr. Lepsius. His complementary characters, though omitted, must be sounded; my expletive characters, though expressed, are in general not to be sounded.

I propose to establish this principle in the following manner. I will first shew that it prevailed in respect to foreign words, when expressed in Egyptian characters, during a particular period, which I will call “the age of the papyri.”

I consider this period to include the reign of Seti (or, as some call him, Menephtah) the First; that of Rameses the Third (or, as some call him, the Fourth), the hero of Medinet Habû; and those which intervened between these two. This period is peculiarly proper to be chosen as that of which the records should be made the groundwork of our inquiries, as it comprehends the principal sculptures at Thebes, and also the Anastasi and Sallier papyri, of which *fac similes* have been published by the trustees of the British Museum, who have thus rendered the most important service to the cause of Egyptian philology. I will, in the second place, shew that the substitution of the names of letters for the letters themselves was not confined to foreign words, but that the monuments and papyri of this age contain numerous instances of the applications of this practice to purely Egyptian words. And, lastly, I will shew that the practice did not originate in this period, but that instances of it are to be found on monuments of the twelfth dynasty, and anterior to it.

The first place where I observed the expletive characters belonging to the Egyptian letters, so distinctly expressed as to enable me to ascertain their nature, was in some foreign words, occurring in the papyri just mentioned, of which transcriptions in Hebrew characters occur in the Old Testament. In the two first instances which I am going to mention, the writers of the papyri introduced Hebrew, or at least Semitic, words; in the others, they gave the names of places in Asia which are mentioned in the Jewish Scriptures. I will give the first of these words, by way of specimen, in both the hierographic characters used in the papyrus and the corresponding hieroglyphic ones. The others I will give in the last only. In every case I will refer to the plate and line, in the *fac simile* edition of the papyri, where the word occurs; and I will give the mode of pronouncing it according to the alphabet and system of Chevalier Bunsen, together with the Hebrew transcription. I will, of course, select words in which all the letters have had their true powers, or nearly so, assigned them by the Chevalier; but I wish it to be distinctly understood that I am now merely establishing the principle of expletive characters; and that, in adopting the received values of the letters in this place, I do not bind myself to do the same when I come to investigate the true power of each in the third part of this paper.

The first word (figs. 11, 12) occurs Pl. 97, l. 7; and in Pl. 60, l. 5 it occurs again, with this difference: in place of the last two characters, the *branch of a*

tree with three small bars under it, we have the *semicircle* with the *branch of a tree* under it (fig. 13); while the feminine possessive pronoun of the second person singular masculine is prefixed. The *branch of a tree* is a generic determinative sign, used after the names of objects that were usually made of wood. The *semicircle* is a determinative sign of the feminine gender, as the *three small bars* are of the plural number. The word, as it appears in Pl. 97, means "chariots," but as it appears in Pl. 60, "thy(m) chariot." It is important to attend to this, because it is thus evident that the U preceding the T is not, as I at first took it to be, the representative of the γ in the feminine plural. It occurs equally in the feminine singular, where neither the Hebrew nor any other Semitic language introduces a γ . The Hebrew transcription is מרכבת, pronounced, according to the Masorites, in the singular, *Mirkéveth*, and in the plural, *Markauvóth*; the hieroglyphics, according to the received mode of reading, are in both numbers *Ma-ru-ka-bu-ta*, in five syllables. Whether the Masoretic punctuation gives the correct pronunciation or no, we may be very sure, from all that we know of the Semitic languages, that if all the letters in the Egyptian transcript be sounded as above, they *cannot* give the true pronunciation of the word.

The next word (fig. 14) occurs Pl. 55, l. 1; its determinative signs imply that it signifies a collection of water. With all the letters sounded it would be *I-u-ma*, in three syllables. The corresponding Hebrew word ים, *Yam*, has but one; and the Coptic יωϣ, *Yom*, has no more. They both signify "sea," as the Egyptian word certainly does;—"a city in the sea; *Ta-ru* (Tyre) of the island is its name."

The next word (fig. 15) which occurs, Pl. 75, l. 7, with the same determinatives as the last, is the Egyptian name of the river which the Greeks called *Ἐυφράτης*, and the Hebrews פרת. According to the received mode of reading the Egyptian characters, it would be *Pu-ha-ru-ta*, in four syllables, instead of *Phrat* in one. Can any one suppose that this was the way in which the Egyptians pronounced it?

The next word (fig. 16) occurs Pl. 27, l. 6. It has the determinative signs which denote a foreign country, and is the name of one of the people who joined the Khuta (supposed by Champollion to be the Scythians) in their expedition against Egypt. It is obviously the same name as the Hebrew כרכמש, pointed

so as to be sounded *Kark'mish*. The Egyptian transcript, according to the received mode of reading, is *Ka-ru-ka-ma-sha*.

The next word (fig. 17), occurring Pl. 96, l. 3, is the name of a country, which is not itself mentioned in the Old Testament, but the inhabitants of which are called אַמֹרִי, *Emōri'*; which would give for the name of the country אַמֹר, *Emôr*, after the analogy of *Edōmi'*, *Edôm*. The vocalization is, however, uncertain. The versions make the first letter *A*; and it is more probable that the name was *Amôr* or *Amûr*. At any rate, we may be pretty sure that it had only two syllables; but if the vowels in the Egyptian transcript should be all sounded, it would have four, *A-ma-u-ru*.

The second character in this word is not a phonoglyph; it is the determinative sign which usually follows words connected with speech or with the mouth. When joined to the *leaf*, as it is here, it marks it to be the interjection used in addressing a person. According to my view of the matter, the *name* of the *leaf*, considered as a letter, was pronounced in the same manner as this interjection. I may make a similar remark on the name of the last letter in this word, which occurs so often. The *small bar* under the *mouth* indicates that it is not to be pronounced according to its value as a phonoglyph, but as an ideoglyph; not as *R*, but as the Egyptian name of "a mouth." If it had been of the feminine gender, a *semicircle* should have accompanied the *small bar*, as in the case of the *eye* (fig. 18), where it signifies "an eye," which was, in the old Egyptian language, *Iri*, of the feminine gender. *Ro*, as Champollion read it, or *Ru*, as Chevalier Bunsen reads it, was the old word signifying "a mouth," and was of the masculine gender. Whatever be its true pronunciation, the name of the letter was the same.

According to the principle above announced, the words that have been cited should be read with the omission of the expletive vowels. Even those which appear necessary to the pronunciation of the words are not to be retained as a matter of course. I prefer inserting the short natural vowel, which I will express by *e*, to be sounded as in *other*, when we have no authority from transcriptions to insert some other in preference to it; and, in the cases before us, I cannot consider that there is adequate authority for this except in the word *Phrat*. I write, then, the five words as follows, distinguishing the letters which I consider to be alone expressed by the hieroglyphics by capitals. MeRKeBeT, IeM,

PHRaT, KeRKeMeSH, and AMUR. I think no person will question that, by this rejection of expletives, the words are made to conform with their Hebrew representatives, which before they certainly did not do.

The use of the two letters, both expressed by their names, *Pu-ha*, to represent the single letter Φ , or F, may appear strange. I will only observe that there are many instances of this combination of these letters or their equivalents; the Egyptians having no class of letters which were sounded *at Thebes* as our F. I do not wish to lay any stress on inscriptions of the Greek or Roman age; but, by way of an illustration, and to shew that the use of expletive letters was not obsolete at the time of the Grecian conquest, I cannot refrain from copying the name of King Philip (fig. 20), as it occurs at Eshmûnîn, or Hermopolis Magna. It is represented by ten characters, the two first of which represent the initial Φ , and the fourth and seventh of which are expletives. Writing the last in small letters, and the rest in capitals, it is PHIU LIU PUS.

I will now give some instances in which the same foreign name is written hieroglyphically in different manners, which, according to the common mode of reading, should be pronounced very differently; but which, according to my mode, are reduced to the very same elements. I begin with the name of a country (fig. 19), which occurs, Pl. 27, l. 6, in conjunction with the name Ker-kemesh (fig. 16), among the allies of the Khuta. I agree with Mr. Birch in identifying this people with the Chalybes; and I suppose that their chief city was the *Χαλυβών* of the Greeks, mentioned by Strabo as supplying wine to the table of the King of Persia; which is called by Ezekiel חַלְבָּן , that is, Masoretically, *Khelvo'n*. The termination may, however, have been a euphonic addition, as in *Βαβυλών*, from Babel. The Syriac and Arabic names of the town are simply *Khalab*. According to the received mode of reading the Egyptian characters, they would compose the word *Khi-lu-bu*, giving the *mouth*, in this instance, the power of L, which it had in common with that of R.

In Pl. 97, l. 1, there is another name of a country (fig. 21), from which wine is said to be imported to Egypt. It occurs elsewhere very frequently, but, so far as I have observed, never in the same manuscript or inscription with fig. 19. I consider the two names to be equivalent. Mr. Birch, following Champollion, read the latter *Sharu*, and has latterly read it *Kharu*. He supposes it to be "Syria" generally. Rossellini read it *Sho-moui*, on the ground that the *lion*,

having a *small bar* under it, ought to be pronounced as the old Egyptian name of "a lion," which he supposed was *Moui*, as in Coptic. The true name of this animal was, however, *Labu* (fig. 22), according to the received reading, or rather *Lav*. The Coptic derivative is Λαβοι, *Lavoi*; the Hebrew, לביא, *Lavi*; the old Greek Λέων; the German, *Löwe*; the Bohemian *Lew*. All are to be referred to one root, L . V, or L . W, meaning probably "to seize."* The hieroglyphic word which Champollion and Rossellini identified with the Coptic Ⲙⲟⲩⲟⲩ, does not signify, in the old language, "a lion" specifically, but "a beast of prey" generally, including many other animals as well as the lion.† In this particular word, I suppose that the name of the *lion* was fully pronounced; the *quail*, in fig. 22, I believe to be expletive, so that the name in fig. 21 would be, according to my principle, KHeLAB, while that in fig. 19 would be KHeLeB. The consonants are the same in both; the *khi* of fig. 19, and the *kha* of fig. 21, being alike equivalent to the simple *kh*; while the *mouth* and the *leg*, with their respective expletives, are equivalent to the *lion*; though I grant that the latter *might have* signified no more than L or R. The use of expletives certainly causes some ambiguity, though not much more so than the absence of vowels. It is an inconvenient fact, the existence of which we may regret; but our regrets must not lead us to deny what is so fully established by evidence.

In figs. 24 and 25 are two different modes of writing the name of a goddess, whom we cannot fail to recognize as the Astart of the Phœnicians; the אשתרת of the Old Testament, which the Masorites have sometimes pointed as 'Ashtó-reth, and sometimes as 'Ashtauróth. The first form occurs Pl. 87, l. 4; the latter is given by Champollion (Gram. p. 122), who found it expressed hieroglyphically, he does not say where. The three determinative signs at the end of the name denote that it belonged to a goddess. The *semicircle* was attached to all feminine nouns, the *egg* to names of females, while the *basilisk* was peculiar to female deities. The last name is, according to the received reading, *Astart*, without expletives; in the former the names of the last two letters are substituted for them; and, if this were not corrected, the reading would be

* See Donaldson's *New Cratylus*, p. 550.

† This is evident from Pl. 144, l. 9. "On this day do not hunt any beasts fit for food, (*unkhu*) any wild beasts, (*matu*) nor any birds." The two words here used are evidently generic, including all the kinds of beasts that were hunted.

Astaruta. According to my principle it is *ASTART* as before. The name, as given by Greek authors, is with the termination *Ἀστάρτη*, and in composition *ασταρτ*.

In figs. 23, 26, and 27, we have three different ways of expressing the name of the country south of Egypt, which is called in Scripture כּוּשׁ, *Kush*. The first occurs Pl. 97, l. 5, and has no expletives. In the other forms, which, as well as this, are given by Champollion, and which are all used in ancient inscriptions, either the first or the second letter is attended by its expletive. The reading of the three forms would be, according to the received system, *KeSH*, *KASH*, and *KeSHI*; according to mine, the two last are equivalent to the first; and, supplying the vowel from the Hebrew, I would represent them all alike by *KuSH*.

I will give one more instance of a foreign word, which evidently contains expletive characters. It is the name of a Syrian district, a town and its surrounding lands, for the determinative sign by no means implies an extensive country (fig. 28). It occurs Pl. 56, l. 4; and, according to the received mode of reading, it would be *Ka-ru-ta-an-bu*. This is as unlike as we can well conceive to a Syrian name; but if we only drop the expletives, we at once get קרת-ענב, *Kereth-énev*, "the city of grapes," according to the Masoretic pointing. The first element of the name occurs in Carthago, Cirta, and many other words, in none of which is there any trace of a long O or U between the R and the T or TH. We may, then, be quite satisfied that *Karuta* could not have been intended to represent its pronunciation.

I have now produced a few instances of the use of expletives in foreign words, principally proper names, out of a great number which I have collected. In the third part of this paper I will cite others, with a view to determine the proper expletives and powers of the several characters which compose the alphabet. My present object has been simply to establish the *general principle*. With this view I have selected examples calculated to shew;—

First, that if all the letters in certain words, as they are found in the papyri, and in some of the historical sculptures, were sounded, they would be irreconcilable with Hebrew transcriptions of them that we possess, and, in some instances, with ancient Greek ones. See figs. 12, 14, 15, 16, 17, 24, 26, 27.

Secondly, that, on the same supposition, they would be irreconcilable with

the known characteristics of both the Indo-Germanic and the Semitic languages, the only ones which we can suppose to have prevailed in the countries to which the names belonged. See figs. 15, 16, 28.

Thirdly, that certain foreign names are at times found written in a manner exactly conformable to their Hebrew transcriptions, and with the genius of the language to which they belong; and, at other times, with superfluous letters, which render them irreconcilable to it. Cf. fig. 24 with 25; figs. 26 and 27 with 23.

Fourthly, that if a consonant, in a foreign word, be substituted for one of like power, it will sometimes happen that the following vowel is changed into one of a different power; which would alter the pronunciation of the word unless the vowels were merely expletive. Cf. figs. 19, 21.

Fifthly, that the apparently superfluous letters in words are not inserted arbitrarily, but according to a fixed law, each character having one expletive, which, and no other, is found attached to it. Thus, the *basin*, K, the *garden*, SH, and the *flowering water-plant*, KH, always take the *eagle* for an expletive; the *leg*, B, the *square mat*, P, and the *pair of leaves*, I, always take the *quail* or *lituus*; the *quail* or *lituus*, U, the *sieve*, KH, and the *reservoir of water*, SH, always take the *two small lines*; the *owl*, M, takes the *arm*; the *purse*, T, takes the *leaf*, and so in other instances. If a character which is sometimes expletive were to follow a letter of which it is not the proper expletive, as the *leaf*, in fig. 25, we are by no means at liberty to reject it. It is on the fact that, when expletives are used, the same expletive is always attached to each letter, that the proof of this new law mainly rests. The examples already given shew the regularity with which some expletives follow some letters. The *mouth*, with its *small bar*, occurs in seven words; the *purse*, with its *leaf*, and the *owl*, with its *arm*, each in four; and the *leg*, with its *quail*, in three. The only exceptions to this principle, that each letter has one, and but one, expletive, attached to it, are these two.

1. The *quail* and the *lituus* (fig. 29) were, in the age of the papyri, used indiscriminately as forms of the same character, the same hieroglyphic sign (*a*) being used for both of them. If, therefore, any letter, as the *leg*, took the one of these for its expletive, it might take the other also.

2. Some letters have for their expletives ideographic signs which imply letters;

in place of these they sometimes take the letters implied. Thus, the *waved line*, N, has for its expletive *three small bars*, the usual sign of the plural number. This implies that the *waved line* should be read three times, by which the hieroglyphic sign of *water*, as in fig. 14, is formed. The name of this latter is, then, the name of "water." But instead of expressing the name in this circuitous manner, the *eagle* is sometimes added to the *waved line* as its expletive, thus constituting the word *Na*, which was the old Egyptian name of "water." Thus, the *waved line* is used with two expletives—the *eagle*, which expresses the vowel A, and the *three small bars*, which imply the same vowel. With these two exceptions, which are rather apparent than real ones, the uniformity of the expletive letters is an essential part of the principle which I seek to establish.

It will, I should hope, be now admitted, that, in writing foreign words, the Egyptians of the age of the papyri often *spelled* them, as we may express it. Instead of writing the letters which composed them, they wrote the names of those letters, just as if, in place of writing the name Rome, we were to write *Ar-o-em-e*. I come now to shew that, in writing words of their own language, they occasionally adopted the same expedient, whatever its object may have been.

It might at first be thought that the simplest mode of proving this would be to bring forward a number of instances in which the same word was written with and without expletive vowels; but a little consideration will shew that for our present purpose this will not be enough. It is the course which I mean to take, when, having proved that expletive letters were inserted in words during the age of the papyri, I proceed to shew that the same practice prevailed under the twelfth dynasty, and previous thereto. If, however, I were to rest my case on this simple fact, in the present instance, I should be met with the reply, that these vowels were the proper vowels of the words; and that, in place of regarding them as expletive when used, we should supply them when not used. If I should object to this reply, that there were vowels at the end of words which, if we may at all depend on their Coptic representatives, must have terminated with consonants, it would be rejoined, that these vowels, though written at the end of words, should be read in the middle of them, or even at the beginning, according to a supposed law of "transposition of vowels," of which Champollion gave two instances, and which his followers have since applied to many other words. In order to meet objections of this sort, it will be necessary to bring forward

instances in which the expletive character is *not a vowel*, or in which different vowels are attached as expletives to the same word, written with different, but homophonous letters; or in which the expletive vowel cannot be regarded as forming a part of the word, consistently with its known pronunciation. I will select a few instances of each of these three classes.

And, first, we have already seen that the *leaf*, which, according to the received alphabet, is an A, has for its expletive an ideographic character. This is frequently found to follow it in purely Egyptian words. I will only mention one (fig. 30), which occurs repeatedly in the papyri; among other places, Pl. 94, l. 4. This word means "stalls," such as cattle were placed in; and there can be no doubt that it is a pure Egyptian word. It has for its Coptic representative $\text{O}\rho\text{I}$, *Ohi, caula*, and as a verb, *stare*. The corresponding verb, with which it is connected as the Latin *stabulum*, is found in the old language. On the sarcophagus of Nectanebes (miscalled Amyrtæus), in the British Museum, (Sharpe, E. I. 29), it is written as in fig. 31, both the *sitting figure* and the *eagle* being omitted. The latter is the known expletive of the *plan of a house*, as in fig. 15. In this instance, it might, perhaps, be contended that the character following the *leaf* was intended to give it the power of O. Champollion attributed this use to it in foreign proper names; but when I come to consider the value of this character in the third part of the paper, I will shew that he was completely mistaken on that point; indeed it is evident that in the name already cited (fig. 17), the *leaf* with the *sitting figure* represents A or E, and not O. To remove this objection, however, I will give another instance, in which nothing of this sort can be pretended, inasmuch as the expletive character is a consonant. The *chair-back*, or whatever it is which represents S, has for its expletive the *semicircle*, its name as a letter being *Set*. Now, this combination is repeatedly used for the simple letter S, in purely Egyptian words. By itself it is used as the pronoun of the third person singular feminine; which was properly S alone, as on the tomb in the British Museum of the fourth dynasty, the great Karnac obelisk of the eighteenth, and in innumerable other instances. I will, however, shew that there are instances, too numerous to be attributable to mistake, of the expletive *semicircle* being added to this pronoun. To prevent the possibility of misapprehension, I first observe that I am fully aware of the fact which Champollion mentions, that *Set* is used, both with and without the *three*

small bars, for the pronoun of the third person feminine *plural* ; but I will give undoubted instances of its being referred to a *singular* antecedent. In Pl. 108, in the first three lines, it is so used repeatedly ; in Pl. 159, l. 10, it is used with reference to Neith ; and in Pl. 146, l. 6, in reference to another goddess. Again, in Pl. 79, l. 7, it is used with reference to a noun, which is preceded by the feminine article singular, and has no mark of plurality. The *semicircle* is also added to the *chair-back*, when it forms a part of words. I will give but one instance, though I have noticed many. In Pl. 82, l. 4, the name of a plant or fruit is written as in fig. 32, which, according to the received mode of reading, would be *Aasti* ; elsewhere the *semicircle* is omitted. This is, probably, “the tamarisk,” of which the Coptic name is *ocī, osī*.

Of the second class of examples which I proposed to adduce, the following may suffice. The participle passive of the verb *Meh*, “to fill,” is written in Pl. 57, l. 3, as in fig. 33 ; and in Pl. 58, l. 2, as in fig. 34 ; two equivalent forms of the letter T being used, and to each is attached its proper expletive ; the *semicircle* has the *lituus*, which is U, and the *purse* has the *leaf*, which is A. Are we to read this word *Meh-tu* or *Meh-ta* ? Or shall we affirm that the Egyptians used these two terminations indifferently ? According to the principle for which I am contending, there is no difficulty. Neither of the vowels is to be sounded. The word is MeHuT ; the vowel being supplied in the last syllable from the form UT (fig. 35), which is used on the Rosetta stone, and the Coptic *ⲟⲩⲧ*.

I will give two more examples, in which, though the expletives are vowels, it appears to me impossible that any one can contend for their being properly parts of the two words. The word for “evening” occurs, Pl. 44, l. 4, written with four letters, RUHA (fig. 36), and determinative signs. The corresponding Coptic word is *ⲡⲟⲩⲛⲓ, Rūhi*. The first vowel in this word is not, and cannot be expletive, for the *lituus* is not the proper attendant on the *mouth* ; the second I affirm to be expletive, partly because the final vowel is not A in Coptic, and partly because the word is sometimes written with only three letters, as in fig. 37, taken from the sarcophagus of the Queen of Amasis (Sharpe, 118, 5). If the principle were admitted, and we were only discussing matters of detail, this would be quite sufficient to shew that the *eagle*, at the end of this word, should be considered as an expletive ; but I cannot rely on such arguments for my present purpose. I quote this word, not as an instance of one expletive, but as

an instance of two letters being written without expletives, to be compared with another form of the word (fig. 39) occurring Pl. 113, l. 7, where all the letters have expletives. If this last form be read according to the received manner, it will be *Ru-u-i-ha*, with four syllables in place of two. Can any one imagine that this was the true pronunciation, and that the forms (figs. 36 and 37) were abridgments of the word, produced by the omission of its proper vowels, which ought to be supplied?

The other instance is the word for "moon." It occurs at Karnac as in fig. 38 (Champ. Gr. p. 198), with three letters, *Aah*, and, as a determinative sign, the *lunar crescent*. The Sahidic equivalent of this word is $\text{oo}\varrho$, *ooh*; and the pronunciation is represented in Greek by the first syllable of the proper name Ἄμωσις , which was probably sounded as *a* in *call*. The Greeks, having no mode of representing the breathings in the middle of words, may have reduced two syllables to one; but if the word, as it appears in fig. 38, was written defectively—if it properly contained *another* long vowel, how would such a contraction have been possible? Yet the word is written in the papyrus, Pl. 8, l. 11, as in fig. 40, with a *quail* at the end. If the letters be all sounded in the order in which they occur, this would be *A-a-hu*; if we admit that transposition of the final vowel, which I suppose I must consider as the received mode of reading hieroglyphics, it would be *A-a-uh* or *A-u-ah*. All these forms are decidedly inconsistent with both the Sahidic word, and the Greek representative of the old Egyptian one.

Without multiplying examples, I think I may now consider it as proved, that, in the age of the papyri, the Egyptians used expletive characters after the letters of native words, as well as of foreign ones. I proceed to shew that the practice was not peculiar to this age, but prevailed under the twelfth dynasty, and even before it. My argument is this. I bring forward instances in which the same word is written with and without letters which were used in the age of the papyri, as the proper expletives of the letters which precede them, and which, according to the principle already established, should be considered as expletives in texts of that age. I then infer, by a fair analogy, that if the longer forms of these words were to be reduced to the shorter forms in the age of the papyri, they should be so also in other ages, where the same diversity of form existed.

The first instances which I adduce are from two steles in the British Museum,

which contain a considerable portion of matter common to them. I will call one of them, which is dated in the thirteenth year of Amenemhe II., A, and the other, which is dated in the sixth year of Osortasen II., B. According to the chronology of the monuments, the former of these is twenty-five years older than the latter; but according to the strange system which Chevalier Bunsen has proposed, with a view to reconcile Eratosthenes and Manetho, the latter is four years older than the former.

On collating these steles, I find in l. 10 of A the reading given in fig. 41, while in l. 8 of B is that given in fig. 42. The *eagle* appears as the expletive of the *ground plan of a house*, in figs. 15, 30, and 39. In l. 11 of A, I find fig. 43, and in l. 9 of B fig. 44. It will be proved in Part III. that the *quail* is the proper expletive of the *eagle*. The determinative sign added to this word in B could be no compensation for the omitted letter, supposing that it were anything more than an expletive. It implies that the word signifies a locality. It means "a gap," or "mountain pass." With a different determinative sign, the *three bars* denoting the plural, and an expletive after the first letter, as in fig. 45, it occurs Pl. 97, l. 6, signifying "planks." The root signifies *findo*, as the Sahidic $\pi\omega\sigma\epsilon$, on the authority of which I supply the vowel, reading PuKA. This Sahidic word also signifies "a plank." In l. 13 of A we have fig. 46, as the past participle of the verb UB (as commonly read), "to purify;" while in l. 10 of B we have fig. 47. In the last form the two determinative signs are omitted, and the *leg*, the complement of the peculiar letter, the *vase emitting water*, is substituted for them. This is in accordance with the received principles; but what I wish to draw attention to is the omission of the final *leaf* in fig. 47, or rather its insertion in fig. 46. This is exactly parallel to what we have already seen in fig. 34. The participle is UBU, ending with the consonant; and the *leaf* is here, as there, an expletive.

In the 9th line of A we have the word copied in fig. 48. This passage occurs on a stele of Mr. Harris's, dated in the seventeenth year of Osortasen I. (Sharpe, 86, l. 6), and the word is written without the *eagle*, as in fig. 49. The *eagle* is constantly used as the expletive of the preceding character, whatever it may be. In the 15th line of A, the name of certain panegyries is written as in fig. 50. On another stele of Mr. Harris's, dated in the sixth year of Amenemhe II. (Sharpe, 104, l. 3), the *eagle* is omitted, as in fig. 51; the determinative sign

being also omitted. Of the first letter of this word, also, the *eagle* is constantly used as the expletive.

There is a large slab in the British Museum which is admitted, I believe, by all Egyptian archæologists, to be anterior to the twelfth dynasty. It is copied, Sharpe, 36–38. In pl. 36, col. 12, the Egyptian word signifying “heart” or “middle” occurs, as in fig. 52. It consists of the two letters MT, and a determinative sign. Probably this word was connected with the Latin *Med-ius*, and also with *Mens*; for the Egyptian T, as well as the Latin NS, was a formative of the participle. In col. 22 of the same plate, the passage where it occurs is repeated; and here the word occurs as in fig. 53, an *eagle* being introduced, the known expletive of the character here used for M, the *sickle*. In the small horizontal line at the top of the stone, Pl. 36, l. 2, the same word occurs (fig. 54), the form of the last letter being, however, changed, as well as the determinative sign. It is here used as the name of the stone of which the slab was formed. Champollion, in the 100th page of his Grammar, gives this name as in fig. 55, without the expletive letter, but with the determinative sign of the *heart*, as well as the generic determinative, a *block of stone*. Champollion represented this word in Coptic characters ⲙⲧⲏⲧ, supposing that the *heart* should be read by its Coptic name, *Hit*. This is one of the many mistakes into which he was led by his dependance on that language. The whole word is ⲙⲧ, *Met*; and as this signified, in the old Egyptian language, both “a heart” and “rose-granite,” or some other kind of stone, the determinative sign of the word in the former signification, which was the more common of the two, was used along with that which properly belonged to it in the latter signification. Instances of this are very frequent, and they require to be carefully watched.

I will give one more instance of the use of an expletive in the time of the twelfth dynasty. In a stele in the British Museum of the reign of Amenemhe III., we have a female name, which was common in those times, *At* or *Et*, “bread,” connected, probably, with *ed-o*, &c., written as in fig. 56, the determinative sign of a *loaf* and also that of a *woman* being added (Sharpe, 6, l. 6). In the stele of Mr. Harris’s, last cited (Sharpe, 104, l. 6), the name occurs as in fig. 57. I say the name, for, though not applied to the same female, it has all the appearance of being identical with it. Here we have two additional characters introduced, a second determinative of “bread,” namely, a *row of cakes*,

which is generally found accompanying the other,* and the ideographic expletive of the *leaf*, already met with in figs. 17 and 30.

These examples will, I trust, be sufficient to convince any one who will candidly examine the subject, that the principle of expletive letters, already shewn to have been recognized among the Egyptian scribes in the age of the papyri, was also recognized under the twelfth dynasty, and even before it.

It will be proper that, before I leave this branch of my subject, I should say something of the origin of this strange practice, and the probable reason of its being continued. I must first, however, draw attention to a fact connected with these expletive letters, which is calculated to throw much light on the matter. My object having been hitherto to establish the existence of letters in a word which were not intended to be sounded, I have selected words in which there was reason to suppose that the letters in question were not to be sounded. Other words might, however, be adduced, in which a letter, sometimes inserted and sometimes omitted, should be always sounded. For example, the adverb signifying "twice" is generally written as in fig. 58, TI; but in one of the papyri (Pl. 27, l. 11) it is written at greater length TUI. This form occurs in the word signifying "a griffin," which is usually written AKHeKH, as in fig. 59, but appears here as in fig. 60, the adverb "twice" being substituted for the second *siere*. The monstrous bird, omitted in the figures, which is used as a determinative sign of both words, and the similarity of the two contexts, leave no doubt as to their identity. No person who compares this adverb with the equivalent Gothic, Sanskrit, and old Latin forms, can doubt that the U is properly a part of the word, and that, when written as in fig. 58, it should be pronounced *Twi*. Here, then, the *t*, in the form of a *semicircle*, is to be expanded to *tu*, while in other instances, as in fig. 33, the *tu* is to be reduced to *t*.

The following is, then, a correct statement of the law, as deduced from observation, by which the use of these characters was regulated.

Almost every letter in the Egyptian alphabet has a subsidiary letter, or ideographic character, implying a letter or letters, which, when placed after it, completes its name. When this subsidiary character follows the principal letter, it is in general to be passed over as superfluous; but, in a few instances, it should be

* In my paper on the Stele, I improperly interpreted this determinative sign, "of all sorts."

sounded when expressed, and even supplied when not expressed. Thus, the *pair of leaves* has for its subsidiary letter *the quail*; its name is *Yú*, its general power I, pronounced as in Germany and Italy. When the *quail* follows it, it is for the most part to be regarded as absent, as in figs. 14 and 20. The former word was probably pronounced *yöm* or *yaum*, not *yúm*. In the case, however, of the name of "the kingdom of Judah," from the list of countries conquered by Shishonk, at Karnac (fig. 61), we know that the *quail* ought to be sounded as U, YUTaHMeLeK; and in the name of Ptolemy, as usually written (fig. 62), we must supply it, reading the *pair of leaves* I-U, PTULMIUS.

It ought to create no surprise that the principle of expletives should be retained in the Ptolemaic period; even under the Romans we have the clearest evidence of their continued use. In the Gnostic manuscript at Leyden, which contains words in the hierographic and Enchorial characters mixed together, with Greek transcriptions of several of them between the lines, the hierographic words are, for the most part, written with expletives. I will give one example. In col. 16, l. 25, we meet with the hierographic word and transcription in fig. 63. The six hierographic letters correspond to the six hieroglyphics in fig. 65. The concluding hieroglyphic character marks the termination of the word. These six are, according to the received alphabet, *Ta-ha-nu*; but the word is *Θαν*, *Than*. Here then, as in fig. 15, we have two syllables, as written, representing an aspirated consonant, which did not exist in the Egyptian language; and we have a vowel at the end, written but not sounded. We may remark, however, that though the principle was unchanged, an alteration had taken place in the names of the letters. The *waved line* has here the *lituus*; in the age of the papyri it had the *eagle*; and, *vice versá*, the *semicircle* had in old times the *quail* or *lituus*, but has here the *eagle*.

There is no question that this mode of writing leaves a great uncertainty as to the proper mode of reading what is written; not more so, however, than exists in the Hebrew and other languages where the vowels are omitted. It is, as I have already observed, an inconvenient fact that the Egyptian scribes adopted this system; but it is a *fact* fully established by evidence, and we must endeavour to apply it properly to the reading and interpretation of hieroglyphics; in the latter, as well as in the former of which, the knowledge of it must necessarily produce material changes.

I will now briefly state my views as to the origin of this practice, and the reason why it continued to prevail.

As to the first point, I conceive that every phonoglyph originally in use represented a syllable, under which name I would here include a combination of two syllables, as well as a single vowel.

That at a period more remote than the date of the oldest monument in existence, a selection was made of certain characters, which should henceforth represent the initial sounds in the syllables that they represented.

That in process of time, but still before the date of the earliest monuments in existence, the practice was introduced of *completing* the characters which remained syllabic, by the addition of the characters that denoted letters; the object of this completion being to assist the memory, which could not easily retain, without some assistance of this sort, the powers of so many phonoglyphs.

That various means of completing the syllables were used; custom being guided by the frequency with which the phonoglyph to be completed occurred, and by the convenience of arranging the characters in groups. Some were completed without using the syllabic sign as a letter; and, in that case, first, all the characters might precede it, as in MeT, figs. 52, 55; or, secondly, all might follow it, as in MA, "truth," or "a cubit," fig. 64; or, thirdly, some might precede and some follow it, as in AMaKH, "to bless or favour," fig. 66. Other words were completed by using the syllabic sign, fourthly, as the first letter, as in MeN, fig. 8; or, fifthly, as the last letter, as in ToM, fig. 67. In all these instances, except the last, the syllabic sign is sometimes used alone, without any completion. Sometimes a syllabic sign is completed in more ways than one, as fig. 68, which represents the syllable *Hos*, is sometimes completed in the fourth way, as in fig. 69, and sometimes in the third, as in fig. 70. It was a decided error of Champollion to suppose that the *spindle*, in this last word, represented the vowel; it represents the whole syllable. *Tom*, again, fig. 67, is sometimes completed in the third manner, as in fig. 71. A peculiar kind of *vulture* represents the syllable NeH. It admits of being completed either in the fourth way, as in fig. 72, by placing an H after it, which is the most convenient, and therefore the commonest way; or in the fifth way, by placing an N before it, as in fig. 73, which represents the name TiMNaH, a town in Palestine, תַּמְנָה, Pap. pl. 56, l. 3; or in the third way, as in fig. 74, where it is inserted between the N, which concludes one word,

and the H, which commences the next; probably, indeed, as an intimation that the words were closely connected in sense, and might be considered as one compound. They signify "a long continuance of time." The *solar disk*, inserted between the two *twisted ropes*, is an ideograph or determinative sign, placed there, instead of at the end of the word, with a view to form a group more agreeable to the eye. I read the whole TeNH_aH, supplying the last vowel from the Sahidic 𐩨𐩣𐩨. Again, in fig. 75, we have a syllabic sign completed in the first manner, by prefixing all the letters SaKHT; and in fig. 76 we have it completed in the fourth manner, it being now used in place of the initial letter S. This character represents a *double net*, and the word before us signifies "to catch with a net;" it is probably the Sahidic 𐩨𐩣𐩨𐩩.

Besides the five methods of completing syllabic signs which have been already mentioned, and which are all used with classes of phonoglyphs, there are some remarkable methods occasionally used, which I deem it right to mention in this place. The *palm-shoot* is a syllabic sign for *Tel* or *Ter*; it is sometimes completed in the first manner, by prefixing the *semicircle*, T, and the *mouth*, R; and frequently a *leaf* is added, as in fig. 77. This *leaf* here replaces the *vertical bar*, as the expletive of the *mouth*. This combination is used not only by itself, to express the word TeR, "a season," but as the last syllable of a great variety of words, such as NeTeR, "a god," HaTeR, "a horse," &c. But, what is more remarkable, the *semicircle* is sometimes omitted, the preceding letter being placed over the *mouth*, in the place which the *semicircle* here occupies. Such is the case in the remarkable word, fig. 78, which is of frequent occurrence. The first character is ideographic, and signifies "the earth," or "land;" the next is a form of M used before T and R; the *palm-sprout* requires that a T should be supplied.* The final character is the determinative for Egypt and its parts, and it is doubled to denote the dual number. This was probably formed by the addition of I to the singular. The whole group is then to be read TO

* The *palm sprout* is not essential to this word, though it removes ambiguity. The names of the goddesses representing Upper and Lower Egypt are formed of the group in fig. 84, followed by the *reed* and the *papyrus plant* respectively—the two plants which symbolized the two Egypts. In this group there is no transposition. The *semicircle* is the sign of the feminine gender, and the initial character must be read *Mut*, forming the name MuTeR. This character, a sort of *hoe*, when placed horizontal, as it is here, expresses indifferently *Mut* or *Mur*, alone, or

MuTeRI, "the land of the two Egypts."* Another remarkable completion is that of the word signifying "incense," Sahidic cortre , the final p being dropped, as in most cases where it occurred in the old language. The word is very variously written, and its different forms have been taken for two or three different words; but in all cases the letters SoNTeR are expressed, or *implied by syllabic signs*. In the papyri it is written as in fig. 79. There are here three syllabic signs, the *palm-sprout*, following the syllable *Ter*, as already explained; the *axe*, *Netér*, and the character following it, which, alone or followed by the *waved line*, represents *Son*. The *axe* which, when it stands by itself, signifies "God," is here used as a syllabic sign, and must be considered as implying whatever letters of the word NeTeR are not otherwise expressed. In fig. 79 all are so expressed, the N being implied by the second character; but this is not always the case. In figs. 80 and 81 will be found some of the various ways in which it is written. In the former neither T nor R is found, except as implied in the *axe*, and in the latter neither N nor R. The *three grains*, or the *grain with three vertical bars*, which are equivalent, are the determinative sign. It is possible that the *axe* in this word, besides having a phonetic value, as just explained, may be *suggestive* of the use of incense in the service of the gods; but though such a suggestive use of phonoglyphs certainly prevailed in the Grecian age, I am by no means clear that it did in the early period to which this use of this character can be traced.

I conceive, further, that the characters thus used as letters for the completion of syllabic phonoglyphs were themselves occasionally used as syllables, and that they were, as such, completed in the fourth way. This was necessary, in order to express the names of these letters. The letters in all languages have names, and it is a matter of necessity that they should have them; for otherwise it would be impossible to describe orally the spelling of words, to give instruction to writers, or to correct errors into which they may fall. Now, as the sound expressed by

as part of a word. When elevated at the angle, it is exclusively used in the word MeR, "to love," and its derivatives. This distinction is observed in all correct texts, and ought not to be overlooked.

* Few persons will doubt that we have here the מצרים of the Hebrews, masoretically *Mitsráyim*. On this authority we might supply i as the first vowel; but I would rather depend on the transcription in the first kind of Cuneatic writing, which is *Mudráya* at Bisitûn, and *Mudráya* in the plural—they had no dual—at Persepolis.

the letter could only be pronounced by itself, when the letter was a vowel, it was necessary to add something to it, in order to make it a pronounceable name ; and nothing was more natural than that the syllable which the character originally expressed should be adopted as the name of that character, when used for a letter. Such syllables might be completed either by the addition of the vertical line, which, as already explained, denoted that the name of the object was to be expressed, or by the addition of the letter which represented the final sound. The names of the letters, however, were not *all* chosen in this manner. In the case of some of them, especially the vowels, we may be pretty sure that the name of the letter was *not* the original syllabic power of the phonoglyph. Indeed, some of the characters used as letters probably *never* represented syllables, having been first used as phonoglyphs at the time of, or subsequent to, the invention of an alphabet. But even where the character had originally a syllabic power, it did not necessarily follow that it was that original syllable which was used as its name. The *small water vessel*, for example, fig. 82, originally denoted the syllable *Na* ; and when followed by an upright line, it continued to be so sounded, as in the plural possessive article, and the noun signifying "a place;" but the *name* of this character was *Nu*, it being completed by the *quail* or *lituus*, as in fig. 83 ; or, in lieu thereof, being written three times, as in fig. 85. These *three water vessels* are to be read *Nu*, or, if the U be expletive, simply as N.

It results from what has been said, that the connexion of the expletives which attend on *some* of the letters with these letters, can be explained by the fact of these letters originally representing syllables, but that this will not account for the use of all the expletives. If the *quail* represents the sound U, its name may have been *U* ; there was no necessity for the expletive *pair of lines* being added, so as to make its name *Wi*. While, therefore, the original idea of expletive characters must have been derived from the original use of phonoglyphs, as representatives of syllables, the system of expletives in actual use in the ages of the twelfth dynasty and of the papyri must have had some other origin. I think there can be no doubt that this origin was the circumstance, whatever it was, that gave occasion to the continued use of expletives. If there was any reason which rendered it convenient or desirable to substitute the names of letters for the letters themselves, this would render it expedient that *all* letters should have names,

formed by the addition of expletive characters to the letters themselves; and that expletives should, consequently, be assumed for these letters which had them not in the first instance.

This brings us, then, to consider the last question—why the use of expletives prevailed among the Egyptian scribes. It cannot be alleged with any reason that they used them *merely* to increase the quantity of their work, for which they were probably paid by the line. This may have influenced them to use them to a greater extent than they would otherwise have done, as it probably influenced them also to use determinative signs to a greater extent than necessity required, or, perhaps I may say, than strict propriety warranted; but it could not have been the principal reason for the practice being adopted and retained. The opinion I have formed on this subject is, that expletive letters were first used in hierographic writing, and that the cause of using them was the great resemblance which certain hierographs bear to each other. Those, for instance, which correspond to the *mouth*, R, and to the *semicircle*, T, are absolutely undistinguishable. Not only the T of one manuscript is formed as the R of another, but the T and R of the same manuscript are often formed precisely in the same manner.* How, then, are they to be distinguished? In known words, the

* As connected with this, it may be worthy of remark that the same syllabic sign is sometimes used to express syllables terminating with T and with R. Thus, the hierographic equivalent of a character which may, perhaps, represent a *dead owl* (see fig. 86), is used in the papyri to represent MeL, “a keeper,” or “owner,” MuT, “a mother,” and MeT, “death,” or “to die.” These three words are only to be distinguished by determinative signs; the first occurs, among other places, Pl. 84, l. 8, 9, and has no determinative (fig. 86). The second differs from this in that it is followed by the *seated female figure*, Pl. 149, l. 9; and the third by the *Oryx's horn*, Pl. 92, l. 7, or the *sparrow*, Pl. 90, l. 11, the usual determinatives of words expressing what is bad. In the same papyrus these words are all written exactly alike; and the two characters in question are also used as a syllable in many other words. A similar instance has been already noticed with respect to the character which begins the name of Egypt in fig. 78; and I have observed others. It appears to me the most probable way of accounting for this, to suppose that the sounds of R and D (which was the power of the *semicircle* on the sea-coast of Egypt) were confounded; as we know they were in the languages of all neighbouring countries, in which they are interchanged in many words, and in which the letters, when distinguished, were only made to differ very slightly. The distinction between them was, I conceive, not made till after the introduction of the hierographic characters; and when it was made, it was only attended to in the hieroglyphics, the *mouth* being appropriated to the sound R, while the *semicircle*, which was

characters which accompany them would enable the reader to decide. An Egyptian, for instance, would at once know that the word represented in fig. 87, which occurs Pap. pl. 49, l. 3, and which signifies "an obelisk," was to be read *tekhén*, and not *rekhén*; though *we* could never have discovered this, if the word had not been found written hieroglyphically on an obelisk of Nectanebes. But had this been an unusual or foreign word, an Egyptian himself would have been at a loss to tell what was its first letter. This difficulty was practically removed by the use of expletives. The *mouth* and *semicircle* have different expletives; and if a word contains one of them followed by its proper expletive, it is at once known which of them it is. The object, then, of using expletives was, in the first instance, to distinguish letters which were liable to be confounded from their similarity. No other pair of characters are so similar as the two last mentioned; but many others closely resemble one another, and the carelessness of a scribe, a blot of ink, or a defect in the papyrus, whether existing at the time it was written upon, or occurring subsequently, might render it impossible to tell which of two or three characters was that intended. The use of expletives was then very great, in rendering the reading of words more certain. They, no doubt, created an uncertainty, so far as the vowels were concerned; but in return for this they made the consonants much more certain, not only at the time of writing, but when what was written should come to be read, perhaps after a considerable interval of time, and after the papyrus had suffered decay. There are many instances in the papyri in the British Museum, in which characters that are partly eaten away can be restored with perfect confidence by help of the expletives that accompany them; though, if these had been absent, different modes of completing them would have been equally proper.

With respect to the use of expletives in hieroglyphic sculptures, I consider it an abuse. The instances of it are comparatively rare, and they occur in texts which were copied from hierographic originals. The scribe who drew the characters on the stone may have only been acquainted with the art of substituting hieroglyphs for the hierographs which corresponded to them. He may not have been acquainted with the more difficult art of reducing the hierographic

originally an ideographic sign of the feminine gender, was used to express D, or, in the south, T, the formative of feminine nouns which were derived from masculines, and also the feminine article.

forms of words which contained expletives, to the hieroglyphic forms which excluded them. Many hieroglyphic texts, such as, for example, the Paris obelisk, contain no expletive characters.

I have now completed what I have to say in regard to the newly-discovered principle of expletive letters. Ignorance of this principle has led former investigators into many errors, even such as had right views as to the nature of syllabic signs, and the mode of completing them by letters. This, however, is not the only cause of the errors that have hitherto prevailed. Independently of this, the mode of investigation heretofore pursued seems to me very objectionable. I have next, then, according to what I proposed, to consider the modes of proceeding which have been heretofore adopted, with a view to ascertain the exact powers of the phonoglyphs, and to lay down rules for a more correct investigation. This is the object of the second part of this paper.

PART II.—BEST MODE OF INVESTIGATING THE VALUE OF PHONOGLYPHS.

It is pretty obvious that all investigations into the value of Egyptian phonoglyphs must proceed from data of the four following kinds.

1st. Transcriptions of Egyptian words, expressed by phonoglyphs, in characters of a known foreign language.

2nd. Transcriptions of words of a known foreign language, in Egyptian phonoglyphs.

3rd. Various modes of expressing by phonoglyphs the same Egyptian word.

4th. Comparisons of Egyptian words, expressed by phonoglyphs, with corresponding words in kindred languages.

All these sorts of data have been used by Champollion and his followers; but they have been used, as it appears to me, with so little judgment, and with so little regard to the precautions against error that should have been taken, that great errors could scarcely have been avoided, and in fact have occurred.

Before I proceed to consider them in succession, it will be proper that I should state clearly the object which is *now* to be sought, and that I should notice a precaution of a general nature, which, though obviously proper, has been hitherto too much neglected. I am not now seeking the powers of the Egyptian phonoglyphs, as if nothing were known respecting them. If I were, data of a

different kind from what I now recommend would have to be consulted. But I avail myself of the labours of Champollion and my other predecessors. It might be said with truth of Champollion's alphabet, and may be said with greater reason of Chevalier Bunsen's, that the powers assigned to *most* of the letters are correct, or *nearly so*. In some few instances, the power of a character has been altogether mistaken; in several others it has been slightly so; while in many cases it has been correctly given. What I propose now to do is to re-examine all the characters, aided by the new principle that I have explained, and, availing myself of new data, preferable in some important respects to those that have been previously in use, to seek the *exact* powers which they had.

The precaution which I have first to point out is, that these powers should be investigated at a particular time and place. Other investigators have proceeded as if the Egyptian letters had the same powers in all parts of Egypt, and in all ages. This, however, ought not to be taken for granted. The difference between the dialects of the Coptic language is by no means trifling; and as the Memphitic and Theban monuments exhibit many Egyptian words, written with the same phonoglyphs, which correspond to words that were different in the Memphitic and Theban dialects, it seems plain that *some* phonoglyphs must, before they were superseded by the Coptic letters, have been differently sounded at Thebes and at Memphis. Again, Egyptian words were transcribed differently by different Greek writers. The name of the builder of the great pyramid was called by Herodotus $\chi\acute{\epsilon}\omicron\psi$, and by Manetho $\Sigma\omicron\upsilon\phi\iota\varsigma$. To say nothing of the latter parts of these names, which were variously modified by these authors, in order to reduce them to a Greek form, it is plain that the initial letter of this name, the *sieve*, was pronounced by the informant of Herodotus as the Greek X, or in a manner not very dissimilar; while Manetho was in the habit of pronouncing it as our SH, which could be best represented by the Greek Σ . Possibly this difference was occasioned by the informant of Herodotus being a Theban, while Manetho was a native of Lower Egypt: but it is possible, also, that the sound of this letter varied in different ages. In the Theban dialect of the Coptic language, as well as in the Memphitic, it was represented in most words where it occurred by Ψ , that is, certainly, our SH. This was its common equivalent, whether initial, medial, or final; as in $\psi\iota\tau\epsilon$, "to seek," $\psi\epsilon\psi\tau$, "to entangle in a net," $\psi\psi$, "what," &c. &c. Occasionally, it was represented by

⤵, answering to the Memphitic ⤴. This is best accounted for by supposing that the original hard sound of this letter was in some words, though not in all, changed to a softer one; and perhaps its original sound might be inferred, with sufficient certainty, from the two into which it is known to have degenerated, supposing that we had no other evidence for it. This, however, is beside our present purpose. What I now insist on is the fact, that the letters of the alphabet had, in some cases, different powers in the same place, at different times, as well as in different places at the same time; though the former difference was probably less sensible than the latter, until a considerable time after the Persian conquest. I propose, therefore, to select a particular time and place, and to investigate, in the first instance, the powers which the phonoglyphs had *then* and *there*. It will be a matter for after consideration to find what difference there was in their powers at other places and times. This will be occasionally noticed by the way, but it is no part of what I now propose to accomplish.

The place which I have thought it best to select is Thebes, and the time is the interval between the first Rameses and the fourth king of that name, according to Sir G. Wilkinson and others: the fifth, according to Rossellini. During this interval the most important sculptures at Thebes were executed; almost all those at the Ramesseion and Medinet Abû, and the best of those at Karnac, Luxor, and Bibân-el-Molûk. During this same interval, also, the greater part of the papyri published by the British Museum were written at Thebes. We must except the beginning of the first Sallier papyrus (which is more ancient), the fourth Sallier (which seems to have been written at Memphis), and, perhaps, the last two Anastasi. The remainder, which occupy about 136 plates of the published *fac similes*, were written at Thebes, and in the interval above mentioned, which I have called "the age of the papyri."

As I shall have occasion to refer to monuments of different ages, though none of them can be admitted as evidence of primary authority in the present investigation, I deem it right to describe briefly the several ages as I class them. I do so for convenience, waiving the discussion of disputed chronological points.

The first age, or "age of the Fourth Dynasty," comprehends the royal names found in the great pyramid, the inscriptions on the tomb of Teta, and on the coffin of Mycerinus, in the British Museum, and those copied in Mr. Burton's

27th plate, figures 1, 3, and 4. I differ from some other investigators, in not referring fig. 5 to the same age. It appears to me considerably later.

The second age comprehends all monuments, except those named, with which I am acquainted, that are earlier than the reign of Amenemhe I. The order of the kings named in them is yet unsettled, and it will probably be found to be very different indeed from that which Chevalier Bunsen imagines that he has deduced from Eratosthenes.

The third age, or "age of the Twelfth Dynasty," includes the monuments of Amenemhe I. and his successors, to the end of the dynasty. I should make a separate class for the monuments of "the Middle Kingdom" of Chevalier Bunsen, if I knew of any such, or if I saw any reasonable grounds for supposing that this supposed interval between the twelfth and the eighteenth dynasties ever really existed.

I call, then, the age of the Eighteenth Dynasty the fourth age, making it extend so as to include the reign of Rameses I.

The fifth age, or "age of the Papyri," has been already defined.

The sixth is that of the successors of Rameses III., the hero of Medinet Abû, to the end of the Twenty-fifth Dynasty.

The seventh includes the later dynasties, native and Persian.

The eighth extends from the Grecian conquest to the death of Ptolemy Evergetes II.; after which the style of hieroglyphical writing began to degenerate much more rapidly than it had previously done.

The ninth includes the reigns of the later Grecian, and the earlier Roman sovereigns.

The tenth age is that of the later Roman emperors, including the sculptures at Dendera and Esne, where every principle of propriety that had been recognized in earlier times appears to have been abandoned.

I now come to consider the several kinds of data which I have mentioned in succession. And first, as to transcriptions of Egyptian words expressed by phonoglyphs, in characters of a known foreign language. These have been considered very useful; and indeed they have been regarded as unexceptionable means of determining the powers of the phonoglyphs which the words contain. Objections, however, lie against them all. The languages in which the transcriptions are made are Greek and Hebrew. As to the former, it is plain that,

as none of them can be older than the seventh age, and as the greater part are not earlier than the latter part of the eighth, they cannot be received as evidence of primary authority for our present purpose. Some of them, as the names in Mr. Grey's Antigraph and the registries of several deeds, which may, in many cases, be resolved into their elements, furnish us with the Greek representatives of several hieroglyphic words, as pronounced at Thebes, under the Ptolemies. The names of some kings also furnish us with similar data; and the pronunciation of them is probably more to be depended on than that of ordinary names, as being more generally used by the people in all parts of the country, and, therefore, more likely to be correctly reported. These are chiefly valuable, as they may possibly give us the powers of characters which are ascertained by other means to correspond to ambiguous Hebrew letters, as the בּנְדִיכַפֶּת, and שׁ.

When we recollect, however, that the Greeks had no mode of correctly expressing the sounds of W, V, SH, ZH, CH (at least, when initial), and H when not initial, or those corresponding to the Hebrew letters װ, ן, and ק, all of which, for aught that we have a right to assume, may have had representatives among the Egyptian phonoglyphs, we shall be inclined to lay very little stress on Greek transcriptions of hieroglyphic words, as evidence of the powers of the letters at any time. All that we can expect from them is a knowledge of the vowels that should be inserted among these letters to render the words pronounceable. The words which I have mentioned above furnish us with some evidence on this point, and yet we find them vocalized differently in different Greek transcriptions. The name of the god of Thebes is written Αμμουν, Αμεν, and Αμον. We may probably infer from this that the accent was on the first syllable, and that the second vowel was pronounced as we should pronounce that in the word Ammon. Other instances of discrepancy in the vowels cannot be explained in quite so satisfactory a manner; but still the data in question are of some use, shewing us, with more or less exactness, how the letters, in many words, should be vocalized. As to Greek transcriptions which are not royal names, nor of known Theban origin, I would dismiss them from consideration altogether. They are possibly—I may say probably—Greek corruptions of Egyptian words, which were themselves corruptions of the genuine words that they are supposed to represent. I will illustrate this by an example. The name

Μέμφις is a Greek corruption of *Μεν-νυφ*, or *Μεν-νυφι*; a termination being added, a short vowel omitted, and the labial nasal being substituted for the dental one, as more congenial to the labial, which was then made to follow it immediately. *᾽Ομφις*, which is given by Plutarch as an epithet of Osiris, is a similar corruption of *᾽Ον-νυφι*; a W, to which the Greeks had no equivalent, being dropped, in addition to the preceding changes. But the word *νυφ* or *νυφι*, meaning "good," is itself a corruption. The hieroglyphic word which it represents had a final R; and in a Theban transcription, in the fourth line of Mr. Grey's Antigraph, we have this very name written *Ον-νώφρις*. In other transcriptions, the latter element is written *νεφερ*. The first vowel was probably the natural one, already mentioned as occurring in the last syllable of Ammon, into which all unaccented vowels have a tendency to pass; and the accent was probably on the last syllable when the word stood alone, on the first syllable of the compound; *N'fér*, *Wón-n'fer*, *Mén-n'fer*. Now, what dependence can be placed on transcriptions which give for the last two words such misrepresentations as *᾽Ομφις* and *Μέμφις*? As data for investigating the powers of the phonoglyphs, they are of no value whatever; and they are of very little value in determining their vocalization.

The few transcriptions that we have in Hebrew characters are quite useless for the latter purpose, inasmuch as the Hebrew agrees with the Egyptian in omitting vowels. As to the former purpose, their use must be very limited. To say nothing of the difference in time between many of these transcriptions and the age of the papyri, it is probable that they all express the pronunciation of Lower Egypt, rather than of Thebes; they cannot, therefore, be much relied on, if in any case there be reason to suspect that the pronunciation of any letter was different in different parts of Egypt. Another objection to them is the circumstance that seven of the Hebrew letters had a double power. The Masoretes have indicated the power which should be given to each letter in each case, *according to their opinion*, by the insertion or omission of Dagesh, or by the position of a diacritical point. There is, however, no reason to think that their opinion was a correct one. So far from that, the reflex evidence of these transcriptions shews that the Dagesh was inserted by them very improperly, and omitted by them equally so. The royal name, fig. 88, which they have pointed

as תִּרְהַקָּה, Is. xxxvii. 9, and which our translators have expressed by *Tirhakah*, was probably *Tharúka*, conformable to the transcription of the LXX., Θαρακά. The initial letter could not have been sounded as T, if it was expressed, as it apparently is, by a combination of T and H; nor should either of the two *Ha's* be sounded, they being both representatives of the long A. The Masoretes have rightly pointed the latter as such, but our translators have expressed it in opposition to them, while they have also adopted their error in pointing the first *He* as a consonant. It is possible, indeed, that the true reading of the name was *Tah'rākā*, the H being united with the R instead of with the T; but the analogy of *Phrat* (fig. 15) leads me to prefer the former reading.

In Ez. xxx. 87, another Egyptian name occurs, פִּי־בֶסֶת. Our translators (who neglected the change of sound of the *Beth*, indicated by the presence or absence of Dagesh) read this name *Pi-beseth*, but the Theban pronunciation was probably *Pi-Bast*, and the Memphitic *Fi-Bast*, or perhaps *Basth*. The initial letter of the name of the goddess (fig. 89) was certainly B, and not V, as the absence of the dagesh would indicate. It is expressed by a combination of characters, which, taken singly, represented at Thebes W and P, and which were repeatedly used, as we shall see in the sequel, to represent B. The *seat* has here the power of S. The *semicircle* is T, and the *lituus*, its expletive, seems here inserted in order to shew that this was to be sounded in this instance as a letter, and was not a mere sign of the feminine gender. This is followed by the determinative sign for Egypt, already met with in fig. 78. The initial character is an ideoglyph; it is to be sounded, as the small line indicates, as the name of a house, the article being prefixed; and as that line marks it to be of the masculine gender, the article will be פ, sounded as with dagesh at Thebes, and without it at Memphis. The same element occurs in the name of פִּיתָם, “the house of Tom, Heroopolis,” and of Φίλαι for Φι-λακ, probably “the house of the beginning.” This word, when it signifies, as here, “a town” (as the corresponding Hebrew *Beth* often does), was masculine; otherwise it was feminine. The Coptic equivalent was ηι, pronounced, I believe, *yi*; but the old Egyptian word may have been *i*, as the transcription φίλαι would indicate. The goddess Bast, after whom this city was named, is frequently mentioned in the Memphitic papyrus, Sallier, No. IV.; at Thebes she seems not to have been worshipped. Champollion and his followers have confounded her with the lion-headed goddess

of Memphis, who is also frequently named in this papyrus, and evidently as a distinct goddess; and on the strength of this false identification, they have miscalled the goddess of Memphis Pasht, Pakht, and Pekht. The true mode of reading this name, its meaning and relations, will be shewn in Part III.

It might be thought, from what I have said, that I am disposed to reject these Hebrew transcriptions of Egyptian words as useless. In general, I do; but there is an exception. If the transcription contains any of the peculiar Hebrew letters, ך, ט, ע, or ק, it should be examined with a view to determine what Egyptian phonoglyphs correspond to these letters. We may fairly conclude that this Egyptian character had a similar sound in Lower Egypt, at the date of the transcription; and it is highly probable that it had the same sound at Thebes also, and that in all ages, until the language was corrupted by the influx of foreigners. If such transcriptions be not in themselves conclusive evidence as to the powers of these letters, they will, at any rate, greatly corroborate evidence to the same effect, drawn from transcriptions of the second sort; and where the two kinds of evidence agree, no evidence drawn from Greek transcriptions or Coptic derivations should be admitted to weigh against it.

I will now mention the Hebrew transcriptions which contain any of these letters, and of which we know the hieroglyphic representatives.

1. I begin with the word רע, which occurs as an element in the name רעמסס, Gen. xlvi. 11, and with the masculine article, פ, prefixed to it, in פוטי־פרע, Gen. xli. 45, and in the corrupted name חפרע, Jer. xliv. 30. Four of Kennicott's MSS. read ה for ך, at the commencement of this name, which is probably correct; but this letter, whatever it be, should have been preceded by ך, which has disappeared. The first element in the hieroglyphic name is a syllabic sign (fig. 90), which has the power of ך, *Wah*, which Herodotus represented by a single A, and later writers by *Ova*. The common element in these words is *Ra*, as it is commonly read (fig. 91), meaning "the sun," which is generally accompanied by, and often replaced by, the *disk* (fig. 5). It would occur to any person ignorant of Coptic, and of the fanciful etymologies of Coptic scholars, that the same element appeared in the name פרעה, the name given in the Old Testament to the King of Egypt. The ה at the end is easily accounted for in the same manner as those in תרהקה (fig. 88); it represents the long vowel A. The name would then be, according

to the Theban pronunciation, *Pra'á*, the apostrophe indicating the peculiar compression which the Hebrews represented by *y*, and, as would appear from this transcription, the Egyptians by the *arm*. In Lower Egypt the P probably became F, and the A passed into U, as in many other words; giving us *Fra'u* corresponding to the $\Phi\rho\alpha\omega$ of the LXX. That this is the true etymology of this name, notwithstanding all that has been said to the contrary, will appear from the name given to the King of Egypt, as such, in the Sallier papyrus, No. IV. (Pl. 165, l. 6, *et al.*), which I have copied in fig. 92. It consists of the letters which we have just seen corresponding to the Hebrew פֶּרַעַה , preceded and followed by the *sun's disk*, and enclosed in a royal cartouche; after which are placed three characters, which, when combined, constitute a determinative sign which follows all names and titles of Egyptian kings. The first is the syllabic sign of the word *Ankh*, "life," or "living;" and the others are the initial letters of words signifying "strength" and "health." They are alphabetic characters, not syllabic signs; though, in this particular case, they have the appearance of the latter. The characters, then, signify "living in strength and health;" but it would be improper to translate them, they being used as a mere determinative sign. Now, the name within the cartouche is used in this MS., which is a Memphitic one, precisely as Pharaoh is used in the Bible; and it cannot be reasonably doubted that it is the same word. In Theban MSS. this word is not found; it is there replaced by other signs, as in fig. 93, meaning "the palace," or "the great house;" used for "the king." In hieroglyphics, this title is sometimes found within a royal cartouche, as in fig. 94; but this is, I believe, first met with in the seventh age. There are persons who will consider it a sufficient reply to all this, that $\sigma\rho\phi\omicron$ is the Coptic word for "a king;" and that, consequently, $\pi\iota\sigma\rho\phi\omicron$ must be the origin of the Hebrew פֶּרַעַה , although it is admitted that no instance can be produced in which a word corresponding to this appears in hieroglyphics. With such inquirers I can have no feelings in common.

2. The latter part of the name given to Joseph is פֶּעֶנֶר . It is highly probable, if not quite certain, that this signifies "life," the whole name meaning "the preserver of life." The פ represents the Egyptian masculine article, and the other three letters correspond to those in fig. 10.

3. The letters תרהקה correspond to those in fig. 88, the additions to represent vowels being in hollow types.

4. The name קשש, 1 Kings, xi. 40, is represented hieroglyphically, as in fig. 95. It contains a letter which is not represented in the Hebrew, but which appears in Manetho, according to Africanus, who gives Σέσωγγις. Eusebius makes the name Σεσώγγωσις.

5. The word מרר, Gen. xli. 2, is admitted by the best lexicographers to be an Egyptian one. "The meadow," or "marshy ground" near the Nile is expressed as in fig. 96, Pap. Pl. 75, l. 3. It is pretty evident that the two first letters of the Hebrew word correspond to the *eagle* and *sieve*. The duplication of these characters is irrelevant to our present inquiries, as is the meaning of the two determinative signs at the end.

6. The only other Hebrew transcription of an Egyptian word which any one has pretended to identify is פושי, Gen. xli. 45, which has been supposed to be equivalent to fig. 97, read *Pete*. This, however, is very questionable; for, to say nothing of the vowels of the Hebrew word, which are thus left without any thing to represent them, I am not aware that there is any evidence that this element appeared in the formation of Egyptian names till at least 1500 years after the time of Joseph. The true equivalent of this element, and the resolution of תחפנחס, Jer. xlvi. 14, into its elements, are the chief desiderata in this class of data.

The transcriptions of words in a foreign language in Egyptian phonoglyphs are far more valuable than those of Egyptian words in foreign characters. By help of transcriptions of Greek words made in the three last ages, the alphabet which we now have was formed, and it is by transcriptions of an earlier age that it must be completed and rectified. Transcriptions in records of the standard time and place are evidence of primary authority. It is no sound objection against them that the pronunciation of the original words in the foreign language is itself doubtful. A sufficient number of the words transcribed occurs in different languages, to remove all force from this objection; for by comparing the words as they are differently represented in those languages, we may confidently infer their correct pronunciation. It may be said, indeed, that the pronunciation of the words may have altered since the transcription into Egyptian was made, and before they were committed to writing in the foreign language. But

to this I answer, that the greater part of the words transcribed, of which we have any equivalents, are met with in the older books of the Hebrew Scriptures; and that the interval between the writing of these and the age of the papyri was not great. I answer, further, that the population of Syria, including the Holy Land, of the names of places in which many of these names are transcriptions, has always been peculiarly tenacious of old names. It is notorious that many towns and villages have the same names now as they had in the time of Joshua; and they must have had the same at the intermediate time when the transcriptions were made. But, it should be observed, I am not advocating the adoption of a hasty conclusion from scanty evidence. In order to ascertain the power of each phonoglyph, a variety of words in which it occurs should be examined; its different equivalents, if such it have, should be considered, and a judgment formed as to which is most probable, both from the number of times that it appears to represent it, and from its capability of accounting in a satisfactory manner for the other representations of it. If there be any reasonable cause for doubt, other kinds of data should be, if possible, appealed to. It is not only the possible change of value of a foreign letter that may lead to mistake, and that must be, therefore, guarded against: we must recollect also that foreign letters may have had no phonoglyphs exactly representing them, and may, therefore, of necessity, have had to be represented either by a combination of phonoglyphs, or by such as expressed approximate sounds. Examples of the first method have been given in the names of the river Frat (fig. 15), of King Tharaka (fig. 88), and of the city of Pi-bast (fig. 89). As an example of the latter I give the word מנרל, "a castle," transcribed as in fig. 98, Pl. 114, l. 2. It will clearly appear hereafter that the letters which represent נ and ר, in this word, had properly the force of K and T; and this is, to say the least, strong presumptive evidence that, in the age of the papyri at Thebes, no phonoglyphs had the powers of G and D. In this figure, and in those which follow it, the expletive characters are distinguished by drawing them with broken outlines. The two last characters in the word, the conventional representations of a *wall* and a *house*, are determinative signs.

The foreign words, of which transcriptions are found in the papyri, are, first, Hebrew words, not being names of places, among which I include the names of two false deities worshipped within the limits of Canaan; secondly, proper

names of places in Palestine; and thirdly, proper names of places out of Palestine. A few of these are not found in Hebrew at all; and it is obvious that, of those which are, the Hebrew spelling is much less to be depended on than in the case of words of the two former classes. As this is, in my opinion, the most important kind of data for determining the exact powers of the phonoglyphs that we possess, and as it has not hitherto been examined (for most of the words now given have been, for the first time, identified by me, in consequence of my discovery of the nature of expletives; and most of the others have been supposed to be spelled so improperly, in consequence of the expletives that appeared among their letters, that no dependence could be placed on them as transcriptions), I will produce the principal foreign words, of which transcriptions appear in the papyri or hieroglyphical texts of the same age, and of which I am able to give the transcriptions in Hebrew, Greek, or modern Arabic. I write *x* for the Hebrew ן, *o* for *y*, and *q* for *p*. The Roman letters, which immediately follow the reference to the place where the Egyptian word occurs, express its reading according to Chevalier Bunsen's alphabet. I use *x* for his χ , and *sx* for $\sigma\chi$, the contraction of which he uses as a letter. The expletives are written in a smaller character than the other letters, and an *e* of the same size with the expletives, implies that a vowel has to be supplied. I express, by capital letters, twenty-one of the thirty-two letters of Chevalier Bunsen's alphabet, and some of the letters used in place of them in certain syllables, as to the power of which I think that no doubt can be entertained. One of the remaining letters in the alphabet was not, so far as I am aware, in use in the age of the papyri. The powers of the other ten are open for further inquiry.

Hebrew Words.—Not Names of Places.

II.—1. בעל, *Baal*, Judg. vi. 25 [Phœn. בעל, in comp. βαλ, βολ]; fig. 100, Pl. 26, l. 8. baRu. The expletive *is*, however, omitted at Karnac (æt. Rameses II.), Ch. Gr. 495; and accordingly Chevalier Bunsen reads the name Bal. This ass-headed deity seems to have been identified by the Egyptians with their Set or Typhon.

2. עשתרת, *ashtōreth*, 1 Kings, ii. 5, and *ashtārōth*, Judg. ii. 13 [Phœn. עשתרת, Astarte, Cic. de Nat. Deor. 3, 23; Αστέρα, Luc. de Deâ Syrâ; in comp. ασταρτ]; fig. 24, Pl. 87, l. 4, aSTaRuTa.

3. מרכבת, *mirkéveth*, a chariot, Gen. xli. 43, fig. 12, Pl. 60, l. 5, MaRu-KabuTa.

4. ים, *yām*, the sea, Josh. xv. 5, *et passim*, fig. 14, Pl. 56, l. 1. IuMa.

5. מגדל, *mighdāl*, a tower, Judg. viii. 9, and *Mighdōl*, a town on the frontiers of Egypt, which grew up about the very castle spoken of in the papyrus as built by Seti II., Jer. xliv. 1 [*Μαγδόλον*, Herod II. 159], fig. 98, Pl. 114, l. 2. MaKTaRu.

6. ברכות, *B'rēkhōth*, springs, or tanks; in sing. 2 Sam. ii. 13 [بِرْكَة, *birket*], fig. 102, Pl. 125, l. 16, bPRuKabuTa.

The three following occur as elements in the names of Syrian towns:

7. בית, *bēth*, a house, Judg. vii. 24, *et passim* [بيت, *bēt*; in Josephus and early Christian writers in comp. Βαιθ, Βηθ, and Βεθ; Βαυρο-γάβρα, Ptol.; Βῆτα]; fig. 99, Pl. 56, l. 8; and without the *pair of leaves*, l. 5, bPITa, or bPeTa. In Burton's Exc. Hier., 16 K, from Karnak, æt. Rameses II., a bird, which Chevalier Bunsen calls a *night-raven*, is substituted for the *flying crane* in this word, being preceded by the *leg*. Elsewhere, this bird alone is used to express the initial sound in this word, and I think I have seen it so within the age of the papyri, though I cannot now refer to the place. Compare IV. 8 (fig. 114), where it so occurs in another word. This bird is sometimes replaced by one with a tuft at its breast, supposed to be a *Numidian demoiselle*; and each of these birds is sometimes preceded by a *burning censer*, as in fig. 109, which, whether alone or as a part of a proper name, should be read *bi*. Compare also fig. 115.

8. כפר, *Kāfār*, a village, Josh. xviii. 24 [Phœn. كفر, *kefr*, Καπερ- and Καφαρ-ναούμ, in different MSS. of the New Testament; Καπαρ-κότια, Ptol.]; fig. 102, Pl. 56, l. 3, KafRu.

9. קרת, *Qéreth*, a town, Job, xxix. 7 [Phœn. קרת; קרית, *Qiryath*, *passim*, قرية, *qúryat*, Carthago; Κίρτα]; fig. 28, former part, kaRuTa.

Some other words might be added, but I prefer confining myself at present to those of which the identification is obvious. I intend quoting others, in the third part, as evidence for the powers of some doubtful characters.

Names of Places in Palestine.

III.—1. כנען, *K'nácan*, Judg. iii. 1 [Phœn. כנען; Sept. Χαναάν]; fig. 95 Karnak, æt. Seti I., H. I. 5. No. 37, KaNaNa.

2. אמר, whence חמרי, *Ha-emôr-i*, 1 Sam. vii. 14; fig. 17, Pl. 96, l. 3, oMaURu.

3. לבנון, *L'vānōn*, Josh. xiii. 6 [لبنان, *libnān*, Λίβανος]; fig. 96, H. I. 5. No. 6, ReMeNeN.

4. תמנה, *Timnā*, Josh. xv. 57 [تبنه, *t'bnēh*]; fig. 73, Pl. 56, l. 3, TaMN? Mr. Birch reads the final character *nehsi*, in place of *h*, and suggests that the Nasimones are intended.

5. צידון, *Tsidhōn*, Judg. i. 31 [Phœn. צדן; صيدا, *ḡa'ida*, Σιδον-ίην, Hom. Od. N. 285], fig. 105, Pl. 54, l. 8, tr....Na. The middle of the word is destroyed; but there can be no doubt as to the place intended, as the name occurs between IV. 8, and III. 6, being the order of the geographical position of the three cities.

6. צרפת, *Tsārpāth*, 1 Kings, xvii. 9 [صرفند, *ḡurafénd*; Σάρπητα, St. Luke; Σαρπεφθά, Joseph.]; fig. 106, Pl. 54, l. 8, taRuPuTa.

7. צר, *Tsōr*, Josh. xix. 29 [Phœn. צר; صور, *ḡūr*; Τύρ-ος]; fig. 107, Pl. 55, l. 1, taRu.

Names of Places out of Palestine.

IV.—1. פרת, *Prath*, 2 Sam. viii. 3; [Εὐ-φράτ-ης, Her. I. 179; فرات, *Furāt*]; fig. 15, Pl. 75, l. 7, PuHaRuTa.

2. נהריים, *Nahārayim*; Syr. نهرين, *Nahrin*, “the two rivers.” Hence the hieroglyphic name of Mesopotamia, the land of the two rivers, fig. 108, Pl. 96, l. 4, NaHaReNNa. The *man touching his mouth*, which follows the syllable ReN, is the determinative sign proper to the word *ran*, ραη, “a name.” Its insertion in this place was probably a mistake of the scribe: if not so, it is, at any rate, abusive; see page 159. In H. I. 5, No. 51, the first four letters occur alone. Champollion, Gr. p. 150, cites two other forms of the word, NeHeRIN_a and NeHaRIN_a; both, probably, from an inscription then at Karnak, now at Paris,

of the reign of Thothmos III. In other places in that inscription it is written with the determinative sign of water, the last character in fig. 15, before that of country.

3. שנער, *Shinōār*, Gen. xiv. 1, [Σενναάρ, LXX.; Σίγγαρα, Dio; سنجر, *Sinjar*]; fig. 110, Pl. 96, l. 3, saNukaRu. In H. I. 5, No. 54, the word occurs without the second and fourth expletives. On the contrary, in an older inscription from Solab in Nubia, these are retained, while the first and third are omitted; and in the inscription of Thothmos III., just mentioned, the fourth expletive is alone found. The *reed* is occasionally substituted for the initial character.

4. כרכמיש, *Karkh'mish*, Is. x. 9 [Κιρκήσιον, Zos. قرقيسيا, *qirqisiyá*]; fig. 16, Pl. 27, l. 6, kaRukaMasxa.

5. Ατυρία, Dio, 68, 28; Ατουρία, Strabo, 16; اثور, *athúr*, Abulfeda, who gives it as the name of an ancient city on the Tigris, fig. 111, Pl. 125, l. 14, otURu. Perhaps we should read the *double line*, which would be the expletive of the *hand*, for the *lituus*. I believe, however, the latter was intended. The papyrus is here damaged. At Karnak, in this age, according to Sir G. Wilkinson, it is written without any character in this place, and without the last expletive. In a later inscription at Karnak (æt. Shishonk I.), the *double line* is used after the *hand*, and the *lion* replaces the *mouth*. The name which occurs in the first kind of Cuneatic writing, and which I have represented in fig. 112, may represent either this name or the following, if, indeed, they be not identical. The power of the second Cuneatic letter is in dispute. Beer, the best authority, represents it by ζ; it had probably the sound of our *s* in *pleasure*.* The other characters are A-URA.

6. אשור, *Ashúr*, Numb. xxiv. 22 [Ασσυρία, Herod. I. 194, Ptol.] In Pl. 57, l. 6, a poetical address to the King of Egypt contains this passage: "Thy name is exalted as that of kataRuNuI (or, by analogy of other transcriptions, קצרני), the chief of OsaRu (fig. 113).

7. חלבון, *Xelv-ōn*, Ez. xxvii. 18 [Χαλυβών, Strabo; حلب, *Xálab*]; fig. 19, Pl. 27, l. 6, XiRubu; compare also fig. 21, Pl. 97, l. 1, Xaru.

* I am now (January, 1847) satisfied that Jacquet's value of this letter, *th*, is the true one.

8. Βηρυτός, Strabo, xvi. 2; بېرۇت, *Bērūt*, fig. 114, Pl. 54, l. 8, baRuTa. In H. I. 5, No. 65, a name occurs which is possibly a variation of this, fig. 115, bi-RUT. I give the two initial characters, which do not occur in the Chevalier's alphabet, the value indicated under II. 7.

9. כּוּשׁ, *Kúsh*, Gen. x. 7; Χοῦσ-ος, Jos. Arch. i. 6, 2, where he says that this was the name given in his time to the country south of Egypt, figs. 23, 26, 27, Kesx, Kasx, Kesxi.

10. I will now give an identification that requires some explanation. The country west of Egypt is always called in Egyptian inscriptions that of the Bows, or the Nine Bows. Now, "a bow" is expressed phonetically (though I have never seen it so in reference to the name of this country) as in fig. 116, Burt. E. H. 47, from Karnac (æt. Rameses II.), Pet. The Coptic equivalent is πϣϣ. I identify this Egyptian word with כּוּשׁ, Gen. x. 6, which Josephus asserts to be Libya, and which the LXX. have so translated.

11. The name of the country from which the Egyptians imported frankincense and balsams is given, fig. 117, Pl. 96, l. 2. O-Rusa. Now, the name of the people about the port, now called Yembo, in Arabia, is stated by Ptolemy to be the Ἀρσαι.

12. I conclude with the name of a people which might have been placed in the preceding division. It is given by Champollion, p. 180, from Medinet Abu (æt. Rameses III.), fig. 118, PuRusaTa. In an inscription given by Burton, E. H. 43, col. 1, a *pair of leaves*, I., is apparently added to the name as here given. I identify this with the פּלִשְׁתִּי, *Plishti*, of 1 Sam. xvii. 4, *et al.*; [Φυλιστι-είμ, LXX.; Παλαιστί-νοι, Jos. Arch. v. 1, 18.]

I come now to consider the third class of data, namely, the various modes in which the same Egyptian word is represented by phonoglyphs. These data are very valuable to a certain extent. When a word or termination is variously written phonetically, the characters which are interchanged must have had the same powers; and where interchanges of this kind occur in a number of words, no stronger evidence of the equivalence of the characters can be required. But the number of characters which are interchanged in this manner is very limited. The *quail* and the *lituus* (fig. 29), the *purse* and the character resembling a *sugar-tongs* (figs. 24, 25), the *chair-back* and *broken line* (fig. 119), both

used from the earliest period to express the pronoun feminine singular, and the prefix forming causative verbs; the *owl* and *half arch* (fig. 120), used for the prepositions “in, by;” and the *waved line* and *under crown* (fig. 121); are the only ones which can be said to be *habitually* interchanged in the age of the papyri: a few other occasional interchanges will be noticed in the following part. In general, the Egyptian scribes had one standard mode of writing each word, from which it was an error to deviate, except so far as was required in order to alter the grouping of the characters, in passing from horizontal to vertical writing, and *vice versâ*; and for this purpose the interchanges already mentioned were sufficient. In the use of words which contained syllabic signs, and in words of rare occurrence, the mode of writing was more liable to be changed; but even here variations in respect to the completion of the syllabic signs, the introduction of expletives, and the ideoglyphs which accompany the phonoglyphs, are much more frequent than substitutions of one phonoglyph for another. And, while I do not deny that these substitutions, where they do occur, may be good evidence of the equivalence of characters, I must protest against the rash use of them as evidence, which has been made and recommended by former writers. It has been assumed that whatever came from the hand of an Egyptian scribe was correct; and, consequently, that if a word was found written in two or more different ways, they were equally proper; and, so far as they consist of phonetic characters, must represent the same sounds. An attentive examination, however, will soon satisfy any one that the Egyptian scribes were very careless copyists. Even in manuscripts intended for the use of the living, as the Sallier and Anastasi papyri, great mistakes were committed. The second in the former collection, and the seventh in the latter, were transcribed by the same person from the same original, being a collection of ancient poems; the former in Tybi of the first year, the latter in Paoni of the sixth year of Seti II.; yet they differ in a vast number of places. Sometimes one MS. omits a line, or a portion of one, which the other retains, as in Pl. 17, l. 5; 20, l. 8; 134, l. 3; sometimes one of them inserts a character improperly, as in Pl. 16, l. 3, where a rather remarkable character, having the power of the Hebrew ך, is introduced between two words. The eye of the scribe had been caught with it a little further on in the line, and when he had once written it he was unwilling to blot it out. Erasures seldom or never occur in the MSS.: hence, it is not improbable

that, in some of the cases where one of the MSS. contains a line that is wanting in the other, it was improperly added rather than improperly omitted. In such instances as these, no one can doubt that in the transcription of, at least, one of the MSS. errors have been committed. Is it not reasonable, then, to infer that, in the instances in which words appear to be differently spelled in the two MSS., this difference resulted, like the other, from error?

But if the Egyptian scribes were careless in what they wrote for the living, can we wonder at their being so when they wrote the funeral MSS., which they never expected would be read at all? Yet it is on the comparison of these MSS. with one another, assuming that the differences which appear in them are legitimate variations of the same forms, that many persons seem to rely, as the surest mode of ascertaining the values of those phonoglyphs, which do not appear in Greek and Roman proper names. It is, perhaps, not to be wondered at, that this method should have been recommended by Champollion, when the knowledge of hieroglyphics was yet in its infancy; but after its having been tried by him and Salvolini, and after observing the numerous and ridiculous errors into which the last of these writers was led by it, it is truly wonderful that Chevalier Bunsen should still recommend it as the best mode of investigation. In addition to all the sources of error to which other transcriptions are subject, those of the funeral MSS. were peculiarly liable to be faulty from two distinct causes of error that affected them, as well as from that carelessness to which I have already adverted, arising from their not being expected to be read, and their being, consequently, committed to the most ignorant scribes. One of these causes is, that the papyrus was sometimes written in hieroglyphics, but was copied from a hieroglyphic original. This was the case with the Turin MS., of which Dr. Lepsius has published a copy, as with many others. If characters resemble one another in their hierographic forms, the transcriber might write the hieroglyphic equivalent of one in place of that of the other; and thus a hieroglyph may be substituted for another to which it has no resemblance at all. As examples of this, I refer to Ch. 109, c. 10, of the Todtenbuch, where the character, fig. 122 *a*, is written in place of 123 *a*. It has no resemblance at all to it; but the hierographic characters corresponding to the two (figs. 122 *b*, 123 *b*) are very liable to be confounded. So, in the same plate, Ch. 110, c. 12, we have *Spr* for *Spt*, a mistake occasioned by the resemblance of *t* and *r* in their hierographic forms, which

I have already noticed. Mistakes of this sort are very numerous, but so are also those which arise from confounding two similar hieroglyphic characters, so that it would appear as if this manuscript was immediately copied from a hieroglyphic one, but that the mediate or immediate original of the latter was hieroglyphic. As the published edition is, however, not a *fac simile*, but a copy made by the eye, and corrected by Dr. Lepsius, it is probable that some of these errors are to be attributed to the European, and not to the Egyptian copyist. Indeed it is admitted, at the end of the preface, that *some* errors in the text are of this description, though others are pointed out as being positively in the original. The mistakes in the text of the Todtenbuch, as published, amount to many hundreds; I may say thousands. The principal hieroglyphical manuscript in the library of Trinity College, Dublin, is, *beyond all comparison*, more correct; but, no doubt, a still more accurate text could be obtained by a critical comparison of a number of MSS. But, considering the worthlessness, in every point of view, of the contents of the work, the greater part of which was probably composed in the eighth or ninth age, it is scarcely desirable that a critical edition of it should extend beyond a few select chapters.

The other special cause, to which I alluded, of inaccuracy in funeral MSS., is, that a MS. intended for a female had often to be taken from an original which was written for a male, and *vice versâ*; and such was the gross ignorance of the scribes to whom was intrusted the task of writing the many thousand MSS. of this kind which were required every year for the market, that great errors were thus introduced into the text. The changes which, in general, were required, were those of the personal pronouns *k* and *f* (fig. 125), which referred to the second and third persons masculine singular, into *t* and *s* (fig. 124), which referred to the same persons feminine. But the scribes sometimes made these changes in the letters *k* and *f*, when not pronouns, but constituent parts of words. Thus, I have seen KaKU₁, "darkness" (fig. 126), perverted into TaTU (fig. 127), and sxafT (fig. 128), a word which seems etymologically connected with "sheep" and "shape," whence the Creator or *Shaper* was represented as a *sheep*, has been corrupted into sxaSxaS (fig. 129), the blundering scribe not only substituting the *s* for the *f*, but writing the first syllable twice over, under the impression that the *ti*, which was probably written in his original instead of *t*, was a mark of duplication, as it sometimes is. It is unnecessary

to adduce other instances of the ignorance or carelessness of these scribes. In the construction of the alphabet I reject *altogether* any assistance that may be derived from collating copies of the Todtenbuch. While I make what use I fairly can of such interchanges of letters as I observe to have been made in Theban texts of the age of the papyri, or in these texts as compared with those of an earlier period, or even a later one, if they appear correctly written, I do not trouble myself with the manner in which words may be found spelled in manuscripts written with carelessness, no one knows in what age, or in what part of Egypt, but all probably subsequent to the Grecian conquest. Dr. Lepsius, with that prejudice in favour of the Turin MS. which is natural to its editor, imagines it to be of the age of the eighteenth dynasty! To me the only question is, whether it was written in Greek or in Roman times. It cannot, I think, be earlier than the second century B. C.

Before I quit the subject of interchanges, I would offer two additional remarks. One is, that the fact of two letters not being interchanged, when they resemble one another in form to such a degree that they could be similarly grouped, is presumptive evidence (though, I admit, not conclusive) of their not being equivalent. Thus, the first and fourth characters, omitting expletives, in fig. 106, are capable of being similarly grouped, but they are never interchanged. This affords a presumption that they have not *both* the power of T, as Chevalier Bunsen supposed; and this presumption is strengthened by the fact that the Hebrew transcription is צרפת, and not תרפת. Other instances will be given in the following part.

My other remark is, that a mistake, even a gross one, committed by a scribe, if it were the result of his copying by the ear, and not the eye, may be good evidence of the value of a character, or the proper mode of vocalizing a word. Thus, in the Anastasi papyrus, No. 7, Pl. 137, l. 9, the word *saxt*, "to catch," or "entrap," is written as in fig. 75 (at least, so far as the phonoglyphs are concerned), in place of the past participle of the verb "to write," as in fig. 130, which occurs in the corresponding passage of the Sallier MS. No. 2, Pl. 23, l. 1. From this we may infer, not only that the two forms of X which occur in these words are equivalent, but that the participle was read S_aX_uT or S_aX_T, and not S_xaT_U, the *eagle* and *quail* being both expletives. This accords with what I inferred in the first part, respecting the form of this past participle, from a

totally different consideration. Again, in Pl. 136, l. 7, we have the word represented in fig. 131; while, in the corresponding place of the other MS., Pl. 22, l. 3, we have the two characters in fig. 132. In this instance, as in the former, while there is no resemblance between the characters substituted and those which they replaced, there is a resemblance between the sounds which they expressed; M_eRi, “loving,” and M-IRI, “in the eye,” must have been pronounced nearly alike.

I now come to the fourth class of data,—comparisons of Egyptian words, expressed by phonetic characters, with corresponding words in kindred languages. The language on which most reliance has been heretofore placed is the Coptic, which is a descendant from the old Egyptian language of the age of the papyri, though in a remote degree. It appears, however, that, from the influx of foreign words, and the change of ideas attendant on the conversion of the people to Christianity, much of it has been lost; and much of the remainder was so greatly changed in the thirteen or fourteen centuries which elapsed between the writing of the papyri and the introduction of the Coptic alphabet in place of the hieroglyphic characters, that very little reliance can be placed on the Coptic equivalents of the old words for determining the true powers of the letters which composed the latter. Not to speak of the vowels, which are written in Coptic words with little or no regard to any rule, many of the consonants in the old language have two or more different Coptic letters which occasionally represent them; while many Coptic letters are found to correspond to several hieroglyphic characters, which it is difficult to suppose were all equivalent. The *sieve* and its homophones are, as already observed, generally represented by ϣ , equivalent to our SH; but they are also represented by ϡ , that is, our H, and in the Memphitic dialect by ϣ , supposed to correspond to the Hebrew ח . That this last was the true power of the *sieve* appears not only from the consideration of the above three representations, the last of them being the only one from which the others would be likely to be derived, but also from the transcriptions of Egyptian words in Hebrew characters, and of Hebrew or Phœnician words in Egyptian characters. But, this being admitted, a question arises,—in all the Egyptian words, in the Coptic equivalents of which the ϣ occurs, are the phonoglyphs which correspond to this letter equivalent to the *sieve*? To say nothing of words in which it appears to correspond to characters which are supposed to have

the power of K, is it certain that there was no letter in the old Egyptian alphabet which had the power of SH, or of the combination SKH, which might easily be softened into SH? And if there was such a letter, is it not likely that its equivalents would be represented in Coptic words by the Ⲙ, as well as those of the *sieve*? Similar questions might be raised respecting other letters. Egyptian words which contain the *basin* and its known homophones have in its place at least four Coptic letters, ⲕ, Ⲙ, ⲙ, and Ⲛ, the two last being apparently the values of our J and CH. The corruption of the sound of ⲕ into this last sound is a well-known one, of which there are abundant instances in our own language, as well as in Italian. Thus, "church" is from *κυριακή*; "chin" from the Gothic *kinn-us*, &c. &c. But the question arises as before,—Were all the Egyptian phonoglyphs which passed into the Coptic Ⲛ equivalent to the *basin*? May not some of them have themselves had the power of our CH, or may not others of them have had the power of the Hebrew ׀, as distinguished from ׁ? These are points on which no comparisons of Egyptian and Coptic words can give us any information. And these comparisons will alike fail us, if we seek to ascertain whether the old Egyptians had any letters in their alphabet corresponding to the Hebrew ׀ (the *hamzeh*, as distinguished from the vowel that may accompany it), the ׃, in either of its two powers, or that modification of the dental mute which the Arabs represent by a ٲ, as the Hebrews probably did by a ֿ. The Copts had no equivalent to any of these letters; but though this may be considered as presumptive evidence that in the second and third century after Christ the Egyptians had no such letters, we have no right to presume that they had them not in the old times, before the country was conquered by foreigners. The chief use, then, of the Coptic equivalents of Egyptian words, in reference to our present object, is to determine which of the two values of an ambiguous Hebrew letter corresponded to the phonoglyphs by which it was transcribed; for the distinctions which the Masoretes make by *dagesh* and the diacritical points are made without adequate grounds, and often erroneously; and I may say it is chiefly in respect to the one letter ׀ that they are of any use to us, for, with respect to the dageshed letters, we possess Greek transcriptions distinguishing the two sounds, made three or four hundred years before the Coptic letters came into use, and which, of course, are much more to be depended on than any thing written in these letters can be. The Greeks had, however, but one character

by which to describe both S and SH; and we are, therefore, necessarily dependent on the Coptic for the distinction of these letters, unless, indeed, an Egyptian letter should be found to correspond with σ as well as with ψ . All this is on the supposition that the old Egyptians had a letter in their alphabet corresponding to our SH, which, however, is a matter for after investigation. That they had such a letter in the Roman, and probably in the Greek age, is obvious, for their σ is derived from it; but it is another question whether they had any such character in the age of the papyri.

The Hebrew words which have equivalent Egyptian ones etymologically connected with them are not numerous. There are some, however, as to which no doubt can reasonably be entertained; and some of these may be adduced as evidence to prove the powers of particular phonoglyphs, in conjunction with Egyptian transcriptions of Hebrew words, and Hebrew transcriptions of Egyptian ones. It is unnecessary, however, to make out any list of such words.

There are many Egyptian words etymologically connected with Indo-Germanic ones of the same or similar meaning; and this fact may possibly be useful in ascertaining the exact powers of some doubtful characters. Suppose, for example, that a series of Egyptian words, commencing with the same phonoglyphs, or with such as have been proved to be equivalent, are found to correspond with words of a given Indo-Germanic language, suppose the Latin, all of which begin with the same letter; suppose that another series be found to correspond to words beginning with a different Latin letter; and suppose that a character, the exact value of which is unknown, but is ascertained to be one of these two, commences a word of which the Latin equivalent is known; we may safely pronounce the unknown character to belong to that set of phonoglyphs to which the initial letter of the corresponding Latin word was previously observed to correspond. Or if two phonoglyphs be observed to correspond to different Latin initial letters (or even medial or final, though these are less to be depended on than initials), we may safely infer that they are not truly equivalent, though they may, perhaps, be represented by the same Coptic letter.

It is not necessary that all the words of the series be found in the same Indo-Germanic language. The law of the initial mutes, discovered by Grimm, enables us to transfer an equivalent word in one of these languages to another.

Thus, *e. g.*, if an Egyptian phonoglyph be found to correspond to P at the beginning of Latin words, and if a corresponding word be observed in the old German, which begins with F or V, but which has no equivalent in Latin, we are entitled to transfer this word to the Latin list of words beginning with P : on the contrary, a Gothic or old German word beginning with P itself would not be entitled to rank with Latin words beginning with P.

Such is the general principle on which the use of Indo-Germanic equivalents, as aids to determine the powers of Egyptian phonoglyphs, is grounded. The applications of it will not be numerous, yet it will be applied; and I have, therefore, thought it right to lay it down here among the other principles which are available to our present purpose. I now proceed to apply these principles to the determination of the Egyptian alphabet, as it existed at Thebes in the age of the papyri.

PART III.—POWERS OF THE EGYPTIAN PHONOGLYPHS.

The order in which I intend to consider the characters is this : I take as my groundwork the alphabet of Chevalier Bunsen, which contains thirty-two letters. I have already said that I consider the values which he assigned to twenty-one of these to be certain. I will first consider these, but very briefly, stating the earliest use of each character that I have observed, and mentioning its proper expletive : I will then proceed to the other eleven characters in the Chevalier's alphabet, which require to be considered with more attention, as their true values admit of dispute : and lastly, I will mention the alphabetic characters in use in the period I have chosen for the standard, which do not appear in his alphabet at all, or which are improperly placed among the syllabic characters, or the letters of late introduction.

1. A *pair of leaves* (I. 1 ; i. 1) with the *quail* for its expletive, as in figs. 14, 19, was used in the first age (L. 8, C. D.) Its value is determined to be I or Y, by transcriptions II. 4 and 7, and, as secondary evidence, figs. 20, 61.

2. A *pair of oblique lines* (I. 2 ; i. 2) had the same value as the preceding, with which it is occasionally interchanged, and the same expletive. Its original use seems to have been as an ideograph for "two," or "twice," implying sometimes that the letter or syllable preceding it should be read twice. The corres-

ponding word was, in the old language, *twi* or *ti* (figs. 60, 58), and the latter, for which *two semicircles* were sometimes used, was employed to express the syllable *ti* in the third period, chiefly in those words where the *semicircle t* was alone used in the earlier ages. In the fourth period this character was used to express I in the other syllables. I have first observed it so used in the name of Queen aHMeS-NefeR-aRI, at the beginning of the eighteenth dynasty. It is rarely used except in short syllables, where in earlier ages the vowel was omitted, and as an expletive.

3. A *quail* or *chicken* (U. 1), has the *pair of oblique lines* for its expletive; it was used in the first age, being found in the royal name in the great pyramid. It is proved to have the power of U or W, from the Coptic equivalents of the words which it commences, such as ⲟⲣϩⲱⲡ, UHeR, a dog; ⲟⲣⲱϩⲖ, Usxeb, to answer; ⲟⲣⲟⲛⲓ, UbeN, to shine. It is also the formative of the plural number; and this, in Coptic, generally terminates in ⲟⲣ, ⲟⲣⲓ, ⲏⲣ, or the like, the last being a contraction for ⲏⲟⲣ. Its proper hieroglyphic equivalent is u. 1, formed from it as m. 1 from M. 1; and this takes the corresponding expletive. With this is habitually interchanged u. 2, which cannot be well referred to any other hieroglyphic character, and which never takes the expletive after it, and may, therefore, include it. I suppose it to be formed, as in fig. 133, from a *quail*, with its legs turned up, as those of the *eagle* and *owl* sometimes are. Whether this letter had ever the power of V will be considered hereafter.

4. A *ball of thread*, or *lituus*, as some have called it (U. 2), is habitually interchanged with the *quail* in hieroglyphic texts of the age of the papyri, and had the same expletive. It had no distinct hieroglyphic character. Chevalier Bunsen says that it was not used at all in the old kingdom; but it occurs on a stele of Osortasen I. in the British Museum, E. I. 80, 5, in two different words in the line.

5. A *square mat* (P. 1; p. 1), used in the first age (tomb of Teta), and having the *quail* for its expletive, is shewn to have had the power of P, by the transcriptions III. 6; IV. 1 and 12: see also figs. 20 and 62.

6. An *owl* (M. 1; m. 1), also used on the tomb of Teta, takes the *arm* for its expletive, and is proved to have had the power of M by transcriptions II. 3, 4, 5; IV. 4.

7. A *sickle* (M. 2; m. 2) is used on the same tomb, and takes the *eagle* for

its expletive. Its value is determined by the Coptic equivalents of the words of which it forms a part; as ⲛⲉ , Ma, truth; ⲛⲟⲩⲉ , Ma UI, brightness.

8. A *half arch*, as Dr. Young called it, or the *frame of a boat*, as Chevalier Bunsen considers it to be (M. 3; m. 3), was habitually interchanged with the *owl* in hieroglyphic texts of the age of the papyri, and has there the same expletive, the *arm*. It was used as a letter unquestionably in the beginning of the fourth age (tomb at Kurna, L. 11). Under the twelfth dynasty I have only met with it once (E. I. 19. 2), between the *leaf* and the *owl*; and it is only in a like position that it occurs in the papyri, unless when marked as ideographic by the vertical line following it. It is a question, therefore, whether it was not originally a syllabic sign for aM. It is, however, common in hieroglyphics to place together two homophones, rather than two like characters, to express a doubled letter at the end of a word. See No. 13, *infra*.

9. A *waved line* (N. 1; n. 1), with the *eagle* for its expletive (sometimes replaced by three vertical lines, implying that the *waved line* should be thrice repeated, by which the ideograph of water, *Na*, was formed), represents N, as the transcriptions III. 1, 3; IV. 2, 3, shew. It was used in the first age, on the tomb of Teta.

10. A *vase of water* (N. 2; n. 2) was homophonous with the preceding, but was properly used in a different set of words. This propriety of spelling is, however, sometimes violated, and thus the characters are abusively interchanged; e. g. the pronoun "I," Coptic ⲁⲛⲟⲕ , was properly written with N. 2; but Champollion quotes it written with N. 1, in a Theban inscription of the standard age (Gr. p. 251). It was thus confounded with the preposition and affix "to thee." In like manner the vague possessive article after plural nouns was properly written with N. 2, followed by a vertical line, denoting its being to be pronounced as if it was an ideograph, *i. e.* as *Na*, "water;" but in one of the papyri (Pl. 16, l. 5) the *waved line* and *eagle* are twice substituted for this, which would be properly the definite article before a plural noun. That it could not have been intended for that here is evident from one of the nouns which follows it being a feminine singular. The expletive of this character is the *quail*, and in lieu of adding this the character was sometimes trebled. This character is found on the coffin of Menkare in the first age, and there is no reason for doubting that it was there used as a letter.

11. An *under-crown*, the lower part of the $\psi\chi\epsilon\upsilon\tau$ (N. 3), is habitually interchanged with the *waved line* in the hieroglyphic texts of the age of the papyri. It had the *eagle* for its expletive. I have never seen it in any text older than the fourth age; but Chevalier Bunsen says "in the twelfth dynasty only as a preposition (*Mag. Louvre*).” The corresponding hierograph was only used ideographically.

12. A *mouth* (R. 1; r. 1), used on the tomb of Teta in the first age, appears to have had the power of R in I. 1, 3; II. 2, 3, 6, 8, 9; III. 2, 6, 7; IV. 1, 2, 3, 4, 8, 11; while it had that of L in II. 1, 5; III. 3; IV. 12. These sounds seem not to have been distinguished at Thebes in the age of the papyri. Its most usual expletive was the *vertical line*, indicating that it should be pronounced as the word signifying "mouth," in Coptic, *po*. This is sometimes, I think, replaced by the *leaf*, as in the syllable TR_a (fig. 77), which occurs frequently, and has commonly, in the MSS., a *palm branch* after it as a determinative of sound. I have already referred to this syllable in the first part. That it was pronounced T_eR, the leaf at the end being omitted, appears from two considerations, in addition to what have been already adduced. The name of such a branch was, in Coptic, $\tau\alpha\rho$; and the Greek transcription of a word in which this syllable is known to be final occurs in Mr. Gray's antigraph in the British Museum, *Αμουρασουθηρ*. There is a character like i. 2 frequently written over the hierographic form of this letter, when attended by its expletive (see fig. 11), but it is merely used to fill the void space.

13. A *lion* (R. 2; r. 2) is used in several words on monuments of this age, which in earlier times were written with the *mouth*; frequently both characters occur, but when they do, but one should be sounded. The use of the double letter appears to be to mark that the word was terminated, and, if it had more than one syllable, that the last was accented. Words very often terminate with N. 1, followed by N. 2, frequently attended by its expletive, as UteNN_u (fig. 134), to be pronounced without the last expletive. Champollion thought that this was peculiar to words ending in N, and that it marked it as to have a nasal sound. But we meet with the same in the case of other letters, as SaXX (fig. 135), from E. I. 86, 9, one of the earliest steles of the twelfth dynasty; aMM, already mentioned under No. 8; and MasxeRR_u, Pap. Pl. 15, l. 7 (fig. 136). That the two Rs in this word are equivalent to but one letter, and that an R, not an

L, is proved by the form of the Hebrew word which corresponds, namely, מִשְׁחָר, *Mishxār* (Ps. cx. 3). Both the Hebrew and the Egyptian word signify "the dawn of the morning." This letter had for its usual expletive the *vertical line*; but in place of that we have here the *quail*. The name of the lion, then, was expressed by the *mouth* or *lion*, and the *quail*, RU, sounded probably LeW or LeV, and connected with the Greek λεϜ-ων, Bohemian *lew*, German *Löwe*, and with the Hebrew לַבִּיא. Champollion gives the name, with a *leg*, in place of the *quail*, which will be worthy of notice when we come to consider the power of that character. The *lion* seems to have been first used as phonetic in the fourth age, and it had at first apparently a syllabic power. In the reign of Thothmes III. I have only met with it in the word XaLeV, fig. 21.

14. A *bent line*, apparently a *chair back* (S. 1; s. 1), expresses S. That it had this power, and not that of SH, is proved by its being represented by the Hebrew ס, as well as by ש, as in שַׁרְמִס, and, at a later period, in פֶּרֶס, Persia. It is used in the first age on the tomb of Teta, and has for its expletive the *semi-circle*, No. 17.

15. A *broken line* (S. 2; s. 2) is habitually interchanged with the preceding character; it has the same expletive, and is used on the same tomb.

16. The *bent rope*, resembling a *sugar tongs* (T. 1; t. 1), has for its expletive the *quail*, and is used on the same tomb. Its power appears from the transcription II. 2, fig. 25, and from its being habitually interchanged with the *purse*, which appears from the Greek transcriptions, IV. 1, 8, 12, to have had the power of T. The Coptic form of the feminine article, and of the affix of the second person plural, as well as of several other words, shew that this letter was T, and not TH, though in Greek transcriptions of the Ptolemaic period it was frequently expressed by *θ*.

17. A *semicircle* (T. 2, t. 2) is interchanged with the preceding in the affix of the second person plural, the demonstrative pronoun feminine, and the participial affirmative; it must, therefore, have had the same power. This character is, however, not always phonetic. It is sometimes a sign of the feminine gender, which is not to be pronounced. But it must not be supposed that it is always so at the end of words; it may sometimes be a phonetic formative of the feminine gender; and it is certainly to be sounded as an affirmative of verbs, constituting the infinitive mood or noun of action, and also the noun expressing

the agent. In this last case, if not in the others also, the vowel I is to be sounded after it ; and, though not expressed in the first age, it began to be so in the latter part of the second, either by the addition of the *two oblique lines* (I. 2), or by the duplication of the *semicircle*. The latter mode is, however, ambiguous. On the tomb of Teta the *doubled semicircle* occurs ; but the second one is here a sign or formative of the feminine gender, not an equivalent for the vowel I. In the titles of Amenemhe I. (B. E. H. 10, 3), three *semicircles* are used to express the vowel U (fig. 137), as in a subsequent part of this inscription two *semicircles* appear to be used for I. The word here represented is elsewhere written as in fig. 138. This inscription is from the Cosseir Raad, and was probably the work of some ignorant person. A semicircle, followed by three small lines, equivalent to three *semicircles*, is elsewhere used for TU, as the two *semicircles* are for TI : but the addition of another *semicircle* seems unjustifiable. The expletive of this character was the *quail* ; and it is used, both as an ideoglyph and a phonoglyph, on the tomb of Teta.

18. A *twisted rope* (H. 1 ; h. 1), represents H, as appears from the Coptic equivalents to the words in which it occurs, and from the circumstance of its being passed over in Greek transcriptions, as in Ἄ-μοσις, Ἄ-πρίης, Νεκτανεβης, all which names are written hieroglyphically with this character in the middle. Had it been a stronger aspirate than the H, it would have been expressed by the Greek χ ; and had it been a *hamza*, or smooth breathing, it would have been omitted in the Coptic ; whereas it appears in οοϩ, the moon, aaH ; εϩε, a cow, eH ; κοοϩε, an egg, SUH ; τϩτ, lead, teHTI ; ϩβωc, clothing, HbS, &c. The expletive of this character is the *quail*, and it is used in the first age, on the tomb that has been so often mentioned.

19. A *plan of a house* (H. 2 ; h. 2) also represents H. This appears from its use in the transcriptions IV. 1, 2, and at a later age, fig. 20 ; also from comparing HebNI, ebony, which begins with this letter, with the Hebrew םן ; and RUHa, fig. 36, with the Coptic ποϩε, evening. This character is rarely interchanged with the preceding, being appropriated by usage to distinct words, as we have seen that N. 1 and N. 2 were ; sometimes, however, it is interchanged with it, as in figs. 36 and 37, and it must have had the same power. Its expletive was the *eagle*, and it was used in the first age, on the tomb of Teta.

20. A *basin* (K. 1 ; k. 1), used on the coffin of Menkare, in the first age,

expressed K. That it corresponded to the Hebrew כ appears from transcriptions II. 3, 6, 8; III. 1; IV. 9; as well as from the correspondence of the pronominal affix, which this letter represents, with the Hebrew כ; and of the pronoun of the first person, aNeK, with the Hebrew אנכי. That it represented the hard sound of this letter when dageshed may be inferred from its being used to express the Hebrew כ in transcription II. 5, which a letter with the power of *kh* could scarcely be; from its being used to express the first letter of the name of the Persian king Καμβύσης; and from the transcriptions which Herodotus gives of the names of Egyptian kings, in which it, or a known homophone of it, occurs, viz. Σαβακῶν, Ψαμμητικός, and Νεκός. The transcriptions of Herodotus, whose informant was a Theban, are much more to be depended on than those of later writers. The expletive of this letter was the *eagle*.

21. A *sieve* (X. 1; x. 1) was used in the first age, being the initial letter in the royal name found in the great pyramid, which Herodotus represents by Χέοψ. Its value, as equivalent to the Hebrew ט, appears from transcriptions I, 2, and IV. 7, as well as from this Greek transcription, and from certain Coptic equivalents which have been already noticed, in which it is represented sometimes by ט, SH, and sometimes by ט, H, at Thebes, and ט, KH, at Memphis. The latter harsh sound, if it were the original power of the letter, might be softened into the two former; but neither of the two former could be corrupted into *both* the others. The expletive of the *sieve* was the *pair of oblique lines*.

I have considered these twenty-one characters in the order in which they are found in Chevalier Bunsen's alphabet. I agree with him as to their powers, as he did, for the most part, with Champollion; and I cannot conceive the possibility of any person seriously disputing any of them. I now pass to those as to which a doubt may reasonably be entertained, whether the values heretofore assigned them are correct; and I will endeavour to remove this doubt, either by adducing new arguments to establish the values given to them, or, as will more frequently be the case, by shewing that their true values were different. The remaining characters of the Chevalier's alphabet are eleven, and I do not feel it necessary to consider them in the precise order in which they occur there, though I shall do so for the most part.

I begin with the sort of *plant* which is used on the Rosetta stone, and other monuments subsequent to this, to represent M. Of its power there can be no

doubt entertained; but I have never met with it as a phonoglyph in the age of the papyri, nor indeed till the eighth period. On what grounds Chevalier Bunsen has given it a place in the ancient alphabet I cannot conjecture. I, of course, reject it altogether.

22. An *arm* occurs as a letter in texts of all ages, from the coffin of Menkare downwards. From its corresponding to a vowel in Greek transcriptions and in Coptic words, aaH, ooϩ, the moon, and many others, it was classed by Champollion among the vague vowels, and by Chevalier Bunsen is made an A. It appears, however, that it expressed a sound which was wanting in the Greek alphabet, as well as in the Coptic, and which had consequently been lost during the ages of foreign dominion which preceded the introduction of the Coptic alphabet. In transcriptions I. 1, II. 1, 2, and III. 1, it corresponds to the Hebrew γ , as it does apparently in the verb signifying "to travel in a foreign country;" NaI, connected with the Hebrew נָע, "to wander." This verb occurs Pap. Pl. 107, 6 (fig. 139), eMNaI, "in the act of wandering." The objection to this view of the power of the *arm* is, that it occurs in many foreign words where we do not find the Hebrew γ ; but I reply that we must dismiss from the account all those words in which it follows the *owl* or *half arch*, as MaLeK (fig. 61), for מַלְךְ, because it is here a mere expletive; and that, when this is done, no word can be produced in which it can be *proved* to occur without having a γ to correspond to it. Champollion gives, indeed, a word beginning with this letter, as aRMa, אֲרַם, "Assyria," Gr. p. 501; but the true reading is עֲלַמָּא, "Persia." This character is not often followed by an expletive, but has sometimes a *vertical line* after it, and sometimes the *quail*; compare Pap. Pl. 21, l. 5, and 135, l. 9; whence we may infer that the old word, signifying an *arm*, was of the masculine gender, and consisted of the *arm* followed by the *quail*. I propose to use the Hebrew *yayin* to express the compression of the larynx which it represented. The name of an *arm* would then be γU . This letter occurs in the alphabet $\gamma 1$; $\gamma 1$. In hieroglyphic writing, a character frequently follows this letter instead of an expletive, which had no phonetic or ideographic value, but was merely used to fill a void space, as in the hieroglyphic figure.

23. A *leaf* is considered by Champollion and Chevalier Bunsen as equivalent to the *arm*; but I do not find them interchanged in ancient Egyptian texts; and in transcriptions the *leaf* is represented by the Hebrew א, while the other is,

as we have seen, represented by *y*. This appears from III. 2, and IV. 6. That this letter, when initial, represented the *hamza*, or sound produced by opening the larynx, and not the vowel A, appears from its being frequently omitted at the beginning of words, which a vowel would not be likely to be; from its being represented in Coptic words by all kinds of vowels, as in ⲁⲛⲕ, "I" (Heb. אָנֹכִי); ⲉⲗⲉ, "a cow;" ⲙⲣⲓ, "wine;" ⲟⲩⲉ, "thirst," also written ⲉⲓⲃⲉ and ⲓⲃⲓ; and ⲟⲩⲉ, "a stone;" from its being interchanged, when accompanied by a *mouth*, R, with the *eye*, which is known to represent the word ⲓⲣⲓ (see Pap. Pl. 161, l. 8, 9, *et passim*); and from its being followed by different vowels, when but one syllable seems to be expressed. It takes for its expletive the *sitting figure touching his mouth*, implying that its name was sounded as the interjection used in addressing a person, which we must presume was O. For this *sitting figure* the *quail* is substituted, and some might think that the *leaf* and *quail* then constituted a diphthong, as *a* and *u*, when united, express *o* in Sanscrit. But I cannot accede to such an opinion. I consider this combination equivalent to the Hebrew אָ; and we shall presently see reason for thinking that the *quail* represented O as well as U, the Egyptians, like the ancient Hebrews, not distinguishing these sounds. I represent this letter by a Hebrew *aleph*; it appears in the alphabet as א 1; * 1. At the end of words I conceive that it was sounded as *uh*, or as our *a*, when unaccented, generally is. Thus, Τⲛ, the name of the *purse*, should be pronounced *Tuh*, or as *Tur* would be pronounced by most persons in London. This character is used in the first age on the tomb of Teta.

24. The *eagle*, (A. 1; a. 1) is considered by Chevalier Bunsen as equivalent to the two preceding, but in good texts no two of them are interchanged; and in their use as expletives they are uniformly placed after different letters. I cannot then consent to class them together; and as the two others have been appropriated to different values from that of the vowel A, and as we cannot conceive that this was wanting in the Egyptian language, I give this value to the *eagle*. It is worthy of notice that it is used to express the initial letters in the names of Artaxerxes, Alexander, and Arsinoe, and the two alphas in the name of Κλεοπάτρα, as written on the pronaos at Edfu, where it is expressed by nine characters, evidently intended to correspond to the nine Greek ones. It is not used in ancient transcriptions, except as an expletive. In the transcription of an Egyptian word in which it occurs, I. 5, the Hebrews represented it by א, but this is no

objection to the view that I advocate ; for the Hebrews could not otherwise express a word beginning with a vowel. Besides, according to my view of the matter, the *leaf*, which is properly \aleph , is necessarily understood before the *eagle*, and also before the letters having the powers of I and U, when not used as Y and W. This character does not happen to occur on any of the few monuments of the fourth dynasty that have been published ; but, as no word occurs on these monuments which was in after times written with this letter (which, when not an expletive, is far from being a common one), we are not warranted to infer, as in the case of I. 2, U. 2, &c., that it was not yet introduced into the alphabet. Its power, probably, ranged between A in *father* and the same letter in *fall*. Its expletive was the *quail*, and its name was, consequently, pronounced AW, i. e. *ow* in *cow*, or perhaps AV. This was, perhaps, the ancient name of this bird, though we are not bound to suppose it so ; and as the Latin *aqua* represented the *ap*, *av*, and *aw* of cognate languages, so this name may have been etymologically connected with *aqu-ila*. Before I dismiss this letter, I think it right to state an objection that has occurred to me against the value which I have assigned it, in agreement with Chevalier Bunsen, but for which I should have classed it among the letters whose values were indisputable. In the word ATP, “to carry or be loaded,” of which it is the first letter, it corresponds to a Coptic word, $\omega\tau\pi$, beginning with ω , and that it had this value in this word in the Ptolemaic age appears from Greek transcriptions, in which this word, when an element in proper names, is represented by $\omega\phi$ -*is*, $\omega\phi\theta$ -*is*, $\omega\theta$ -*is*, whence it may be argued that this was not confined to the vowel A, but might represent any vowel, and must, therefore, be equivalent to the *leaf*. Surely, however, when the consonants have undergone so much corruption in these transcriptions, we may admit that the vowels may have been corrupted too. The change from the vowel in *ought* to that in *oat* is not a very great one, and we know that, in the later ages of the Egyptian language, the vowels were much altered. The Thebans, we know, used both $\alpha\pi\theta$ and $\omega\pi\theta$ for the verb “to live ;” and I mentioned, not long ago, that $\epsilon\iota\theta$, $\iota\theta$, and $\omicron\theta$ were all used to signify “thirst.” I consider it far less improbable that all the words above given were formed by corruption from ATP, the vowel pronounced as in *fall*, than that, in the many words beginning with the *leaf*, followed by the *eagle* and its equivalents, we should be obliged to pronounce a double vowel, although I admit that, in many cases, we ought to do

so. Besides, the duplication of characters to represent an added I, and the triplication of them to represent an added U, of which there are unquestionable instances, seems to intimate that these were the second and third vowels, and, if so, we must have the *eagle* for the first: for I have already shewn that neither the *arm* nor the *leaf* is properly a vowel.

25, 26. A *pendent flower* (U. 3; u. 3), and a *leg* (U. 4; u. 4), may be advantageously considered together. They are both used in the first age, occurring on the tomb of Teta. The former had for its expletive an *eagle*, and the latter a *quail*, as the *quail* (U. 1) had for its expletive the *pair of lines*; thus, their names were U_I, U_A, and U_U, the letter preceding the expletive being in all instances pronounced as W, if not as V; for the Egyptians at Thebes, in the age of the papyri, seem to have confounded the sounds of *w* and *v* as well as they did those of *r* and *l*. I will first establish the value of the *pendent flower*. In the names of Ptolemy and Cleopatra it is clearly used to express the vowel O, as it was in the name of King Osorkon, which Manetho or his copyists have erroneously written *Οσορθών*, of the twenty-second dynasty; but we have a clearer instance of its use as a vowel in the age of the papyri. The name of a foreign country occurs in the great inscription from Medinet Habu (B. E. H. 44, col. 16), as in fig. 140; the name is MYSXA UASXA, and clearly corresponds to *Μόσχος*, the singular of *Μόσχοι*, Herod. 7, 77; just as, in the name of King Darius, Burt. E. H. 3, *et al.*, the *quail*, followed by the last effective letter in this word, expresses the termination OS, for which *quail* this very character is substituted at the great Oasis. It is quite evident that, in order to render the pronunciation of this name at all conformable to that of the Greek transcription, *all* the expletives must be rejected, and the five syllables which it apparently contains be thus reduced to two. Here, then, we have this character representing a vowel in the age of the papyri; and it clearly represents W or V, rather than U, in its name, and in other words where it occurs before a vowel. Thus, in fig. 141, which is also from Medinet Habu (B. E. H. 43, col. 11), whether we read the word with or without the expletive, we must sound the initial letter as a consonant; the concurrence of vowels would be intolerable, to say nothing of the correspondence which the word thus has to the Latin *vi-a*, of the same signification, if we read it U_AI without sounding the *eagle*. The *quail* and the *pendent flower* have thus like powers, each being sometimes a vowel and sometimes the consonant W. They are seldom inter-

changed, being used in different words for the sake of distinction; and yet I think I have met with instances. There were three common words, signifying animals of the ox kind, all generally followed by the same determinatives, which I omit, viz. $\aleph e H a$, Coptic, $\epsilon \rho \epsilon$ (fig. 142), which was used without distinction of sex; $U a H$ (fig. 143), corresponding to the Latin *vacca*, a cow; and $\aleph a U$ (fig. 144), used for the male, and sometimes for the species generally. This last is sometimes written with an expletive at the end, the *eagle*; and, not being aware of the nature of expletives, Mr. Birch read it, on this account, *aua* or *awa*, but it ought to be sounded as *a-u*, or perhaps as *av*. Now, in the papyri, another word is used for "horned cattle," which I take to be a variation of this. It is that represented in fig. 145 (Pl. 4, l. 7), and is read $\aleph A U t$, the pronunciation of which is identical with that of the preceding, if the *lituus* and *pendent flower* be equivalent.

The equivalence of the *leg* and the *quail* appears from direct interchange, as in the word signifying "a harp," which is written with the *lituus*, U. 2, at the commencement, in the tomb of Rameses III. (Wilk. Pl. 13), and with the *leg* (Pap. Pl. 23, l. 2), as well as in Wilkinson's wood-cut, 184, which is said to be from an ancient tomb near the pyramids. The name of "a lion" appears, too, from what has been said under No. 13, to have been written with the *quail*, while Champollion gives it with the *leg*. In this instance, as is usually the case, he does not say where he found the name, so that we cannot be sure that the form he gives is of the proper age; but we have, at any rate, the *quail* of the papyrus corresponding to the Hebrew \aleph in $\aleph \aleph \aleph$, and to the Coptic ϵ in $\lambda \epsilon \epsilon$. It is worthy of special remark, too, that in the transcription II. 6, $b P R u K \Delta b v T \aleph$ (fig. 102) = $\aleph \aleph \aleph$, the *leg* with its expletive is used to express the Hebrew \aleph in the feminine plural, which not only the authority of the Masoretes, but that of the LXX. ($\rho \omega \beta \acute{\omega} \theta$), and of Plautus (*valonuth*), require us to pronounce as a vowel. There are instances, again, in which the *leg*, in old Egyptian words, is replaced by $\sigma \tau$ or \circ in their Coptic equivalents, as *teb* (fig. 146), Pl. 34, l. 8, $\tau \circ \sigma \tau \epsilon$, *to-we*, "shoes;" where note that the *semicircle* and *pair of oblique lines* sometimes added to this word, are the sign of the dual number, here denoted by the duplication of the determinative sign; but whether the word, with this addition, should be read *towe-twi*, or *towe-towe*, or *towi*, or *towu*, is yet undecided; one of the last suppositions appears the more probable from the transcription I. 5, compared with fig. 96. Again, $U b N$, "to shine," (fig. 149) corresponds to the Coptic $\sigma \tau \circ \epsilon \rho \tau$,

though the latter is used as a noun, and the former generally as a verb. Here the *o* in the middle of the word, pronounced *W*, represents the *leg*. The word for "harp," already noticed, written with the *leg* in the papyrus, is in Coptic ⲟⲣⲱⲛⲧⲏ. Other instances will be adduced hereafter, in which the *leg* is *implicitly* contained in words that appear, from their Greek transcriptions, not to have had it sounded otherwise than as a *W*. Such are the word for "son," transcribed *σε*, and etymologically connected with *vi-ós*, and *σαί-s*, the name of a town. That the *leg* is, however, in many instances, equivalent to our *V*, is indisputable,—see transcriptions, II. 3, and IV. 7; nor could it have had the value of *B* in conjunction with another letter, as in II. 6, 7, and even alone, as in II. 1, and frequently in the later ages, unless it had sometimes, at least, more of the nature of a consonant than our *W*.

I conclude, then, that these four characters must be classed together, as *U*, *W*, *V*, just as the *lion* and *mouth* are classed together as *R*, *L*. In transcribing Egyptian words, it will be proper to write for any such letter the first or leading value, if there be no mode of deciding which was its value in that particular word which is transcribed, or if it can be determined that the first was its value; but to substitute one of the latter values, if there be ground for coming to the conclusion that this was the value which it had in that word. Thus, I would transcribe the word, fig. 149, *UWeN*, not *UUN*; the name of the "lion," contained in fig. 22, *LeW* or *LeV*, not *RU*. Probably, the consonantal sound of this letter was that of the German *W*, which is, as I understand, intermediate between our *V* and *W*, produced by a contact of the lips alone, not of the lower lip and upper teeth. See *Rapp. Phil. d. Spr.* vol. i. p. 59, where he maintains that this was the sound of the Greek β in later times, as it is in the modern Greek. It was probably also that of the Latin *V*.

27. A *cerastes*, or *horned serpent*, was in use from the earliest period as a letter, occurring in the royal name found in the great pyramid. It is here followed by the *quail*, apparently as its expletive, which it may have been originally. But when the *pair of oblique lines* was introduced into the alphabet, it became the expletive of this letter. Its power has now to be investigated, and it requires to be so with great attention. In the transcriptions of Hebrew words it occurs once only, II. 8, where it replaces the Hebrew \beth , probably answering to our *F*, but possibly to our *P*. This is consistent with the letter having either of these values; but it is also consistent with a third supposition, namely, that the

Egyptians having no letter exactly corresponding to F, used this as an approximation to it; and, in favour of this supposition, I refer to the transcription IV. 1, where F is represented by a combination of P and H. To use such a combination in the middle of a word would have been objectionable, because, in that case, it would naturally be read *kap-har*, not *kafar*. This transcription, too, appears to me to furnish a very powerful, if not a conclusive, argument against this letter having the power of F, as Chevalier Bunsen supposes. If that had been its value, it would have been used in the name *Frat*, instead of a combination of two letters. Again, it is highly improbable that a letter which occurs so seldom as the *cerastes* does at the beginning of words, should not have homophones; but if it be not either V or P it would have to stand alone, or along with a few rare letters, or probably syllabic signs. Chevalier Bunsen gives it no equivalent letter, and only three syllabic signs and *mischbilds*, two of which are used in the same word. With all these, including the *cerastes* itself, there are not more than about half a dozen words commencing. Now, we cannot suppose that this could be the case if it had not homophones. I consider it, therefore, as certain that it was equivalent either to the *quail*, at least with its consonantal value, or to the *square mat*; and that it was used to express the F in *Kafar*, not as having that power, but as the nearest possible approximation to it that the Egyptian alphabet afforded.

To decide this question, we naturally recur, in the first instance, to Greek transcriptions; but, unfortunately, these are not free from ambiguity or uncertainty. In the name of the builder of the great pyramid, Herodotus writes the accusative *Χέοπα*, giving the *cerastes* the value of Π. It is true that he may have been told by his informant that the name was *Χέοψ* in the nominative, which would be the only way in which *Xeov*, with the Greek termination of the nominative, Σ, immediately added, could be expressed; and he may have taken down this nominative, and at a subsequent period declined it erroneously. But, however this evidence may be capable of being set aside, it certainly cannot be adduced in favour of the letter having the power of V. Manetho writes the name *Σουφίς*, which would apparently favour this last supposition; but then, again, it might be objected that *he* gave the pronunciation of the people of Lower Egypt, who expressed the P of Thebes, in the article and elsewhere, as PH or F. This transcription is, therefore, indecisive; and so, for the same reason, is

that of $\kappa\upsilon\phi\iota$, the compound perfume which is so frequently mentioned. The word signifying "good," which I have already mentioned, is transcribed at Thebes Νεφερ and $\nu\omega\phi\rho\iota\varsigma$: but to this also it may be objected that the ϕ was used for π , in consequence of the influence of the ρ ; and the same objection might be made against any inference being drawn from the $\text{Χεφρη}\nu$ of Herodotus, supposing it to be generally admitted (which, however, Chevalier Bunsen denies), that the ϕ in this name represents the *cerastes*. There are other transcriptions to which this objection would not apply, if they were admitted to be correct. Thus, Diodorus gives the name of this last king $\text{Χαβρ}\acute{\upsilon}\varsigma$, apparently representing the *cerastes* by β , the remainder of the word being the representation of the name of "the sun," Reya. But Chevalier Bunsen denies that the king whose name contains the *cerastes* was the successor of Cheops. Again, I have myself no doubt that, in the name of the last of the Pharaohs, the *cerastes* was represented by a β . I consider the name to be NeXTe-NeV, "lord of victory," of which the Greeks made $\text{Νεκταβε}\beta\text{-}\acute{\omicron}\varsigma$, the *cerastes* being the complementary letter of the *basket*, which signifies "lord," or "all." This last part of my supposition is, however, denied. Others make the *cerastes* to be the pronoun of the third person singular (in what sense used I cannot conceive), and read Nebf. They suppose, too, that this was not the name of the last Pharaoh, but of his next predecessor but one, which I, on the contrary, take to be Horus NeXT-eN-HeVI, the conqueror of Hevi, i. e. the Great Oasis, the $\text{Νεκτα}\acute{\epsilon}\beta\eta\text{-}\varsigma$ of the Greeks,—a different name, though the distinction has not been of late attended to. It is this king whose sarcophagus is in the British Museum. It would seem, then, that the utmost that the Greek transcriptions can effect is to create a probability in favour of one or other of the conflicting values; and this probability may be differently estimated by different persons; we must, therefore, have recourse to the analogies of other languages. These, I think, are decisive as to the point.

In Coptic, the *cerastes*, when initial, is represented by the letter $\epsilon\eta$ in $\epsilon\eta$, to carry, and $\epsilon\eta\tau\tau$, a worm; it is so represented also in the affix of the third person singular masculine, as well as in $\epsilon\omega\epsilon\eta$, a serpent, and other words. Indeed the form of this letter is a strong argument that it is equivalent to the *cerastes*, it being evidently derived from that character. Now this Coptic letter is fre-

quently interchanged with the β , the power of which is admitted to be V. The three words above quoted are all found written in Coptic with this letter, as well as with ς ; and we may, therefore, infer that the latter had the power of V, and not P, for we never find it interchanged with π . It may be said that the ς must have had some different value from β , or it would not have been introduced into the Coptic alphabet; and Dr. Schwartze supposes this value to have been that of F. We have seen, however, that the *cerastes* could not have had this value, but must have been equivalent either to the V or P class of phonoglyphs. It is much the most probable way of accounting for the introduction of ς into the alphabet, to suppose that it was intended to represent our V, or rather the German W; while β was to have been confined to express the sound of B in words of Greek origin, and words like $\beta\Delta\pi$, a boat, which commenced with the sound of our English B. If so, however, the intention was not carried out, and the β is used ambiguously, sometimes representing this its proper sound, but more frequently the German W, as in $\beta\Delta\zeta$, a saw, where the *quail* was used in the hieroglyphic writing; in $\beta\kappa\sigma$, a hawk, where the *leg*, and in $\beta\Delta$, a palm-branch, where the *cerastes* replaced it.

Again, it appears from the Hebrew, that the *cerastes* represented V and not P. The affix of the third person singular masculine was expressed by this character in the old Egyptian language; but this was \daleth in Hebrew.

Lastly, whatever evidence is furnished by Indo-germanic affinities is to the same effect. The V class of phonoglyphs corresponded to V in Latin; as in VI, a way (fig. 141), vah, a cow (fig. 143), connected with *via*, *vacca*; while the P class corresponded to P in Latin, as in Pet, a foot, PeSt, a back (whence post), Pet, the sceptre indicating authority (connected with *pote*, *πόσις*, &c.), and PeXXA, i. e. PeX (fig. 147), a lioness (Germ. *fähe*, a female beast of prey, the Latin word corresponding to which should begin with P). This last is equivalent to the word which Champollion, guided by the mistaken analogy of $\beta\alpha\sigma\tau$ in *Bouβαστis*, read Pasht, and which has since been read Paxt, or Pext. The *semicircle* is, however, a non-phonetic sign of the feminine gender; at least it is clearly written as such,—Pap. Pl. 145, l. 3; 156, l. 5; 157, l. 3; and 160, l. 2,—being followed by the *egg* (fig. 148); and the few instances in which the *semicircle* is accompanied by its expletive, or repeated before the *egg*, are probably errors. This was not the true name of this goddess, which was probably Menhi, but an appella-

tive or surname, "the Lioness;" she being represented as a lioness, or as a woman with the head of a lioness. The goddess of Bubastis (see fig. 89) was represented as a cat, or as cat-headed. It remains to be ascertained whether any of the words commencing with the *cerastes* or its equivalents have Indo-germanic affinities. Now I think it obvious that the German *wohn-en*, A S, *wun-ian*, to dwell, is etymologically connected with feN-TI, as Ch. Bunsen writes the word (fig. 150) a dweller. The two first letters of this word I consider radical, the two last affirmatives. In conformity with the principles laid down in the preceding part, this affinity leads me to affix the value V to the initial character in this word; but that character is a *nose*, and the name of a nose is hieroglyphically written with the *cerastes* (fig. 151), Sharpe E. I. 77. 3; a sure proof that this peculiar letter had the same value.

In the Turin copy of the Todtenbuch, the *cerastes* is actually used for the *quail*, c. 149. 13, 14, 25; a corrupt mode of writing, I admit, but one which could not have been introduced if these characters had not belonged to the same class. Again, the *lituus*, or a character not distinguishable from it, is used for the affix of the 3 p. s. m. Ch. Gr. pp. 260, 278, 279. All these considerations lead me to the conclusion, that the *cerastes* was equivalent to the *quail* and its homophones, in their consonantal value, at least. I, therefore, place it in the alphabet as U 5; u 5.

28. The *hand* has been considered by all previous writers as the equivalent of the semicircle; and I acquiesce in this, placing it as T. 4; t. 4; yet I am by no means sure that I am right in so doing. It seems clear, indeed, that they are both represented in the same manner in Coptic words, and that both have the same class of Indo-germanic equivalents. If, then, they differ, it is not as T and D, or TH, but as T and the strengthened sound which the Hebrews represented by ט. This could only be proved by Hebrew transcriptions; and apart from these it could only be disproved by clear instances of the interchange of the *hand* with the *semicircle*, or its undoubted homophones.

As to the former of these points, there is only the transcription IV. 10, in which ט occurs, and it is there represented by the *hand*; while in the many instances in which ט occurs, it is always represented by the *purse*, T 3, or by T 1, or T 2. This is certainly calculated to raise a doubt as to the equivalence of the *hand* and these letters. If the Egyptian equivalents of פוטי in the name of

Joseph's father in law, and of טון , $\acute{\omicron}\theta\acute{\omicron}\nu\eta$, a kind of cloth, could be ascertained, and if both of these were found written with the *hand*, sufficient weight would be attached to this argument to induce me to distinguish the letters, but at present I cannot feel myself justified in doing so.

With respect to interchanges, I know no instance of a native word being written sometimes with the *hand*, and sometimes with one of the other characters. In the few instances in which this interchange is supposed to have taken place, I feel satisfied that distinct words, of different significations, have been confounded. Thus LeT with the *bent rope*, signifies "people" (*Germ. leute*), but with the *hand* "a race," "to engrave," &c. It was then probably pronounced RoT. This is not a conclusive argument in favour of the diversity of the power of the characters, as the same distinction is observed between N 1 and N 2, H 1 and H 2, the phonetic equivalence of which is unquestionable. Still it is not calculated to remove the doubts raised by the Hebrew transcriptions; and it should be particularly noticed that the *purse* is, for convenience of grouping, frequently interchanged with the *bent rope*, T 1; but in no pure Egyptian word with the *hand*. In a foreign word, indeed, it is interchanged; the ט of טנרל , which is represented by the *purse* in fig. 98, from the papyri, being represented at Karnac by the *hand*. The representation of a foreign letter, which had no proper equivalent in the language, by two letters not perfectly homophones, though as similar as ט and ת , will not be considered unlikely to have occurred. On the other hand, on the tomb of Teta, in the British Museum, the name of the principal deceased is written with T 1; while that of another member of his family is written with the *hand*. It is not probable that different names should be used in the same family so like as תרתא and טטא .

To complete the evidence on both sides I should observe, that a peculiar form of the letter A is used before the *hand*, as in ATN, "form," "to form," ATsx, the name of a city, and a few other words; while the *eagle* is constantly used before the other forms of T, as in AT, "the back," ATP, "to carry," &c. This is a point which ought not to be overlooked.

I now leave the question to the judgment of others. My own opinion is, that while there is no positive proof that the *hand* had the value of ט , as distinguished from ת , T, which was that of the *purse*, *bent rope*, and *semicircle*, there are

grounds for suspecting that it had, and no positive proof to the contrary.* The *hand* was in use in the first age; and had for its expletive the *pair of oblique lines*, which may have been in this case a sign of duplication, as the Coptic name of the hand is 𐤏𐤏𐤏.

29. The question which arises respecting the *quadrant* or *knee* (Q 1; q 2), is similar to that which respects the *hand*. Is it equivalent to the *basin*, as it has been considered by Chevalier Bunsen and others; or is it a strengthened letter equivalent to the Hebrew ק, and the Arabic ق? In this instance I adopt the latter alternative; I am induced to do so by the transcription II. 9, and by I. 3 and 4, though these are of a later date. I admit that the transcription III. 4, would lead to an opposite conclusion; namely, that the Egyptians did not distinguish between the 𐤏 and ק; but we are to recollect that this is the name of a town far removed from Palestine, mentioned once only in the Bible, and that in one of the later books; and that, though it is written in this place with 𐤏, it is written in Arabic with ق. I cannot allow this doubtful testimony to weigh against the clear ones furnished by the names of two Egyptian Kings, and a common Syriac word, in all of which the characters before us represents ק; while, except in the name כרכמיש, it never represents 𐤏. Besides, I have never found this character interchanged with the *basin*, or with any of its known homophones.† I grant that further evidence of the value of the character would be desirable; but in the meanwhile no harm can result from writing for it Q. Its expletive was the *eagle*, and it was used in the first age, on the tomb of Teta. I allude to the word QeLS, burial. The character which occurs in the word for “bread,” and which has been supposed to be this, is an ideograph, representing a *loaf*. That word should be read 𐤏eT, the initial *leaf* being, for the most part, omitted.

* In the interval between the writing and the printing of this passage, my doubts as to the perfect equivalence of the *hand* to the *bent rope* and *semicircle* have been almost entirely removed.

† Since this was written I have observed that the name of an Asiatic country is written, Pap. Pl. 51, l. 4, QAHAQ, with this character at the beginning and end; and on a stele in the Louvre, of the age of Thothmos III, KaHaK, with K l. I cannot identify this name with any known one; and indeed the only conjecture which appears to me at all plausible is, that it represents Khaq, خاق, which I have, I think, seen somewhere as a name of Tartary. In the Papyrus, this people are joined with the Moskush and three other nations (one of which, however, is the Nahasu, or

30. I come now to a character, the determination of the true value of which is more difficult than of any other in the alphabet. I allude to the *long serpent* (C 1; c 1). I will state the evidence bearing on its value of all the four kinds; and I observe, at setting out, that a good deal of this evidence is quite inconsistent with its having the value T, which Chevalier Bunsen assigns to it; a good deal of it appears in favour of its having this value, and is at any rate quite inconsistent with its having the value K, which I assigned to it in a former paper; while some evidence tends directly to shew that the value was either TS or TSH, which are both connected with both T and K, and may, therefore, be consistent with both the former classes of evidence. As the letter C may represent either of these values, the one being its power in many German, and the other in many Italian words, I adopt it as a representative of this character, which will, I think, appear very clearly to be neither a K nor a T. Whatever it was, it was used in the first period, and had the *pair of oblique lines* for its expletive.

(1). There is one word containing the character before us, of which we have two transcriptions preserved. I allude to C*i*V*i*, or C*i*V*A*, with the *cerastes*, signifying a particular kind of perfume, which Galen, who gives a receipt for its composition, calls Cypheus, and the Etymol. Mag. *κῦφι*. These transcriptions certainly tend to show that the character was not a T, and apparently that it was a K. A doubt, however, may exist whether, in the age of Galen, the Greek syllable *κν* commenced with the sound of our K. We know that, in Coptic transcriptions of Greek words, *κ* followed by *ι*, or a vowel of similar power, was usually witten *Ϛ*; thus the first syllable of *κιβωτός* is almost always *Ϛι*; the second in *δοκιμάζειν* is *Ϛι* also; and the last in *ἐγκακῆιν* is *Ϛειν*. Now there can be little doubt that the power of *Ϛ* was *ch*. The Coptic is no longer a living

Negroes), as furnishing 5000 soldiers to the Egyptians. The Kahak furnished 1500, the others 1300, 520, 1000, and 680. As to the bearing of this diversity of spelling on the question of the equivalence of the characters which I call K and Q, I cannot lay much stress on it. In the first place, the stele may have been incorrectly sculptured, as steles often are; and secondly, the spelling of the name of a remote foreign nation may very well have been different in the reign of Thothmos III., from what it was after an interval of 200 years, during a great part of which all intercourse with it had probably been suspended. There is, I believe, no doubt that, either in the reign of Amenotp III. or shortly after his death, all the Asiatic conquests of his predecessors were lost.

language; and, when it was so, it was unfortunately by Frenchmen that the equivalents of its letters were taken down, who, we know, cannot pronounce *ch* or *j*, but substitute for them *sh* and *zh*. It is quite plain that α expressed the soft sound corresponding to σ ; the former is a softening down of τ , as the latter is of κ . From the analogy of our own language, we should, therefore, expect that their values would be *j* and *ch*, which is what the hard Anglo-Saxon *g* and *c* have become in a multitude of words. Accordingly, the French report is that α expressed the Italian *g* before *i* (i. e. *j*), or the French *j* (i. e. *zh*), which the reporter could not distinguish. Of σ he reported that it had the same sound as ψ , or *sh*. It is not an admissible supposition that the powers of these letters were identical; the conclusion, then, is to my mind irresistible, that σ had the value of *ch*, and of course α that of the English *j*. It appears from what has been said, that in the third or fourth century, when the Coptic alphabet was formed, the Greek κ before *i*, and similar vowels, had undergone the same softening as C in the two first syllables of Cicero has undergone among the Italians. It is, therefore, by no means improbable that it had undergone this change in the latter part of the second century, when Galen wrote; and that the sound of the *long serpent* indicated by his transcription was *ch* and not *k*.

(2). The *long serpent* is used as a representative of α in the name of Sidon, Tr. III. 5. This Hebrew letter is, I think, always represented in transcriptions of *foreign* words by the present character, or by C 2, never by the *purse* or by any of its known homophones; but there is one instance, that of מצרים, in which one of these homophones, the *semicircle*, which I have shown to be implied in fig. 78, has been represented by α in Hebrew. In the Roman age this character is used as initial in the name of Titus, on the obelisk of Domitian, in the Piazza Navona, at Rome. This is the chief ground for attributing to it the value T; and it certainly appears as decisive an argument for refusing to it the value K, as the transcription $\kappa\upsilon\phi\iota$ is for refusing to it the value T. The following considerations will, however, show that this transcription is by no means conclusive in favour of T, as against CH or TS. In the Gnostic papyrus, at Leyden, attributed to the second century after Christ, but perhaps written in the first, $\tau\iota$ occurs only twice, and is in both cases represented by the Enchorial characters corresponding to t 2, s 2, and i 2, that is, by *tsi*. In vii. 8 $\mu\alpha\sigma\tau\upsilon\alpha\xi$ is transcribed by *mastsinks*;

and in xviii. 4, *aatievei* by *aatsiewi*. $\theta\iota$ occurs thirteen times, and is transcribed eleven times by *tsi*, and twice by *thi*; while, when it does not precede ι , θ is always transcribed by *th*, i. e. t 2, h 2. In one of the two latter instances it is probable that the θ and ι were pronounced in different syllables. Again, in an astronomical work of Varâha Mihira, which was probably written in the beginning of the sixth century, certainly long previously to the recent intercourse of the Indians with Europeans,* the Greek names of the planets and zodiacal signs are

* About fifty years ago, Mr. Bentley published a series of astronomical calculations, by which he pretended to prove that the tables attributed to Varâha were composed about 800 years before that time. Subsequently, he affirmed that Varâha was not the author of these tables, but lived in the sixteenth century. With a boldness of scepticism which is as amusing as the credulity of the writer whose reveries are placed in juxta-position with his in the "Asiatic Researches," he maintained that all the Hindoo works, in which Varâha or his system was mentioned, were forgeries of a late age. It so happens, however, that an Arabic work on India has been discovered since Mr. Bentley wrote, the author of which, Albiruni, was a contemporary of Mahommed of Ghazni, who invaded India in the beginning of the eleventh century. In this work, the genuineness of which is incontrovertible, there is a chapter on Indian eras, nearly the whole of which is copied and translated in the Journal Asiatique for September and October, 1844. The writer takes as his epoch the 400th year of Yezdegird, answering to A. D. 1031; and states that the oldest astronomical tables in use among the Hindoos were those called the *Pancha Siddhantika*, which Varâha Mihira composed 526 years before that date, or A. D. 505. Next to these were the *Kanda Khâtaka*, composed by Brahma Gupta 366 years before the epoch, or A. D. 665. Mr. Bentley's calculations have obtained more credit than they deserved, in consequence of a weak criticism upon them in the Edinburgh Review, the author of which overlooked the actual flaw in them. This is not the place for pointing out that flaw, nor would there be room for doing so in a note. I will remark, however, that, according to Varâha, the sun's apogee moves only 11.6" in a century, whereas it actually moves 1181". Its place, therefore, as computed from his tables, could only agree with its actual place for a short time, and this ought to determine their age. Now, in A. D. 496, the tables of Varâha gave the true place of the apogee, according to Laplace's formula for computing its motion; allowing the equinoctial colure to have passed through the first point of the Indian Aries, in A. D. 499, as all the Indian astronomers are agreed, and as Mr. Bentley admits, that it did. This must, therefore, have been the approximate date of the tables. Again, at the end of the 3600th year of the Kaliyuga,—which expired on the 21st March, A. D. 499, 33' 36" after noon at Lanka,—the moon's mean longitude was, by Varâha's tables, within a few minutes of what it is found to be by modern tables, taking into account the secular variation. Mr. Bentley affirms that Lanka was 77° 50' E. of Greenwich, which would make the error about 8' 45"; but, according to other authorities, Lanka was in Ceylon, and its longitude must therefore have been at least two degrees more. This would reduce the above error by one-half at least. A greater degree of

expressed in Sanskrit characters. The syllable *di* occurs in Ἀφροδίτη and δίδυμοι and is represented by जि *ji* and जु *ju*. According to this analogy *ti* would be represented by *chi*; and, in corroboration of this, it may be mentioned that Ptolemy (VI. 1) transcribes the name of the Indian king Chasht'âna by Τιασ-τάνου. When the Coptic alphabet was formed, τι was replaced by a distinct character, †; probably because τ had not in this combination its usual power. If we come to later times, we have the Latin *ti* repeatedly transcribed by *τσι* in one of the Græco-Latin Glossaries published by Labbæus, which seems to have been compiled under the lower empire; and every one knows that the Italians of the present day represent it in a great number of instances by *zi*, pronounced *ttsi*. Taking all this into account, it will, I think, appear a very doubtful matter, whether the sculptor of the obelisk, where this name occurs, intended to represent the pronunciation Titus, or Tsitus, or Chitus. I should observe that in the hieroglyphical legend of Nero, *Ti* in Tiberius, and *di* in Claudius, are both expressed by T 2 and I 1. If, then, I be right in the supposition made above, the date of the softening down of the *ti* is brought within pretty narrow limits. It was introduced between the reign (perhaps the beginning of the reign) of Nero, and the reign (perhaps the end of the reign) of Domitian, under whom the obelisk in the Piazza Navona was carved; that is to say, in the last half of the first century.

In the name of Domitian on this obelisk a character is used for T, which ideographically signified "to give," and which, with the *pair of leaves* that follows it, clearly represents the Coptic †, to which I have already attributed the power of *ttsi*; and which had this signification. The *long serpent* is used in another legend of a Roman Emperor. That of Hadrian in *one* place consists of two shields containing the letters AUTKR(to)R KIISRS yCIRIINS. The *to* is an ideograph signifying "the earth," in Coptic τo. The late date of this legend, and its evident incorrectness, render its testimony of very little value in the present controversy;

coincidence could not be expected, considering the imperfection of Varâha's data, and the incorrectness of his system. I am not defending his character as an astronomer; I am merely contending that he really lived at the close of the fifth century, and that the tables attributed to him were really composed at that time. These facts appear to me to be established beyond all reasonable doubt.

but I have thought it right to notice it. The name of Hadrian is elsewhere more correctly written HTRyNS. In the legend first quoted, the H, η, is replaced by the *arm*, γ; and an I is introduced before the R,—both obvious blunders; for to assume that this I was an expletive would be unwarranted, there being no other instance of an expletive being used in the imperial legends. The most natural way of *accounting for* what no one will attempt to *justify* is, that, as the people of the East find a difficulty in pronouncing two consonants without an intervening vowel, some of them converted Hadrianus into Hadirianus, which was softened down either to Hadzirianus, or Hajirianus, in the same manner as Titus was to Tsitus or Chitus; and that one of these was intended to be represented by the sculptor of this legend. It is, at any rate, the fact that it is only before I that this letter corresponds to the Roman T or D.

(3). I am not aware that there is any instance of direct interchange between the *long serpent* and any Egyptian letter, save one, at Thebes, in the age of the papyri. Taking into consideration, however, the whole range of Egyptian documents, it is interchanged with the *basin*, K 1, with the *semi-circle*, T 2, the *hand*, T 4, and, I think, with the *vase in a stand*, which I regard as its true homophone, and which I call C 2. This last interchange I will consider when I come to speak of that character. I will here notice the others.

The word CaTVI, a serpent or reptile, is generally written with the *long serpent* as its initial; but Champollion (Gr. p. 86) gives it with the *basin* as its initial. He does not say where he found it so written, but the fact cannot well be doubted. I presume, however, it was in some late copy of the Ritual. The *basin* in some words, where it occurs, becomes in Sahidic κ, as in κ the affix, κΔκ, “darkness,” &c., in others σ, as in σΙε, “a goat,” σοσσ, “to dance,” &c.; in others, again, both are used, as κε and σε, “other,” which are both found in Sahidic MSS. This is, as I have already intimated, in my view of the matter, strictly analogous to what has happened to the Anglo-saxon *c*, which has sometimes become *k*, as in *kin*, *king*, &c.; or retained its old power, as in *calf*, *come*, &c.; has sometimes become *ch*, as in *cheap*, *chin*, *cheek*, &c.; while sometimes both sounds are used in different modifications of the same word, as *cool* and *chill*, *break* and *breach*, *bake* and *batch*. The Coptic character σ, is in fact obviously derived from the hieroglyphic form of the *basin*, k 1. Now we cannot suppose that this softening down of the *k* and *g* sounds originated at the time of the formation of the Cop-

tic alphabet. It must have been anterior to it, probably by some centuries; and during the time that it prevailed we cannot wonder at an ignorant scribe, such as were employed in the manufacture of funeral MSS., perhaps writing from dictation, using a *basin*, which had often the sound of *ch*, in place of a *long serpent*, which had always this sound. It appears then to me that the transcription in question, though it certainly most favours the value K, is not inconsistent with CH; but that it cannot be at all accounted for if the value of the character was T.

On the other hand, it cannot be denied that the *long serpent* is interchanged with letters having the power of T. There is a character representing a young *onion* with a white bulb, as it is always represented when the hieroglyphics are coloured, which ideographically signifies "white." It is also used for the cognate ideas "bright, clear, illustrious;" and it is not only used alone to express these ideas, but also with other phonoglyphs, its complements, according to Dr. Lepsius' system. Whatever the word was which is thus completed, it was doubtless the ancient Egyptian word for "white." Now the usual complement is a *long serpent* after the *onion*. Thus on the sarcophagus of Seti I., in Sir J. Soane's Museum, S. E. I. 61, 1st vert. col., we have S*C (fig. 152), "illuminating (the darkness)."[†] The S prefixed is the formative of the causative conjugation; the *disk* at the end is a determinative sign. Champollion identified this word with the Sahidic *coert*, which, however, is not causative, but signifies "fame, celebrity." He thought that the *onion*, when phonetic, was a vowel, but he thought it to be at other times ideographic, and to be read *ⲟⲩⲱⲛⲉⲓ*, the Coptic word for "white." In the present state of our knowledge, such a double value of the character as this is not to be thought of. Chevalier Bunsen gives the *onion* the value of H, as a *syllabic sign* before T, not as a *mischbild*, which is worthy of remark, as shewing the perfectly arbitrary nature of this distinction. If I had been asked to name the character, which more clearly than any other was an ideophonoglyph, I should have named the *onion*; its ideographic connexion with *white* is obvious, and all its other meanings are modifications of this idea. The only reason for selecting H as the value of the character is, so far as I am aware,

[†] Here, as in some other places, I use an asterisk to represent the phonoglyph, of which the value is under discussion.

that the Egyptians in old times styled the metal silver “white *nûv*,” *nûv* signifying a precious metal, and when alone, *κατ’ ἐξοχήν*, gold, Coptic, *ⲛⲟⲩⲗ*. The Copts called the same metal *ⲉⲗⲧ*, *hat*, whence arises a probability, in my mind an exceedingly slight one, that *hat* was the old Egyptian word for “white.”* The real phonetic value of the *onion* I believe to be very different; but before I assign it, I must observe that the *long serpent* is occasionally replaced by the *semicircle*, as its complement. This is not very common, and in instances where it appears to take place it does not always really do so. Thus in Leps. ix. 5, and again, xii. 55, the *semicircle* after the *onion* is the sign of the feminine gender, and it has here no complement. In other instances, however, it must in fairness be admitted, however it may complicate the present question, that the *semicircle* is used after the *onion*, precisely as the *long serpent* is. Thus, in the sculptures at Medinet Habû, which are of the age of the papyri (Ch. Gr. p. 349), the *onion* and *semicircle* are used to express “white” after *ⲛⲟⲩⲗ*, “a stone,” which, like its Coptic equivalent, *ⲱⲩⲧⲉ*, is certainly masculine, and which is elsewhere followed by the *onion* alone, as at Qûrna (Gr. p. 441). In the tomb of the king whom Champollion calls Rameses V., the word signifying *light*, or *brightness*, occurs

* A word corresponding to *ⲉⲗⲧ* is actually used in hieroglyphics to express “silver;” but it is disguised in an extraordinary manner. It is expressed by the character which conventionally represented a *house*, as in figs. 89, 94, followed by the *onion* signifying “white.” This has been translated “the white house;” but it means “silver,” and is to be read *HaT*. This word in the oldest Egyptian dialect signified “a house;” whence the name of the Goddess Hathor, which occurs in monuments of the first period, consisting of a *hawk*, the symbol of Horus, within a *house*. This name is interpreted by Plutarch (De Isid., p. 374, B.) *ὄϊκος* “*Ἄρην*”; an interpretation which was kept in memory by the hieroglyphical manner of writing the name of the goddess, which was retained to the last; though another word for “house,” *i* (written in the Greek papyri of the Ptolemaic period with the feminine article *ⲗⲟ*), seems to have superseded the old word *hat*, which was latterly used with the signification “silver,” as was the Coptic *ⲉⲗⲧ*. The character representing a *house* is generally a determinative sign; but sometimes, as here, a syllabic phonoglyph, having the value *Hat* or *Har*.—See the last note in the first part of this paper. The former was its original and proper value, but the latter is the more common of the two. I must add, that in pursuance of that fantastic system of grouping hieroglyphics in which the Egyptian scribes frequently indulged, a second *house* was represented after the *onion*, in order to express “the treasury” or “house of silver.” This group of three characters (an *onion* between two *houses*) I suppose to have been sounded *Ti'n-hat*. It is of very frequent occurrence in the papyri and elsewhere.

very often ; and it is important to attend to the different manners in which it is written, as they will, I think, determine the value of the *onion*. It is in the singular S*UT (fig. 153, Gr. p. 285), and in the plural *UT (fig. 154, Gr. p. 459), or *CU (fig. 155, Gr. p. 258). These are all modifications of the same word, as is evident from the context ; it does not imply causation, whence the S in fig. 153 must be radical ; and the U at the end of fig. 155 is the affirmative of the plural, implied by the *three bars* at the end of fig. 154. This variety can only be accounted for, and it is perfectly accounted for, by supposing that the *onion* was equivalent to the three characters S, U, or W, and T, or C, which in this particular word happen to be interchanged ; or, in other words, that it was, when used phonetically, a form of SW (see No. 51,) only used in the word before us and its derivatives. I read, then, the word SWiC, or SWiT ; I suppose that the Sahidic coERT is its representative ; but that the word, which Champollion reads thus, being in the causative conjugation, ought to be read with a double S, SeSWiT. How far this root may be connected with the Sanscrit *s'vêta* I do not pretend to say.

The other instances of interchange require less remark. The verb signifying “to hate” is, I believe, always written MeST, with the hand, in the age of the papyri. On the other hand, in the second period it is written for the most part MeSC, with the *long serpent*. The word signifying “liquor” is generally written with a peculiar character ; but on the sarcophagus of Seti I. (S. E. I. 65, midd. div., and again 66 midd. div.) it is written with an initial *hand*, TeSReT. There can be no mistake about this word, as it occurs in a formula of frequent occurrence, which has in other places the peculiar letter, alone or with S 2, in place of the first syllable TeS. Now in a stele in the Louvre anterior to the twelfth dynasty, this word is written with an initial *long serpent*, CeSReT, Lepsius, ix. 5.

These facts, I admit, if they stood alone, would be powerful arguments in favour of the equivalence of the *long serpent* with the letters of T power ; but, considering the serious, if not insurmountable, difficulties in the way of admitting this supposition, it may be well to consider whether they may not be otherwise accounted for. It appears that in all these words the *long serpent* was first used ; that it was superseded in course of time by the T, and that the latter alone appears in the Coptic. ⲙⲉⲥⲧⲉ, “to hate,” is certainly the representative of one of the

words, and probably COET of another. Now, in these three words, an S occurs in the vicinity of the changed letter. May not this account for the change? If the *long serpent* was a compound letter, containing a T combined with a sibilant, either S, or SH, may not the vicinity of another sibilant have led to the loss of this, and to the consequent substitution of the simple T for the compound? It certainly appears to me that these questions should be answered in the affirmative. Even where no second sibilant was present, we know that x was converted into v , not only in Chaldee words, but in the Hebrew itself; and our own "tea," derived as it is from the Chinese *ché*, should teach us the possibility of such a change as I have supposed.

(4). I need say little of the affinities of the words containing this letter with those of other languages. The Coptic is the only one available for our present purpose; unless, indeed, the relation of ⲛⲓ , the olive, with the word for "oil," to be presently noticed, can be relied on; t is the soft letter corresponding to the hard x , and hard and soft letters which corresponded were confounded at Thebes. We have seen that the *basin* passes sometimes into κ , and sometimes into σ or x . The *long serpent*, except in the words just mentioned, where it had previously passed into a T, is, I believe, invariably represented by the two latter characters. Thus we have xOT , a form of the verb "to speak;" xATSE or σATCI , a "serpent;" xATLEE , "a heap;" xOET , "oil;" all of which have hieroglyphic representations beginning with the *long serpent*; as has xOLE , or σOLE , "strength," with its undoubted homophone, the *cucupha sceptre*, the name of which begins with the *long serpent* itself. I am not aware of any word containing this letter, in which it represents a hieroglyphic T. I once thought that TI signified "a ship," corresponding to the Coptic xoi , and Hebrew י ; but I now regard this as a mistake. The cases in which x and σ represent the *basin* and its known homophones are very numerous indeed.

I have now given a fair statement of the evidence relating to the power of this letter, so that each person may form his own opinion respecting it. Mine is, that the evidence in favour of each of the values formerly assigned to it, K and T, is so strong as to render it impossible that it should be the other of these; that we are, therefore, limited to what may be called the neutral values, TS and CH, or TSH; and that the latter of these is the most probable of the two. If the values of x and σ be indeed *j* and *ch*, as I entertain no doubt, the fact of

these being the representatives of the *long serpent* is strongly in favour of the latter value. But, if this be so, it becomes a question whether the power of \mathfrak{z} was not *ch*, in place of *ts*, as generally supposed.* This is, however, not a necessary consequence, as in transcription *ch* might be used as the nearest representative of \mathfrak{z} , without its being its actual value.

31. A *reservoir of water* (SX 1; sx 1) was used in the first age, and had the *pair of oblique lines* for its expletive. Its value has been hitherto supposed to be that of *sh* in *sheep*; I regard it, however, as in the age of the papyri, and previously thereto, having had the power of *skh*, and so being a double letter. At a subsequent period I admit that it became equivalent to our *sh*. This softening down of the hard sound is analogous to what has taken place in both English and German; the Anglo-Saxon word was *sceap* or *scepe*, the English is *sheep*; the old High German was *scaf*, the modern is *schaf*, which is now sounded as *shaf*, though originally it was not so. The fact of this character having an expletive is no objection to its having a compound sound, at least, if I be correct in supposing that the preceding character has one too. My reasons for giving it this value are, first, the transcription, fig. 136, already mentioned under No. 13, where it corresponds to the Hebrew פח, and secondly, the frequent use of the *chair-back*, S 1, or the *broken line*, S 2, before it, without apparently altering its signification. It has been assumed that this was in every instance the formative of the causative conjugation; but this assumption appears to me an arbitrary one. Observation shews that it is used much more frequently before this character than before others, especially in ancient inscriptions, and that it is so used in verbs where the causative sense is not required, and in nouns. Nay, what is still more decisive, it is so used in the middle of words. Thus, on the coffin of Menkare,—“Let thy mother Netpe *throw herself over* thee,” as I take it to mean,—the verb used is that in fig. 156. The last character, the *cross*, is a determinative sign, used where crossing or reciprocal action is implied; and I read the letters PeSX, and not PeSeSX, supposing the *broken line* to be a mere completion of the double letter SX, in which it is implicitly contained. This verb is apparently the same as the Hebrew פסח, *pausákh*; see Gesenius, and in particular see its

* It is a strong confirmation of this opinion that the last syllable of the name of Nebuchadnezzar, which is צר in Hebrew, is *char* in the Bisitun inscription.

use in I Ki. 18, 26. A little after, in the same inscription, we have the word SXeTA, beginning with this letter without an S preceding it; while on the tomb of Teta, which is of the same age, it has an S always before the *reservoir of water*. This word is unquestionably a noun. It is by no means inconsistent with this view of the power of the letter to suppose that in transcribing foreign words it may have been used to represent SH, as it is in שׁוּ, fig. 23. If the Egyptians had no proper *sh*, they would use *skh* as the nearest approach to it. In fact, Chevalier Bunsen does this very thing; he supposes this character to have had the power of *sh*, but, wishing to represent it by a single character, he selects the contraction of σ and χ .

Having now gone through the letters which appear in Chevalier Bunsen's alphabet, I proceed to consider the additional letters; and I will first mention those, on the consonantal values of which, as equivalent to those which have been already considered, no doubt can exist, but which have been erroneously supposed to be syllabic signs, their *expletives* having been mistaken for *complements*.

32. The *purse* (T 3; t 3) occurs in a great number of transcriptions, being in such the most common form of T. Its expletive was the *leaf*. Enough has been said in the first part of this paper to shew that this was not a complement but an expletive. I have not found it in any monument of the first age, nor in any which certainly belonged to the second; but I rather think that a stele in the British Museum where it is used should be referred to the eleventh dynasty. It is dated in the tenth year, the king not being named. It is not later than the reign of Osortasen I., and I think it more likely that it should be referred to one of his predecessors than to him.

33. A *garden* (SX 2; sx 2,) is equivalent to No. 31. Compare the transcription of Μοσχος, fig. 140, mentioned under No. 25, with that of מִשְׁחָר, fig. 136, mentioned under No. 13. The two characters are evidently equivalent, and both are as evidently alphabetic. The expletive of that now before us is the *eagle*. I do not recollect having met with it in any inscription earlier than the reign of Osortasen I., S. E. I. 86; and here it occurs as the name of the first season, and is probably an ideograph. As a phonoglyph it was used frequently in the age of the papyri, and occasionally in former ages, as in the tomb of Nevotp, at Benihassan, in the third period. Like the *reservoir of water*, SX 1, it is occasionally completed by a prefixed S.

34. A water plant (X 2; x 2) represents *kh*, as is generally admitted. The comparison of figs. 19 and 21 shews this, and also that its expletive is the *eagle*. It occurs also, accompanied by the same expletive, in the name of a town which occurs Pl. 56, l. 6, styled "the bull on the frontiers," the country spoken of being Southern Palestine. I cannot hesitate to identify this with the Elusa of St. Jerome, the ancient Hebrew name of which, he says, was קְלֻטָּה, Khalúts; and the position of which, as described by Dr. Robinson, a few hours to the South of Beersheba, at the very border of the plain of Gaza, exactly corresponds with that of the Egyptian town. The name is that in fig. 157; and the powers of the characters are xANALutA, or xeNLut. It is well known that the Hebrews were in the habit of dropping the N at the close of a syllable, when followed, as here, by another consonant. The two names, therefore, coincide as nearly as could be expected. I shall have to return to this name when I come to consider the power of the last consonant in it. The character now before us is used on the tomb of Teta, where, however, it may be ideographic; but it is decidedly phonetic in Lepsius, ix. 11 (stele in the Louvre), which belongs to the second period.

35. A *reed* (S 3; s 3) represents *s*, being interchanged with S 1 and S 2, in the name of Rameses the Great, at Abydos and elsewhere. Enough has been said in the first part to show that the *quail*, which often accompanies it, was an expletive, and not, at Lepsius and others have supposed, a complement. I will add, however, that in the name which Manetho in Josephus represents by Σῶς, the terminal syllable is sometimes represented by the *reed* and *quail*, Su (fig. 158), and sometimes by the following character, and its expletive, which we shall see was equivalent to SA (fig. 160). Both these forms occur in the great hall of Karnac, in the sculptures of Seti I. (H. I. 5, Nos. 25, 35); and this proves not only that the consonants were equivalent, but that the vowels were not sounded. In this word, which I read SXuS, supplying the vowel on the authority of Josephus, I have no doubt that we have the Σκύθαι of the Greeks, who converted the sibilant, which was in this word probably pronounced soft, as in *rose*, into *θ*, having no letter in their language properly corresponding to it. The Greek ζ was a double letter, and, therefore, could not have been equivalent to this. If we may believe the Sanscrit work already mentioned, it must have had the power of our *j*; for ζυγόν and Ζεύς are transcribed by jûka and Jiva, जीव. The latter

word seems to intimate not only that the ζ was pronounced as *j*, but that the εϑ was sounded *ev*, as it is in modern Greek; and this is confirmed by the Talmudic transcription of εὐγενής, which is אבננוס. It must be observed that this character, or one exceedingly like it, when doubled, is not equivalent to SS, but has a peculiar syllabic value. This is sometimes written differently, as in fig. 159, or fig. 161, but the distinction is not always attended to.

36. A *quiver*, called by some a *weight* (S 4; s 4), is interchanged with the preceding in the word SXuS, which we have just been considering, lest any one should suppose that its value was the soft *s*, or *z*, as distinguished from the hard *s*. I refer to transcriptions IV., 3, 6, 12, in which it corresponds to *ϑ*. Its first use as a phonoglyph was as a syllabic sign. It is found, Sharpe, 38, 8 (second period), and again, Lepsius, xii., horiz. line (fourth period), between S 1 and A 1, which together represented its value SA; but in the age of the papyri it was used as alphabetic, being the most frequent representative of *s* in foreign words. It takes for its expletive the *small vertical bar*, which of course replaces the *eagle*. In pure Egyptian words it is rarely found; originally it was an ideoglyph, and as such it was for the most part used in all ages, when not forming part of a proper name or foreign word. It signifies "the back, or rear," perhaps, from the place of the quiver being at the back of the body; and was equivalent to three other characters, the *hinder part of a lion* (fig. 162), and two others (figs. 163 and 164), which may perhaps have been intended for the *back of the head*, and the *back bone and ribs* of an animal. All of these were pronounced SA, Coptic c̄. The two latter occur frequently in the phrase WōN eMSA, "to be at the back of," i. e. to attend upon.

37. A *flying crane* (P 2; p 2) is the constant representative of the masculine article in the age of the papyri. In combination with the pronouns, it is indifferently used with and without the *eagle* after it; and when the *square mat* is substituted for it, it takes the *quail* instead of the *eagle*. There could not be a more satisfactory proof that the article was P alone, and that the *eagle* is an expletive. This character was used at least as early as the third period, in the beginning of which it occurs in the name of Pehri, the tenant of one of the tombs at Ilithya. I have already spoken of the combination of the *flying crane* with the *leg*, VP, to represent the sound of *b*, which had no proper representative at Thebes in the age of the papyri.

38. An *unfledged bird* (U 6; u 6) is generally admitted to be equivalent to the *cerastes*; like it, it has only the consonantal powers of the other letters in this class. It is used in the papyrus in the word VA, or VAI, *to bear*, Coptic ϣει, which is very common. In this word it is always followed by the *eagle*, which I take to be its expletive. Champollion gives this verb as written with the *cerastes* and the *eagle*, and with the *unfledged bird* alone. He also gives a word signifying "hair," composed of the *unfledged bird*, U 3, and its expletive, which I should read VU; the Sahidic equivalent is ϩω, or ϣω. In the annals of Thothmos III., Lepsius, xii. 34, this character occurs with a consonant after it; it occurs also in the names of chiefs of the Khuta at Karnac; and in the papyri it is used in several words. In these last instances it is always followed by a *vertical bar*, which, I presume, is equivalent to the other expletive, the *eagle*. I suppose that the vowel belonging to the word signifying "to bear" was I, which might be expressed or understood, as in other instances; hence Vi would, according to my notation, express the three forms VAI, VA, and V, which are all in use. I do not recollect to have met this character in any inscription earlier than that of Thothmos III., in the fourth period. I believe the *cerastes* was in the earlier ages used in the word signifying "to carry," but cannot refer to any instance.

39. A *pair of uplifted arms* (K 2; k 2) is used in all ages; but I am not sure that it was alphabetic till the third age. Its value is determined by the names of two African people, found at Karnac (figs. 165 and 166), which are obviously the *Τοκλευ* and *Καλαα* of the Greek inscriptions of Axum and Aduli. In the former of these the three *mouths* are to be read LU; the triplication of a character being often equivalent to the addition of U, the third vowel, as its duplication is to the addition of I. The *eagle* in this name seems to be an expletive, but this is not certain. This value is confirmed by the mode of writing the word, signifying "a furnace," on the sarcophagus of Seti I., which has sometimes a *basin*, K 1, prefixed to the present character and the *mouth*, which elsewhere constitute it alone. The word is identical with the Hebrew כּוּר, *Kur*. It occurs with a *vertical bar* in the name of a country (fig. 167), which follows that of Khalay, fig. 19, in Pl. 25, l. 1; the last syllable has been explained in the first part. I read it *neKTeR*, but have not been able to identify it with any known city or country. From the mode in which it appears in this word, as well as in

fig. 165, it appears to me plain that it is not a syllabic sign for *ker*, as the other two instances might render probable, and as I think it likely that it was at an earlier period. In TiK, "a spark" (Sahidic $\tau\iota\kappa$), which occurs on the sarcophagus of Seti I. and in other words, which will be found Pl. 17, l. 2, Pl. 23, l. 4, Pl. 30, l. 1, &c., it is clearly alphabetic, and was so at a much earlier period, though I cannot say how early. In the inscriptions at Wadi Magara, Brut. E. H. 12, which are of the third age, it occurs frequently, forming a part of the name of that place, which was the land of MaWAK, fig. 169. This word signifies "copper," or rather "copper ore," having the determinative sign of stones, in place of that of metals, which it usually has. In the principal inscription, Hathor, Venus, is called the mistress of the copper country; a curious coincidence, to say the least.

As the primitive use of this character as an ideograph, and afterwards as an ideo-phonograph, is important to ascertain, and as it appears to me that much mistake has prevailed in respect to it, I will state my views on the subject. The original meaning was "the arms;" so it is repeatedly used on steles of the twelfth dynasty, both with and without the *vertical bar*. In my paper on the stele I read it *ki*, and translated it "reception;" connecting it, as others had done, with the Coptic $\sigma\iota$. This, however, is a false relationship, the word being used with the preposition *from*, as well as with *to*, as Pl. 12, l. 8; and in the plural, several givers being mentioned, Pl. 20, l. 5. It does not then imply *receiving*, but *the arms*, as used in either giving or receiving. It signifies, secondly, "a stand," in the shape of a pair of arms, such as is represented on many steles, on which offerings, and particularly chiva, the perfume in common use, were placed. In this sense the word is used Pl. 21, l. 3, "great stands of chiva;" and in Pl. 87, l. 2, Rameses the Great is praised for having "filled the stands with chiva." In this sense the word is used in several royal prænomens, and that so early as the fourth dynasty; for in the tomb of Teta a female is mentioned, whose name is evidently derived from such a prænomen. It also signifies, as a verb, "to uphold," or "bear by the arms;" and, as a noun derived from this, a "bearer," applied in various sculptures, as Wilk. pl. xlvi., to these who are represented bearing a naos or palanquin. In this sense also it is used in at least one prænomen, that of Queen Amunet, who called herself "Pharaoh the upholder of truth." In none of these senses have I been able to discover any cognate words in Coptic or in

any other language ; but they are all clearly connected together, and in all of them the character may be considered ideographic. It is also used, followed by the *semicircle*, T 2, and often by one or two determinative signs, to express, as I conceive, "work." Champollion supposed this to be the Coptic $\kappa\omega\tau$, to build ; but the word is applied to works generally, as in the inscription on the funeral images, that, for instance, of King Seti I., "to do all the *work* which is to be done in Hades," including ploughing, reaping, and other works, but not building ; it seems elsewhere specially applied to ploughing. Now the root *kri* or *ker*, in the sense of *working*, occurs in many of the Indo-Germanic languages, and in the Sahidic $\sigma\pi\epsilon$ signifies "to plough or dig:" cf. כרה, כנר. In the north of Ireland it is common to use the word "labour" in this sense, "he *laboured* a field," meaning he ploughed it. This may have been the case in Egypt also. I believe, then, that the word before us should be read *kret* or *kert*, taking the initial character as syllabic, equivalent to KR, and the *semicircle* for the formative of the gerund or verbal noun, as it is in a great number of other instances. In this sense, in which the character is a syllabic sign, and no longer a pure ideograph, it is found in Sharpe, 82, 5, a monument of the third period. Again, it is used often with one or more determinatives, to express "a bull," "a husband," or "a hero," all ideographically connected with each other, though not with any of the preceding significations. In the latter sense it occurs in the titles of Rameses the Great ; "the Horus, the victorious (bull or) hero," which in Hermapion's translation is rendered Ἀπόλλων κρατερός. This may be compared with the Coptic $\chi\omicron\pi$, "brave, strong," and $\chi\pi\omicron$ or $\sigma\pi\omicron$, "to conquer, to be of good courage," Deut. xxxi. 6, where the LXX. have ἀνδρίζου. This corroborates the inference already drawn, that the character was a syllabic sign for KR before it was a letter, and that the *vertical bar* implies R, not A. If so, the *eagle*, when it follows this character, ought always to be sounded. I will only add that this character, with the *vertical bar*, is followed in the sculptures of Shishonk, at Karnac, by the *phallus*, as determinative sign of a bull. The three characters I take to be no more than a single K, though they might be *kur* or *ker* ; but I have not identified to my satisfaction any name in which they are found.

40. *A tuft of water-plants* (H 3 ; h 3) is clearly used either for H, or as a syllabic sign for HA. In the sculptures at Medinet Habu, "straw" is expressed by T 4, H 3, and A 1. The Coptic is $\tau\omicron\sigma$, and after what has been said on

the nature of expletives generally in the first part, I need not waste time in proving that the *eagle* ought to be considered as an expletive, and not as a vowel transferred from its proper place in the middle of the word. I admit, however, that this character was first used as a syllabic sign for HA. It was the plant of the North, which was considered as the front, as the East was regarded as the right, and so with the other cardinal points. *Ha* was the old Egyptian word for "front;" and hence the syllabic value of the character which preceded its alphabetic value. In the earliest times it was, I believe, exclusively an ideograph. In a stele of Mr. Harris's (H. I. 1), which appears to be of the third age, the word signifying "naked," which I read *Haï*, is written as in fig. 170; the last character being a determinative sign following words signifying anything connected with clothing. The syllabic sign is here completed in the fifth manner, by prefixing H 1. At a later period this word was written as in fig. 171, the syllabic sign being completed in the fourth manner by adding A 1. This is the form given by Champollion (Gr. p. 203) from different copies of the Ritual. On the sarcophagus of Seti I., S. E. I. 66, the preposition *Ha*, before (Copt ⲉⲁ), which is sometimes expressed by this character alone, is completed both in the third and in the fourth way. The present character occurs in many other words, which are sometimes written with the *eagle* after it, and sometimes not. If the principle of expletive characters were not already established, it might be difficult to prove that this *eagle* was not a part of the words; but, that principle being admitted, it is more natural to suppose it an expletive, and the case of ⲦⲐⲟⲩ , already mentioned, seems conclusive. It was used alphabetically in the fourth period, if not in the third.

41. A *lion's front* (H 4; h 4) is used, like the last character, to express the fore part of any thing. Originally, it was ideographic, and continued to be used so in the word *ha* or *he*, "the front," which is expressed by the character, either alone, or more commonly with a *semicircle* after it, denoting that the word is of the feminine gender, or a *semicircle* and *vertical line*. It was used, however, as an alphabetic character in the word *Hay*, where the *arm* follows it, which signifies "a chief, leader, or beginning;" and in *HiT*, or rather *HeTI*, "a heart," fig. 172, which is in Sahidic ⲉⲦⲏ , as well as ⲉⲏⲦ . The distinction which the Egyptians made between this word and *MeT*, fig. 52, has not, I believe, been yet ascertained. The latter may have been regarded as the organ of thinking, the

former as the seat of the affections. In some foreign words in the papyri, the *arm* follows this character in the manner of an expletive ; but, as I have not identified any of these words with Hebrew ones, I cannot be sure that it was not sounded as a *y*. The character was used in all ages.

42. A *concave stone* (H 5; h 5) is the ideographic representative of a mountain, or rather, as it appears to me, the hollow of a mountain, a cave or a pass at the top of a range of mountains.* The character, when thus used, is followed by a *vertical line*, equivalent, I believe, to a *quail*, with the determinative sign of stones, fig. 168. Champollion considered this equivalent to the Coptic $\tau\omega\sigma\tau$, “a mountain ;” but I read it HU or HeV, regarding it as connected with *cav-us*, &c. That it was used alphabetically appears to me obvious from the word signifying “a cow,” already referred to (fig. 143), which I read WaH, connecting it with *vacca* ; and from that signifying “wicked,” which consists of the character followed by two *quails*, representing the Coptic $\varrho\omega\sigma\tau$. I have never seen it used with an expletive ; but should presume that, if it had any, it would have the *quail* or *vertical line*. It was certainly used in the third age.

I now come to characters, the value of which, as well as their alphabetic nature, admit of dispute.

43. A *pair of legs* (I 3; i 3), was supposed by Champollion to have the power of H ; while Lepsius made it a T, and affirmed that it belonged to the later ages exclusively. It occurs in the word which I have represented in fig. 173, and which is used in steles of the third period as synonymous with fig. 174, which all admit to correspond with the Coptic ι , “to come ;” at least, when the expletive is omitted, as it generally is. The *two leaves, one of them standing on a pair of legs*, are a modification of I 1, which was only used in this word. This is the first character in the name of the God of Medicine, which is transcribed Ἰμούθ , and which signifies “welcome.” Now, in the steles referred to, fig. 173 is used precisely in this sense, as in Sharpe E. I. 17, 5, “May ‘welcome’ be said to him by the Lords of Abydos !” For this we have in E. I. 78, 8, the form in fig. 174. Accordingly, I take the *pair of legs* to represent I, and the *quail* to be its exple-

* What has been usually translated “the solar mountain” is certainly the horizon ; where, according to the Egyptian notions, the sun issued from, or went behind, a mountain, passing through a sort of gap at the top of it.

tive. In this word, the character may be regarded as ideo-phonographic; but in the age of the papyri I find two instances of its being used alphabetically. The name of an Asiatic people is written indifferently with this character and with I 2; compare the lists of the prisoners of Amenotp III., Seti I., and Rameses II. The true reading appears to be K 3 (N 1), I 2, or 3 (U 1); the second and fourth characters being expletives; but the copies that have been published are, some of them, incorrect. Again, the poems in the Sallier MS., No. 2, and the Anastasi MS., No. 7, are all followed by a word consisting of this character, u 1, s 1, p 1, and u 1, which appears to signify "an end." I read it ISeP, taking the second and last characters for expletives. The use of the character as a constituent in this word can only be accounted for by regarding it as alphabetic; and if it were so in this age, I must, on the principles previously laid down, admit it to have been so in the third age, where it is used with an expletive.

44. A pair of quails (I 4; i 4) sometimes represents *uu*, as in the word signifying "wicked," cited under No. 42; but it occurs in several other words where this value is scarcely, if at all, admissible. On the authority of two words I suppose that it was used to express I. One of these words has been already cited under No. 40, see fig. 171, compared with fig. 170. The other is the feminine noun, signifying "a way," which has been referred to under No. 25. It is written in one of the papyri (Pl. 20, l. 8), as in fig. 175; while in the stele, Sharpe, E. I. 78, which is of the third age, the *two quails* are omitted, which could not have been the case had they represented more than one vowel; and in the sculptures at Medinet Habu the *two leaves* are used in place of them, as in fig. 141. I read the word in every instance *Wi*, not *Wau* or *Wauu*. *Two quails* occur together on a stele in the Louvre (Leps. ix), which is of the second age; but I cannot explain the word where they occur, and have no proof that here, or elsewhere before the age of the papyri, they constituted a single character; though I think it highly probable that they did. This character had no expletive.

45. A pair of eagles (I 5; i 5) was used in the word signifying "to see," from a very early period, and appears to express a single letter, which cannot well be any other than I. Indeed, the characters having this value are all *pairs*. The word occurs in an inscription of the second period, E. I. 38, 11, written as in fig. 177. Elsewhere the two last characters are omitted; the *eye*, which was at first a determinative, placed irregularly, for convenience of grouping (cf. fig. 74), being

now used as phonetic. So in Sharpe, E. I. 6, third period. The phonetic value of the *eye* is admitted on all hands to be *Iri* or *I*; and the word must, therefore, be read *MI*. The *pair of eagles* is also used in a proper name which occurs on a stele in the British Museum, dated in the 6th year of Osortasen II. Its alphabetic use at this early period appears to me unquestionable; like the preceding character, it had no expletive.

46. A *tooth* (h 6) occurs as an element in a considerable number of proper names and other words in the papyri. It is accompanied by the same unmeaning expletive, already noticed as accompanying the hierographic *arm*. The corresponding hieroglyph is always, I believe, used ideographically till a period much later than this, when it represented *H* in the preposition *her*, with (Ch. Gr. p. 472, æt. Tiberius). In early times it was used as a determinative sign after the word noVHe (Coptic $\text{o}\lambda\text{g}\epsilon$), for which it sometimes stood alone, and some other words. The hierograph before us is used in the Ritual and other late MSS. for the initial in the name of the God *Har*, which at an early period was written with the *face*, when not expressed symbolically by the *hawk*. From this it is fair to conclude that this was the value of the character in the age of the papyri; and this conclusion is confirmed by the Coptic root, which appears to be akin to one of the words (fig. 178) which occurs Pap. Pl. 95, l. 6. Dropping the expletive, I read this KoLHeT . The meaning is "clothing," and I connect it with the Coptic $\text{x}\lambda\text{g}$.

47. A *tusk* (H 6), called by Chevalier Bunsen a *bent stick*, is admitted to have had the value *H* in the sixth and subsequent ages, when it was used in words where *H* 1 was used in earlier times.—See Champ. Gram., pp. 335, 471, 473, 474. It is used, however, in the third period, if not before it, followed by *T* 4, in the name attached to the winged globe, which is so common in the sculptures; and there is not the slightest reason for supposing that it had in this word any ideographic or syllabic import. Its origin is apparently the same as that of the last character. It is used as a determinative sign after the word noVHe , "a tooth," and other words signifying biting or chewing; and also after *AV*, "ivory" (Leps. xii. 16, *et al.*), which seems to me conclusive as to what the character was intended to represent. Hence both this character and the preceding came to represent the final letter in the word noVHe ; as in the case of *HoV*, and the *cerastes*. I have never seen the hierographic form of this character, and have some suspicion that words written hieroglyphically with the *tusk* would be

written hieroglyphically with the *tooth* ; but, having no proof that this is the case, I keep the two characters distinct. I am not aware that the *tusk* had any expletive.

48. A *vase in a stand* (C 2 ; c 2) has been valued as T by both Champollion and Chevalier Bunsen ; solely, I believe, on account of the name of Cambyses being written with this character as its final on the Cosseir Road ; while a T 1 is used on a statue in the Vatican. I wish the reader to refer to what I have said on the *long serpent*, No. 30, to which I consider the present character equivalent. It will appear clearly from what I have there said that this interchange is not conclusive ; and indeed the fact of the Greek transcription of the name being *Καμβύσις*, not *Καμβύρις*, seems to neutralize all its force ; leading to the conclusion that the true name was Kambuch, and that it would probably have been expressed in Hebrew by כַּבּוּי with a *Dagesh* in the *Beth*.* The occasional omission of the final sibilant is like the omissions of it which I have noticed under No. 30 (3). The equivalence of this letter to the Hebrew *y* appears from the transcriptions III., 6, 7, and from that noticed under No. 34. In two of these cases, as in the name of Cambyses, the Greek represents the character before us by a *σ*, while in the third it has a *τ*. It is clearly represented by *χ* in the word signifying “ head,” which occurs repeatedly in the papyri, as Pl. 90, l. 6 ; consisting of this character twice, each followed by its expletive, the *eagle*, and at the end of the word a *head* for a determinative sign. This I represent by CoC ; and it is obviously the Coptic *χωχ*. Another word in which it occurs (fig. 179) has been identified by Champollion with the Coptic *Ⲭⲉⲧⲟⲓ*, “ a soldier.” From the determinative signs, however, with which it is used, Pap. Pl. 11, l. 10, from which the figure is taken, it is plain that it is the name of a foreign nation ; and though it is *possible* that the Coptic name of a soldier may be derived from that of this people, which may have supplied the Egyptians with the greater part of their mercenaries, I cannot admit it as certain. At any rate, the word, if thus originating, would probably have undergone corruption in the long interval between the time anterior to the twelfth dynasty, when the poem contained in

* The name of Cambyses is written at Bisitun *Kabuji*, that is, with the softened sound of *ch*. The corresponding Hebrew would, I presume, be כַּבּוּי. This newly-ascertained fact is a strong confirmation of the value which I had previously assigned to this letter.

this papyrus, in which this people are mentioned, was written, and the formation of the Coptic language. Champollion's identification of a verb consisting of this character preceded by the *quail* with the Coptic οτοοτε appears to me still less to be depended on. This word signifies "to excel;" whereas the Egyptian word is translated by Champollion, "to pass, to set out." Another Coptic word, οτοτ, "other," when joined with the particle εβολ, is used to signify "to be separated from;" and Champollion endeavours to deduce the meaning of the old Egyptian word from a comparison of the two Coptic ones. But the old Egyptian WeC, as I write it, signifies sometimes "to pass, or be carried,"* and sometimes "to be happy or pleased." It is, then, fully as natural to connect it with ροϛ as with οτοτ. The former signifies literally "to leap up," as in Acts, iii. 8; and metaphorically "to exult." Another word consisting of this character alone, or followed by the *pair of leaves*, CI, signifies "to traverse;" it is used of the sun *passing through* the heaven; and I regard it as the root of the Coptic ροι, and the Hebrew ר, "a ship." I do not bring these Coptic analogies forward as conclusive on the subject, though I think the latter tolerably clear; but merely to shew that those adduced by Champollion are inconclusive. I depend more on the word signifying *strong* or *strength*, which is in Sahidic Ϯοεε. This I take to be signified by abbreviation, by the character before us in the formula found in figures 92 and 93, signifying "living in strength and health." The latter word is frequently found written in full, SaNV; a *waved line* and a *leg* being added to the single character which here represents it. This word is generally accompanied by another consisting of the *cucupha sceptre*, with or without the *owl* or *half arch*; and it is now generally admitted that this signifies "strength;" though Champollion translated it "purity." I consider it to be equivalent to the *vase in a stand*, both representing the Sahidic Ϯοεε. The name of this sceptre is composed of C 1, γ 1, and M 3, and it is a peculiar letter, equivalent, as I conceive, to these three when it stands alone, or to the first two when it has an *owl* or *half arch* for its complement. To this the *horse's leg*, the natural symbol of active

* In the representation of the panegyric of Harsaphes at Medinet Habu, Wilk. lxxxvi., it is repeatedly applied to the king *borne* on his palanquin, as he is represented. The Latin *veho* (*fixo* and in Zend *vax*), may therefore be more akin to the old Egyptian word than the Coptic one. The connexion between being carried and being happy appears in the Egyptian word ATP, as well as in this.

strength, is altogether equivalent. It occurs in the prænomen of Necho, "Pharaoh the strong (or active) hearted." This word is frequently used in connexion with that which signifies "gold," or "a precious metal;" and frequently the peculiar initials are used intersecting each other, as in fig. 176, which is CoyoM Nu V, "strong or hard, i. e. alloyed gold," not "pure gold," as Champollion and Rossellini imagined. The latter has given a plate, in which the goldsmith is represented forming this "hard gold;" evidently by melting together gold and copper, or some other alloy, in a crucible; and has interpreted the hieroglyphics as if he was purifying the gold,—the very reverse of their meaning! From this use of the word it came to signify, when the *sparrow* was added to it, the usual determination of what is bad, "to pervert or corrupt," the Sahidic Ⲫⲟⲟⲟⲟⲉ.

On the whole, I feel confident that this character is equivalent to the *long serpent*, and that it could neither have been a T nor a K. I regard it as most probably CH, but, if not, as TS. Its expletive was the *eagle*, and it was used at least as early as the beginning of the third period (Sharpe, E. I., 86, 6).

49. A *weight* (K 3; k 3) was used in the second period (Sharpe, E. I., 36, 1), and had for its expletive the *leaf*. That this is to be considered an expletive, and not a complement, follows from the establishment of the general principle, and needs not to be maintained separately. Its value was considered by Champollion to be SH, because, as he said, the word signifying "cat," answering to the Coptic Ⲯⲗⲁⲟ, began with it. He was followed by Lepsius; but Chevalier Bunsen, considering that argument inconclusive, as the letters which had the value of KH became Ⲯ in Coptic, gave this letter the syllabic value xa. I find, however, that Ⲯ sometimes represents the K of the old language as well as X and SX. The *basin* and *square mat*, KaP, corresponding to the Hebrew כַּף, "a palm of the hand," is represented by the Coptic Ⲯⲟⲟⲟ; and I think there are other instances, though not equally certain ones. The *weight* may, therefore, have been K; and that this was its true value appears to me highly probable from two considerations; in fact, I have no doubt of it. This character represents the particle of similitude, "as, like;" and as such corresponds to the Hebrew כִּי, and there was no other slender, upright form of K; while the *water plant*, X 2, was such a form of X. I may add, that a character like the determinative sign in fig. 171, and not unlike the hieroglyphic form of this letter: a character which I take to be an abbreviated form of it, is used as initial, with the *leg*, the *semicircle*, and its

expletive after it, in the name of the town which the Greeks called *Koppòs*, and also in the name of "jasper," *KaSPe*, answering to the Hebrew יִשְׁפָּר. The etymological connexion between Y and G, which the Egyptians at Thebes did not distinguish from K, is well known.

50. An *axe-head* (K 4; k 4) was considered by Champollion to be a *x*, being classed by him with Q 1, C 1, and the two syllabic signs related to it, the *cucupha sceptre* and the *horse's leg*. Chevalier Bunsen has omitted it from his list of phonoglyphs, though it occurs in some common words. He has, however, in his list of Egyptian words corresponding to Coptic ones, given one of these words as *Kerhu*, corresponding to the Sahidic *Ⲭⲱⲡⲉ*; but it appears from p. 680, that he regarded the initial in this word as the *footstool*, a syllabic sign, having the *mouth* for its complement, which he reads *her*, but which is, in my opinion, certainly *xel*. The two characters, which Chevalier Bunsen must have regarded as identical, are never confounded in any hieroglyphic text; and though the hieroglyphic forms are similar, the hierographic ones have no sort of resemblance, as will appear from the hierographic form of the word *xel*, "under," given in fig. 180, compared with k 4. This character was used in the first age; the name of a kind of panegyric, *WeK*, which concludes with it, occurs in the inscription on a tomb at Ghizeh (Burton E. H., Pl. 27). In the papyri it is of frequent occurrence, its expletive being the *eagle*. With respect to its value, the above Coptic equivalent of *KoRH* would be consistent with its being either K or C; but the transcription IV. 3, seems to prove that it had not the latter value; and this is confirmed by the use of this character to represent the second letter of *כַּנְרֵל*, at Karnak (Ros. M. R. 133); while in the papyri it is represented by a *basin*, as in fig. 98.

51. A *chenalopez* (SW 1; sw 1) occurs in the names of the chiefs of the *Khuta*, in such a manner as to prove that it was used as an alphabetic character; and, though I consider it to have been originally and properly a syllabic sign, I think it stands on the same footing as Nos. 31 and 33; and that it should be admitted into the alphabet if they are. The name of one of these chiefs is given, fig. 181, which I read *XuTASWeR*, an Indo-Germanic compound, signifying "Lord of *Khuta*." This name alone I should consider conclusive evidence that the *Khuta* were not the Hittites. The third character is a syllabic sign for *TA*, which is sometimes completed in the fifth manner, as here, and sometimes in the third, the *eagle* being added. The fourth character is the *chenalopez*, with the

vertical bar for its expletive, constituting a word, which is transcribed by $\sigma\iota$ and $\sigma\epsilon$, and has heretofore been read SI, but which I propose to read SWI, supposing that to be both the name of the bird and the word signifying "a son." I consider this word to signify "begotten," as SeV, or SeW, the name of the father of the five principal deities, signifies "the begetter." It is etymologically connected with $\acute{\upsilon}\iota\text{-}\acute{\omicron}\varsigma$, and with our SO-N; which word, variously modified, is used in the same sense in all the Gothic, Lithuanian, and Slavonic dialects, as well as in Sanskrit, where its root appears, SU, "to beget." This character was used in the first period in the sense of "son," being found on the tomb of Teta. In the third period (Sharpe, 80, 14) it occurs in the name of the God already mentioned; which I consider to be a completion of the syllabic character in the fourth manner. In the name of the city of Neith it is completed in the fifth manner, S 2 being prefixed to it. I read this name SWaI, the character now before us having in this instance the power of W, in the same manner as No. 31 was shown to have in certain words the power of X. It has been said that this character has in Greek and Roman proper names the value S. The fact is, however, that it only occurs in one proper name, $\Sigma\epsilon\beta\alpha\sigma\tau\acute{\eta}$, where it precedes the *leg*, and with it represents the syllable $\Sigma\epsilon B$. The *egg* was used for the *chenalopez*, to signify "son," in the age of the papyri, but I believe it was so used ideographically. In the later ages it was used as a letter having the power of S; but with that I have at present no concern.

52. A *cruciform flower* (U 7; u 7) is used in the eleventh line of an unpublished stele in the British Museum, dated in the sixth year of Osortasen II., to express the syllable UN. In other steles of the same age, it is completed in the fourth manner, by the addition of N 1; where the same word occurs, which is HUN, new. In the fourth period we have the character occurring in the word represented in fig. 143, WaH, "a cow." This implies that it had now become alphabetic; and yet, so far as my observation goes, this is the only word in which it is not followed by N; its name is unknown. The *hare*, with which it is often interchanged, and which was always syllabic, was probably WoN; and this may have been for distinction UN.

53. An unknown object (X 3; x 3) is used ideographically with the *semicircle* and *vertical line*, implying that it is of the feminine gender, to express some part of the body; and, though Champollion thought otherwise, this is clearly "the

chest, or stomach;" for on the sarcophagus of Seti I. (Sharpe, 63, 62), the deceased king is addressed by the fourth of the genii of Amente in these words: "I am thy son, I am come to attend on thee, to bring thee thy heart, to put it in its place in thy *chest*." Again, Pap. Pl. 14, l. 4, 5, it clearly denotes the receptacle of food: "His victories are his arms for filling his *stomach*; as the bees eat of their labours." In both these instances, the present character, which must, I think, have represented some object,—I cannot conjecture what,—the name of which was identical with that of the chest, or torse, is used for the words in *Italics*. Hence it is used by synecdoche for the whole body or person, as in the common expression, "his son of his *body*," i. e. "his own son." From the false notion which Champollion entertained as to the primary meaning of this word, he identified it with the Coptic $\sigma\omega$; whence he assigned to the character the alphabetic value σ or ω . In general, however, he treated it as an ideograph, dividing the words in which it occurred into two. It is scarcely to be conceived into how many absurd mistranslations Rosellini and he were led by this one error. Lepsius rightly identified the group consisting of this character, R 1, and T 4, with the Coptic Ⲣⲣⲟⲩ , "children." Champollion had imagined it to be $\rho\omega\tau$, "a race;" taking the initial character for a determinative sign transposed, and regarding the actual determinative sign as a separate word, "of children." But Lepsius supposed the *mouth*, which follows this character in this word, to be its necessary complement; whereas I regard the character as alphabetic. It is, in fact, found preceding other letters, as in the word x 3, t 2, u 4(u 1), XoTeV, "to kill," which is evidently the Coptic ⲬⲱⲧⲉϢ ; and in x 3, s 2, i 2, XeSI, an epithet of the chief of the Khuta, and also of Kush and other hostile people. I identify this with the Coptic ⲬⲓϢ or ⲬⲟϢ , *lassus, fatigatus*, and translate it "wretched." It is evidently an epithet implying contempt and hatred, which may well be derived as I suppose. Champollion's translation of this word as two, "the wicked race," is inadmissible, because in the Sallier Papyrus, No. 3 (Pl. 32, 7), it is distinctly used as an epithet of the chief, "the *wretched* chief of the vanquished Khuta." In these two words it appears to me impossible to suppose that an R was to be introduced after this initial character. Another word which commences with this character appears to me to contain its expletive. It is X 3, y 1, q 1, u 1, which occurs Pap. Pl. 14, 3, 4, followed by the *symbolic eye*, or the ideograph which on the Rosetta stone is translated ἰερὸν κόσμον , and other deter-

minatives. This appears to me radically connected with חקח, and I accordingly reject the *arm* as an expletive. In confirmation of this, it may be stated that Chevalier Bunsen, though he states the character to have been originally syllabic with the value *xer*, admits that it was subsequently *xa*, being completed with the *arm*. This remark implies that he, or Dr. Lepsius, or Mr. Birch, had met with some word in which the *arm* sometimes followed it, and sometimes did not. According to their view, such a character should be supplied when not expressed; but according to mine the inference should rather be that it was an expletive. I have not noticed the character as in use before the second period, when it occurs as an ideoglyph on the stele in the Louvre, Leps. ix., and as a phonoglyph in Sharpe, 38, 4; but as this word is found written in Sharpe, 80, 9, without the *mouth*, which here follows it, and as the same thing occurs in respect to XPoTi in Sharpe, 8, I infer that this character was in the second and third periods a syllabic sign for *xer*. In the age of the papyri, however, it had become decidedly alphabetic.

54. A *coil of rope* (M 4; m 4) was valued by Champollion as an M. Lepsius supposed it, when followed by a *mouth*, to express the syllable *rer*. Chevalier Bunsen adopts this value, though, it would appear, with some misgivings, placing the character among his *mischbilds*. I am satisfied that Champollion was in this instance right. The character occurs as initial in the word MuR, "to surround," Coptic ⲙⲟⲣⲡ, and in MNa, "a weight," etymologically connected with מנה and $\mu\nu\tilde{\alpha}$, and probably not differing much in value from either. This word occurs frequently in the historical inscription of Thothmos III., at the Louvre, the metals yielded by the vanquished nations being numbered in it, while the liquids are numbered in the MeN (written as in fig. 8), a measure evidently derived from the same root, which we find in *men-sura*, as well as in the Hebrew מנה. This character also occurs in a word of unknown meaning (Sharpe, 80, 11), P1, X3, M4, to which should perhaps be added N 1; and in the adverb TuM, also, which occurs on the statue of Queen Amunet in her nurse's arms (Sharpe, 170, 30). This appears to me connected with the Coptic ⲧⲱⲙⲉ, *conjungere*. This character is never used, so far as I am aware, with an expletive. It was in use in the second period, occurring Sharpe, 38, 4. It is formed in two ways, both of which are given in the plate; and it must not be confounded with a somewhat similar character (fig. 182), which is used for UTeN, "to offer," and as a determinative sign after this and other words of like meaning.

55. A *rule*, as Chevalier Bunsen calls it (T 5 ; t 5), is placed by him among the *mischbilds*, as representing, either alone or with S 2, the word *tes*. Champollion valued it as simply T, and I agree with him, as I find it prefixed to the preceding letter in the adverb lately mentioned, as well as to S. The reason of this was, I have no doubt, to distinguish this adverb from the negative particle ToM, which had the same consonants, and differed only in the intermediate vowel, but was of very different,—indeed almost opposite,—signification. This last word is written as in fig. 71, the *sledge*, however, being sometimes omitted. I have not met with this character before the fourth period, nor have I seen it accompanied by an expletive.

56. I now come to a character, or rather pair of characters, a *pike* and an *arm*, as to the power of which I am more in doubt than as to that of any other. I regard them as forming one compound letter ; they will be found in the alphabet as O 1, o 1 ; the pronunciation being, as I conceive, as that of *o* in *bone*, or as the Greek Ω. This is a new value, and to some it will appear a very extraordinary one ; nor am I at all sure that what I shall say on the subject will be considered as justifying it. The first of the two characters was valued as N by Champollion in his latest work ; at an earlier period he made it R. The second, when standing alone, has been already valued by me as *y*. Chevalier Bunsen considers the first to be a *mischbild*, having for its complement the *arm* and *eagle* combined. This he identifies with the Coptic πΔΔ, as Champollion had done before him ; but he places after the Coptic equivalent a mark of doubt. Supposing the identification to hold good, the word would be, according to my value of the character, NayA. This word, which signifies “great,” is generally represented by the *pike* alone ; and I conceive this to be the value of that character in the present group, which will thus be “NayA *y*u,” i. e. “great *y* ;” of which Ω μέγα is a literal translation ; for, from its position in the alphabet, and many other considerations, it cannot be doubted that, when *y* passed from a breathing to a vowel, it represented O. In support of this opinion, I first observe that it is a positive fact, which admits of no dispute, that the two characters in question had this precise value, when combined together, at the time when the Gnostic papyrus at Leyden was written, i. e. in the first or second century after Christ. While the character corresponding to the *arm* (fig. 183) is transcribed by α, and occasionally by ε, this character, with that corresponding to the *pike* placed over

it (fig. 184), is transcribed by *o* and ω . I do not bring this fact forward as direct evidence to prove that the group had the same value twelve or thirteen centuries previously; but I think it must be admitted that it goes a good way towards neutralizing any argument against its having had that value, founded on its intrinsic improbability. I next observe, that if this be not the value of the group, we must, unless we reject Champollion's identification of the Egyptian word for "great" with $\alpha\alpha\alpha$ (and I can see no grounds for rejecting it), read it *Nay*, or simply *N*, supposing the *pike* to be alphabetic, and the *arm* its expletive. Now, the group in question occurs in a great variety of words, where it seems clearly to express *one* element of sound. For example, it begins the name of the second of the four races of mankind mentioned in Belzoni's tomb and elsewhere. The remainder of the name is *A 1 (U 2), M 4*, with the plural sign implying the termination *U*. The four first characters are sometimes replaced by the *barbaric club*, which in fig. 16, and elsewhere, is used as a determinative sign to the names of foreign countries and cities. According to my proposed value, it would represent as a phonoglyph *OA*, the name being *OAMU*. Unfortunately, neither this name nor *NAMU*, nor *NayAMU*, is capable of identification with any known name.* I think, however, that the value *NAYA* is too complicated for it to be likely to be expressed by a single character; and, on the other hand, if the two first characters were simply *N*, or any simple consonant, the expression of the *A* by the *eagle*, attended with its expletive, between it and another consonant, is scarcely consistent with usage. I at one time read the name of this people *NayU AMU*; supposing the $\alpha\alpha\alpha$ of Gen. xiv. 5, to be intended, and the epithet "great," or "gigantic," to be prefixed. This reading, however, requires a transposition of the characters *A* and *U*; and now that I have discovered the relation of the latter of these letters to the former, as its expletive, and that I have

* It has lately occurred to me that it is the plural form of the Semitic, $\alpha\alpha$, people. The first of the four races, that of the Egyptians, is called the *LeTU*, which means, "people" in the Egyptian, here allied to some of the Indo-Germanic tongues. It is the very name assumed by the *Letti*, whence *Lithuania*. The second race may, then, very naturally, have been called from the Semitic name for "people." Belzoni supposed these to be *Jews*; and in the tomb of *Nevotp*, at *Benihassan*, they have been supposed to be the family of *Jacob*. I do not admit either of these identifications; but the fact of their having been made by others, shews that the *appearance* of this people in the sculptures is not inconsistent with the supposition that they may have applied to themselves the name which we are considering, read as I have proposed, in the sense of "people."

observed the frequent occurrence of the *pika* and *arm* in conjunction with one another, I have no hesitation in abandoning this reading as untenable. As I have not been able to identify any of the words in which this group occurs with any in Coptic, or in any other language, I will merely refer to Pap. Pl. 51, ll. 3, 4, and 8; Pl. 57, l. 3; Pl. 58, l. 2; Pl. 89, l. 11; where, as well as in several other places, it will be found to occur. I have not met it before the third period, when it occurs in the tomb of Nevotp at Benihassan.

I have now gone through my list of phonoglyphs which were used alphabetically in the age of the papyri. It is more likely that it will be found incomplete, than that any characters occurring in it will be found improperly inserted. I have, in conclusion, to request the candid reader to consider the disadvantageous circumstances under which this paper was composed; without the opportunity of examining any of the monuments themselves, and without access to the most important published copies of them. Even those works which I have quoted have in some instances not been consulted with a special view to this publication; but memoranda were made at a former period, when I had an opportunity of seeing them; and these have been my authorities. On these accounts, the work is far less perfect than I should wish; but it will still, unless I greatly deceive myself, be found an important contribution to the knowledge of the true mode of reading the Egyptian monuments.

The following abbreviations are used in citing the works referred to as authorities for the forms of Egyptian words:

B. E. H., or Burt. Exc. Hier., *Excerpta Hieroglyphica*, by Burton (or Halyburton).

E. I., *Egyptian Inscriptions*, by S. Sharpe.

Gr., or Cham. Gr., *Grammaire Egyptienne*, par Champollion le Jeune.

H. I., *Hieroglyphical Inscriptions of the Syro-Egyptian Society*.

L. or Leps., *Auswahl der Urkunden*, by Lepsius.

Pl., or Pap. Pl., *Historical Papyri in the British Museum*.

Ros. M. R., *Rosellini Monumenti Reali*.

Wilk., *Manners and Customs of the Ancient Egyptians*, by Sir J. G. Wilkinson.

Except in the case of Champollion's Grammar, which is referred to by the page, reference is made to the plate by its number, and to the line, column, or figure, where the word is to be found.