


II.—ACCADIAN PHONOLOGY.

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By Accadians are meant the predecessors of the Semites in Chaldea, who built the great cities there, founded the civilization of Western Asia, and invented the cuneiform system of writing. This was originally a system of ideographs, which gradually changed into more or less corrupt forms, like the Chinese characters. The new forms were stamped upon the clay so plentiful in Babylonia, and the several lines of which they were composed consequently assumed a wedge-like or cuneiform shape.

The Accadians spoke an agglutinative language, our knowledge of which depends for the most part upon the bilingual grammars and dictionaries, phrase-books and texts, compiled by the Semitic Assyrians. The Accadian word or text is usually given in a column on the left-hand, and the Assyrian translation in a column on the right; sometimes, however, the translation is an interlinear one.

Although the Assyrian rendering furnishes the meaning of an Accadian word or grammatical form, the true pronunciation of that word or form is a matter of considerable difficulty. In the first place, the Accadian characters were primarily hieroglyphic, denoting an object or idea, but giving no clue to its name. Hence the pronunciation of a character in any given instance was left to the reader, who was, of course, supposed to be acquainted with it. Thus  signifies "to make," an idea represented by more than one word in Accadian; in the 3rd person of the aorist, however, the native reader would know that he had to read *un-rû*. So the vowels of a root or suffix varied according to the vowels by which they were accompanied, and this variation had to be

observed in pronunciation, though the cuneiform character by which the root or suffix was expressed gave no indication of it. In the second place, a single ideograph might naturally stand for different ideas, each expressed by a different word, and the same idea might be represented by synonyms. Thus the picture of a star denoted also a god, and the representation of two legs might not only signify the legs, but also the ideas of walking, marching, and the like. Hence different phonetic values came to be attached to each cuneiform character, and since the vowel of the word denoted by it varied in accordance with the law of vocalic harmony, even when we are sure of the consonantal power to be assigned to a character in some given instance, we are not sure of the vowel or vowels that accompany it. Thirdly, a large number of objects and ideas could only be expressed by a group of ideographs, and the pronunciation of the word so represented naturally differed from that of the ideographs taken separately. Thus *arali* "Hades" is represented by three characters which respectively signify "house" *é*, "country" *kur* or *mada*, and "corpse" *bat*; but *è-kur-bat* would have been an unmeaning compound to an Accadian. So, again, *mušub* "the top of the head" is written with characters which, taken by themselves, would be read *tik-zi*, and *ebä* "a flood" with characters that would be read *a-dan*.¹ Fourthly, many words were accompanied in writing by a determinative prefix or affix, that is to say, by an ideograph denoting the class to which the word in question belongs. Thus *mā* "a ship" is preceded by the ideograph of "wood," and *tu* or *te* "a dove" is followed by the ideograph of "bird." Sometimes the determinative ideograph will, in conjunction with another, form a compound ideograph the pronunciation of which bears no resemblance to that of either of the characters when standing alone. *Alal* "papyrus," for instance, is represented by the ideograph of "vegetable," *gis*, followed by

¹ So the name of the Euphrates is written with two characters that would naturally be read *a-rat* or *a-sita*. Assyrian glosses, however, inform us that the right reading is *Pur-rat* "the winding water." I conclude, therefore, that the Accadian word for "river" hitherto read *aria* should be *purria*.

that of "writing," *siti*. Fifthly, the phonetic values which came to be attached to the characters were very often abbreviated forms of the full words for which those characters stood. Phonetic decay had attacked Accadian to a large extent, and for the purposes of a syllabary it was convenient to use the shortened rather than the full forms of the words. Thus *eme* or *emi* was "tongue" or "voice"; this was reduced to *me*, and the character expressing the idea received accordingly the phonetic value of *me* and not of *eme*. So the full form of the word which signified "good" or "goodness" was *khigi*; but as *khigi* became first *khig* and then simply *khi* in popular pronunciation, the ideograph which stood for it had the value, not of *khig*, but of *khi*, when used syllabically. Sixthly, it must be remembered that our knowledge of Accadian comes through the medium of a wholly different language, Semitic Assyrian. The phonology of Assyrian was profoundly unlike that of Accadian, and when the Assyrians borrowed the cuneiform system of writing from their Accadian neighbours, they had considerable difficulty in adapting it to the expression of their own system of sounds. The Accadians had no **𐎠**, and no **𐎡**, and made no distinction between *m* and *v*, or between the hard and soft consonants at the end of a syllable. And yet it is only through the Assyrian phonetic system that we can work back to that of the Accadian. The values assigned to the characters are the values assigned to them in the Assyrian syllabary. We know that there were two sibilants in Accadian, the characters containing one of these being made to represent the Assyrian **𐎢**, and the characters representing the other being made to represent the Assyrian **𐎣**; but what was the true pronunciation of these sibilants in the Accadian language it is hard to say. All we know is that the second sibilant, at all events, must have been sounded differently from the Assyrian **𐎣**; while as for the first sibilant, it is probable that the Assyrians distinguished in speaking between *sin* and *shin*, like the other Semites, though they were unable to do so in writing.

To overcome these difficulties, which beset the threshold

of Accadian phonology, we must have recourse to the following modes of assistance. First of all, there are the glosses which occur from time to time in the bilingual tablets. The Assyrian scribes sometimes indicate the true pronunciation of an Accadian ideograph or group of ideographs by writing it at the side in smaller characters. Thus a "water" and *nigin* "collected" form a compound signifying "a pool," but we should never have known how this compound was to be sounded were it not for a gloss which informs us that its pronunciation was *enigin* (W. A. I. ii. 29, 20). Secondly, the so-called syllabaria, in which the ideograph to be explained is put in the middle column, with the Accadian word written phonetically on the left and the Assyrian translation on the right, are naturally a great help. Thirdly, a comparison of parallel passages and a close observation of variant modes of writing a word must be constantly appealed to. In W. A. I. iv. 21, 15, for example, the ideograph which means to "establish" and has the variant powers of *mal*, *ma*, *gal*, *ga*, *e*, and *ilba*, is phonetically spelt *ma-al*, thus fixing the pronunciation as *mal*. Fourthly, the pronunciation of grammatical particles and suffixes may be ascertained in the same way. The postfixes, which are usually expressed by the ideographs *da* and *ga*, appear as *di* and *du* and *gi* in the gloss *tücündi* "thus," the words *uru-du* "bronze," and *zidu* "righteousness" (W. A. I. iv. 28, 2, 29), and the proper name *Düngi* "the strong one;" while in W. A. I. iv. 30, 1 *rev.*, the word which would naturally be read *mun-šukh-šukh-ges* "they have gone into battle with thee" is furnished with the variant readings *me-sisigg-es* and *mue-sisigg-es*. Similarly the sound of one of the third personal pronouns is determined by its appearing sometimes as *ib*, sometimes as *ab* or *ub*, sometimes as *ba* or *bi*. Fifthly, light is occasionally thrown upon the pronunciation of an Accadian word by the Assyrian word which has been borrowed from it. Thus the Assyrians borrowed *epinu* "a foundation" from the Accadian; the Accadian original would be read *apin* according to the strict letter of the characters by which it is represented; but the

Assyrian loan-word shows that we should pronounce *epin*, after the analogy of *enigin* "a pool," instead of *anigin*. Sixthly, recourse must be had to an induction based upon the general facts of language and laws of phonology. Much use, it will be seen, will be made of this expedient in the present paper.

I do not propose to give an exhaustive account of Accadian phonology, so far as it is at present possible, since this would exceed the limits of a paper and be of little interest except to some half dozen specialists; all I can do is to sketch its general outlines, to determine the value of the vowels, and to form a basis upon which future researches may be built.

(I.) The first and most important point to be investigated is the nature and number of the vowels. The written language, as seen through an Assyrian medium, possesses but four: *a*, *u*, *i*, and *e*; but many indications go to show that other vowel-sounds were known to the spoken language of Semitic Assyria itself, while the existence of ideographs with variant vowels, like *khat* and *khut*, *khar* and *khur*, *lab* and *lib*, *khir* and *khur*, points to the existence of the same fact in Accadian. We shall see reason hereafter for believing that the Accadians made full use of the lips in speaking; hence we should expect to find among them the vowels *ü* and *ö*. This is confirmed by the fact that in the passage referred to above (W. A. I. iv. 30, 1 *rev.*) we have the pronominal suffix *mun* replaced by both *me* and *mue*. We must explain the change of *mue* into *me* by considering that *mue* represents either *mü* or *mö*, and *me* either *mö* or *mü*. Now the following reasons make me accept the first alternative.

No one can study Accadian at all deeply without perceiving that a law of vocalic harmony prevails in it similar to that which characterizes most of the Ural-Altai languages. In Accadian, as in Ural-Altai, the accent falls on the root, that is to say, if possible, either on the antepenult or on the penult, and not on the final syllable, as was originally the case with both Aryan and Semitic. It is denoted by the

reduplication of the following consonant (as in Assyrian); thus we have *zálli*, *lákhhhi*, *mü-sisigges*, *citamma*, *gisimmär*, *babbara*. Now where the accent falls on the root-word and not on the postfixes, there is a tendency to harmonize the vowels of the latter to the vowel of the accented root-word, and this results in a law of vocalic harmony. An attempt is made to have the same vowel in every syllable of the word and its suffixes; and where this is not possible, the vowels are divided into two classes, strong and weak, a strong vowel in the root necessitating a strong vowel in the suffixes, and a weak vowel in the root a weak vowel in the suffixes. The strong vowels are *a* (*á*), *o* (*ó*), and *u* (*ú*), while the weak ones are *ä*, *ö*, and *ü*; *e* and *i*, into which *ö* and *ü* pass when the lips cease to be rounded, naturally being neutral vowels compatible with both the strong and the weak ones. The larger number of words in Accadian keep the same vowel in each syllable; thus we have *bábara* "silver," *dápara* "ox," *dimir* or *dingir* "god," *gúrus* "hero," *úrudu* "bronze," *gibil* "to burn," *uru* and *eri* "city," *mulu* and Cossæan *meli* "man." So the suffixed pronoun of the third person assumed the various forms *ab*, *ib*, *ub*, *ba*, *bi*, according to the vowel of the root-word to which it was attached. But where the same vowel could not be maintained, partly in consequence of composition, partly of intractable suffixes, the distinction of the vowels into strong and weak was had recourse to. The vowel of the postfixes had to adapt itself to the vowel of the root-word, and the Accadian postfix, accordingly, though always expressed in writing by the same ideograph, was pronounced with a strong or weak vowel in harmony with the vowel that had preceded it. In the later period of the language, most of the verbal postfixes became prefixes, through the influence, I believe, of the neighbouring Semitic, and the principle underlying the harmony of the vowels was thus thrown into confusion so far as the verbs were concerned. Hence the prefixed suffix was sometimes affected by the preceding word instead of by the verbal root to which it belonged; thus instead of the regular *in-läl-e* "he weighs," we find *babbara an-läl-e* "he weighs silver." The

extent to which phonetic decay had gone in Accadian further increased the confusion.

Let us now return to the question with which we started. The existence of two *u*-sounds in Assyrian, both represented by the same series of characters, is shown by such a fact as that no distinction is made in writing between *û* answering to the Hebrew *shûrek* and *ü* answering to the Hebrew *sh'wa*. The presumption thus arises that the Accadians from whom the Assyrians borrowed their writing also had more than one *u*-sound. This is borne out by our finding that, while *uru* "city" (for an earlier *muru*) becomes *eri* as soon as it loses the vowel-sound expressed by 𐎠 *ú* (𐎠𐎠 Gen. xi. 31) in Hebrew, the land of *Shinar*, the first syllable of which has *š* in Hebrew and *ε* in Greek (*Σενναάρ*), is written *Su-me-ri*. We have many other instances of the vowel-order *u-e-i*, and the inference seems obvious that the *u* in this case is different from what it is in a word like *uru*, and really represents *ü*. This inference is confirmed by several other facts. Thus *tu* "a dove" also appears as *te*, presupposing *tü*, and by the side of *ûmu* and *umma* (i.e. *ûma*) "mother," we find *umme-galal* "a nurse" (W. A. I. ii. 9, 40), which would presuppose *üme* with the accent on the first syllable. Then, again, there is one *u* which is not incompatible with *a*, as may be seen from such examples as *turara*, *cuga* "sunset," or *duma* (for *dunva*) "gone"; that another is so, however, is proved by the fact that the postfixes *da* and *ga* become *di* and *gi* in the words *tücüнди* and *Düngi* mentioned above.

In some of the transcriptions of Accadian words that have already been given I have assumed the existence of the sound *ä* in the language. This may be made clear in the following way. The gloss *e-nigin* "pool" for *a-nigin* shows that *i* required *a* to become *e*, a sound the nature of which we shall have to examine presently. But in a series of words like *ami* "crown," *dädi* "to equal," *arig* "foot," *apin* "foundation," we seem to have the rule neglected. *Apin*, however, was borrowed by the Assyrians, and in their language was phonetically written, not *apin*, but *epinu*, where the first vowel has the vowel-sound of the Semitic *y*.

Similarly, by the side of *essa* we find *esse-cü*, while *lakhkha* "pure" appears also as *lakhkhi*, *tura* "to descend" as *turi*, and *ibba* "fury" as *ibbi* (W. A. I. iv. 12, 38). In these cases we have to assign to *a* a power more or less resembling the Assyrian *e* (y) on the one side and the Accadian *e* and *i* on the other, and we are therefore justified in regarding it as *ä*. In this way, too, we can explain the equivalence of the roots *gan*, *gen* and *gin* "to establish" or "exist," pointed out by M. Lenormant, as well as the fact that the Accadian *sanibi* "two-thirds" appears as an Assyrian loan-word under the form of *sīnibu*.

But there seem to have been two vowel-sounds represented even by *i*. While *i* requires *e* as in *enigin* (for *a+nigin*) and *eri* (for *ürü*) or *ü* as in *Düngi*, elsewhere we get *sinik*, *siti* "to measure," and even *zigarü* "heaven," and *tidnü* "the rear." Now *gis* "tree" or "wood" becomes *ges* in *gestin* "the vine" ("tree of life"), from which we may infer that one *i* in Accadian, which we will call *i*₂, demanded a vowel-sound represented by *e*, and differed accordingly from the neutral vowel, which we will call *i*₁.

But *e* itself would seem to have denoted at least two different sounds. One of these, I believe, was *ö*. Just as in some cases *a* must have represented *o*, so *e* (*ä*) represented *ö*. Thus from the reduplicated root *dun* "to go" we have the participle *daduná* "marching constantly" (W. A. I. ii. 16, 2, 28) for *dun-dun-á*; and when we remember that the same root in its earlier form *dum* has produced the participial *dudumu*, it seems most probable that *daduná* should be pronounced *doduná*. Now, as we have seen above, the name of the "dove" is written sometimes *tu* and sometimes *te*; and since *uddu* "to go forth" (for *údu*) has been reduced to the simple sound of *e* through the intermediate steps of *ud* and *u* (like *u* for *ud* or *utu* "the day," Syll. A. 81), while in W. A. I. iv. 28, 1, 5, the ordinary demonstrative *na* "that" is written *né* after *udda* (*üdü*) "day," the conclusion is easily arrived at that *e* in these cases has the force of *ö*. In fact, *e* stands to *ö* in the same relation that *i* stands to *ü*. It may be added that two different characters were used in

Accadian to express the sound of which *e* is the Assyrian representative.

I have thus endeavoured to indicate the existence in Accadian of the vowels *a*, *o*, *u*, *ä*, *ö*, *ü*, *e*, *i*, and *i*₂; *a*, *o*, *u* being strong vowels, *ä*, *ö*, *ü* and *i*₂ soft ones, and *e* and *i*₁ being neutral. If *i*₂ had the value of *e*, *e* being the "obscure" *è*, the vocalic system of Accadian would agree very remarkably with that of the Tatar-Turkish idioms.

Among the strong vowels, however, I suspect that a difference existed between long and short *a* and *u*. While final *a* might be dropped in words like *dümü-mu-r* for *dumu-mu-ra* "for my son," *un-ma-l* "with my man" for *un-mü-la*, or *al-kut* for *an-kut-á* "accompanying him" (W. A. I. iv. 287, 4, 48), where the vowel must have been short, its length is expressed in other instances by writing the vowel *a* after a character which ends with the same vowel, as in *ta-a* for *tā*, *ta-a-an* for *tā'an*. Similarly we have *gā* (written *ga+a*) "to return" in contradiction to *gā* "ambrosia," though the former may have been pronounced *go*, since it goes back to an original *guru* through the intermediate forms *gur* and *gu*. So, too, *dū* "son," a contraction of *dumu* (through *dum* and *dun*), or *cūga* "precious," are essentially different from *cimmu* (*cimū*) "message," which becomes *cin*, or *muru* "the atmosphere," which becomes *mur*, *mer* (*mör*) and *mir*. Like the negative *nu*, again, the verbal modifier *su* when followed by *in* loses its vowel and forms the syllable *sin*, while the postposition *cu* is reduced to *c* before the plural affix *ene*. Ubara-Tutu is represented by Ὠτιαρτής ('Ωπαρτης) in Berosus, with *ω*, while Cudur-Lagamar is Χοδολ-Δογομόρ in the Septuagint with *ο*. The latter transcription, if it could be trusted, might imply that *ū* was sometimes sounded *ö*.

The vowel could also be nasalised; at all events there was a nasalised *ū* and *ī*, and probably also a nasalised *ä*. A good example of a nasalized *ū* occurs in the Accadian name of a character which differs from one which has the phonetic value of *dhu* only in having a few additional wedges. The character is called not *dhu-gunū* "dhu with

additions" (literally "tailed *dhu*"), but *dhun-gunu*, where we should write either *dhuñ* or *dhū*.

The vocalic system of the Accadians accordingly consisted of *a*, *ā*, *i*, *e*, *o*, *u*, *ū*, *ä*, *ü*, *i*, *ū*, *î*, and probably *ã*. It may seem strange at first sight that so many of these vowels were only roughly distinguished from one another in writing. But this was due to the ideographic origin of the syllabary. A single ideograph had to express more than one idea and word as well as different pronunciations of the same word according to its phonetic position, and therefore to distinguish between the more prominent vowel-sounds, *a*, *e*, *i* and *u* was as much as could be done. Even these could not always be clearly marked off from one another, and hence the same ideograph is indifferently *nim* or *num*, *khar* or *khir*, *gal* or *gula*. The same indistinctness is observable in the case of the consonants also, though of course not to so great an extent as in the case of the vowels. Thus we are told to pronounce the participle *dūma* ("going") as *tūma* (W. A. I. ii. 29, 28), and *cūgi* ("gold") as *gūski* (W. A. I. ii. 1, 111).

The Accadians possessed a whole row of diphthongs besides the simple vowels. The most common are *ae* (? *oi*), and *ua*, as in *zæ* "thou" by the side of *zu* and *za*, *acæ* "(he) measures" (which may, however, be read *acað*), *in-khigies* "they did good," *guana* "the middle," *uatu* "to bear a child." M. Lenormant¹ has acutely observed that the diphthongal power of *ua* is proved by a passage in W. A. I. ii. 32, 53-55, where we read *lucu atu* instead of *lucu uatu* "the mother who has borne." Other diphthongs that are found are *ai*, *au*, *ea*, *ei*, *ia*, *iu*, *ue* and *ui*, though the exact pronunciation of them must remain uncertain. *Ev*, that is *ör*, also takes the place of *ū*, and where the same vowel was repeated for grammatical reasons the two vowels were pronounced separately, as in the participle *gā'a* "returning" or the present *inde'e* "he brings back."

(II.) We now come to the consonants. Here the Accadians experienced a difficulty in distinguishing between a *tenuis*

¹ *Études sur quelques parties des Syllabaires cunéiformes*, p. 213.

and a *media*. At the end of a syllable (unless followed by a vowel) no distinction was made between *b* and *p*, or between either the different dentals or the different gutturals. At the beginning of a syllable no distinction was made between *b* and *p* when followed by *u* (*ü*) or *e* (*ö*), and *g* was frequently pronounced the same as a sound which I conventionally represent by *k*. The Hebrew and Greek transcription of *Purrat* "the Euphrates," however, shows that, even before *u*, *p* was more original than *b*. *M* was not allowed at the beginning of a syllable, where it was sounded like our *w*, and the same character has always to serve for both *m* and *v* (*w*). M. Lenormant¹ has pointed out that Accadian objected to the meeting of two consonants, allowing it only very rarely, as in the meeting of a guttural with a dental (*ct*, *khd*) or labial (*cp*, *gb*), or of a sibilant with a guttural (*sk*) and liquid (*zl*, *zm*).

After these general remarks, the consonantal sounds may be discussed in order. (1). There were three gutturals, the characters expressing which were afterwards adopted by the Semites to express their own *gimel*, *caph* and *koph* (*g*, *c* and *k*). *G* seems to have had a sound resembling that of the Finnic γ or the Arabic ξ , or the sound heard in words like *nagen* in Northern Germany.² When standing between two vowels it is represented by the Hebrew \aleph in the transcription of proper names, *Lagamar* being represented by $\aleph\text{מ}\aleph$ (Septuagint $\Lambda\omicron\gamma\omicron\mu\acute{o}\rho$), and it regularly becomes the guttural aspirate *kh* (German *ch*) at the beginning of a syllable. Thus the precative particle *gan*, *ga* becomes *kha*, *khuda* "a charm" comes from the root *gu* "word," and *khud* "dayspring" from *cun* "to shine," the affix *dä* being attached to the contracted *cu*. *Kha*, as we shall see, further passed into *ha* and 'a. The loss of final *g* hardened the preceding vowel into a diphthong as in *gie* "night" for *gig*. *C*, our *k*, might become *g* when followed by *u*, *ü* under the influence of a neighbouring guttural, as in *güski* "gold" instead of

¹ *Op. cit.* pp. 39, 40.

² The Assyrians found a difficulty in pronouncing the sound. Thus *nanga* "a district" was borrowed under the form of *nagu'u*.

cūs-ki or *cūs-gi*, and *cūga* "sunset" by the side of *gig*. The same change could also take place before *u* or *a* following, as in *Agu* "the Moon" for *Acu*. The true sound of *k* is difficult to ascertain. It preceded only *i* and *u* (*ü*) not *a* unless the latter were pronounced *o*. It was not far removed from the sound of *g*, however, and frequently passed into the latter sound. The Semitic Babylonian dialect was affected by a similar inclination to interchange *ḳ* and *ḡ*, due probably to Accadian influence. A preceding sibilant hardened *g* into *k* as in the case of *güski* given above.

A curious interchange seems to take place between *g* and *m* at the beginning of a word. By the side of *mal* or *ma* "to establish," for instance, we find *gal* or *ga*, and *damalla* "mother"¹ is also written *dagal(la)* in W. A. I. iv. 9, 24, 28. So, too, an unedited tablet (K. 4604 *obv.*) gives *a-marra* as a variant pronunciation of *a-garra*, the equivalent of the Assyrian *me rakhatsu* or *me sakhatu* "a flood of waters." Probably *g* was sounded in these cases as *gw*, and initial *m* had rather the sound of *w* than of *m*. That the sound in question existed in Accadian is proved by the word *guana* "the middle."

(2). Corresponding to the three gutturals are three dentals, which were made to do service for the three Semitic gutturals; though as the dental which I conventionally represent by *dh* did not precede *a*, the Semitic dental system was thereby thrown into confusion. *T* tended to become *d* after a nasal; thus by the side of *ib-tan-gub* (or rather *ip-tan-gub*) "he caused to fix," or *an-ta-dudumu* "it is constantly made to go," we have *in-du-gal* "he caused to exist," and *ba-n-da-gig* "he caused him to be sick." On the other hand, it would really seem that initial *d* could be hardened into *t*, since we are told (W. A. I. ii. 29, 28) that the participle of *dun* "to go" was pronounced *tumma*; but the explanation of this probably is that the Assyrian scribe had found the word in some text where it was preceded by a letter (perhaps *p*) which had the effect of hardening the dental. Initial *d*, however, must have

¹ The two words stand for *dam-mäla* and *dam-gäla* "mistress of the house." There is, perhaps, a connexion between *dam(a)* "mistress" or "wife," and *dumu* "son."

had a somewhat sharp sound, since the Accadian *Dumu-zi* is represented by *Tammuz* in the Semitic dialects, although the Assyrian equivalent is *Dūzu*. At the beginning of a word original *t* not unfrequently becomes *d*, as also when it is flanked on both sides by *u* (e.g. *sutul* and *sudun* "yoke"). *Dh* bore the same relation to *d* that *k* did to *g*. It could be followed only by *u* (*ü*) and *i*, and before *i* very often passed into *d*. Possibly it had something of the sound of the Hungarian *gy*. It is noticeable that the character which has the values of *dhi* and *dhum* (i.e. *dhū*) has also the value *khī*, though this may be accidental.

(3). Accadian was poor in labials. *P* generally became *b* when followed by *u*, and so far as can be discovered there was no *f*. One of the dialects spoken in Chaldea, perhaps in Sumer or Shinar, was characterized by the substitution of *m* or rather *w* for *b*, as in *ma-n-sun* "he gave," instead of *ba-n-sun* (W. A. I. ii. 40, 76).¹ We may notice that before *b* the negative *nu* appears as *nam*.

(4). No distinction was made between the sounds of *m* and *v* (*w*), at all events in writing, though it is certain that in some cases (as before *b*) the sound of the *m* predominated. Final *m* (as in Latin) formed with the preceding vowel a nasalized vowel-sound; thus while we have *tumma* "going" and *dudumu* "constantly made to go," the usual form of the root is *dun*, i.e. *dū*, which is still further reduced to *du*, unless a vowel follows as in *daduná*. Other instances will be *cimmu* (*cimū*) and *cin* "message," *šemmu* (*sömmü*), *šunnu*, and *še* "to give," *dumu*, *dū* and *dū* "son," etc. Between two vowels *m* became *ng* as in Mongol; thus by the side of the earlier *dimir* "god" stands the later *dingir*, and the Accadian *Sūmeri* (*Süngöri*) is represented by the Hebrew שִׁמְרִי, where the same attempt is made to express the Accadian guttural by the Semitic *y* as in לַעְמָר for Lagamar. Sumer or Sungir was called *cengi* or *ciengi* "the land" *par excellence*, and I would connect with the latter another name of the country, *Came* (*Cämö*), which occurs in an old geographical

¹ The same dialect also seems to have used *ir* in the sense of "going" instead of the Accadian *aru*.

list. *Cāme* would naturally become *cengi*, the final vowel being shortened and the first intensified, and the suggestion is confirmed by the fact that before *cala* "strong" *cengi* becomes *can* in *cancal* "strong place" or "height." It must be added that the change of medial *m* into *ng* is not always expressed in the writing, simple *n* sometimes standing in the place of *ng*. Before *u*, *m* seems almost invariably to have had the sound of *w*, which, like the Greek digamma or our *Woolwich*, was very often dropped. Thus we find *mus* and '*us* "a male," *mūs* and *is* or *es* (ös) "three," *mul* and '*ul* "a star," *murū* (in *murub* "the city") and '*uru* "a city," *mur* and *ur* "the liver." It is possible that *man* by the side of *in* and *ana* "king" (literally "exalted one") may show that the same loss of the consonant could take place before *a*. The plural affix *mes* "many" dropped its initial letter when attached to the verbal stem in the plural of the aorist, the vowel (which was probably *ö*) being assimilated to that of the verb. Thus we get *in-šunn-us* "they gave," *in-gen-es* "they established," *in-läl-es* "they weighed," *mu-gag-as* "we made." In Protomedic and Susianian, where the plural of the noun may be expressed by the contracted *me* as well as by *mes*, the initial is similarly always dropped in the plural of the verb; e.g. *turnas* "(they) knew," *cusis* "(they) built," *battus* "(they) obtained."

(5). There were several nasals in Accadian, one of them, I believe, being *mouillé*; but as they are all written alike, with the exception of *ng*, it will be necessary to treat them as a single sound. We have already seen that final *m* or *w* (for the Assyrians represented it by both sounds) became a nasal, and the final nasalized vowel might itself disappear, leaving a long syllable. Thus to take the common root which means "to go," we have the series *dum*, *dū*, *dun*, *dū*. The nasal might be dropped before another consonant, especially if this were a guttural or a dental. Thus *ga-gar* stands for *gan-n-gar* "may he make," *an-ta-dudumu* "he is constantly made to go," for *an-tan-duddumu*, *in-da-gal* for *in-dan-gal* "he caused to exist." I suspect, however, that the nasal sound, though unex-

pressed in writing, was not altogether lost in these cases. Before the labial *b*, the precativè suffix *gan* becomes *ga* or more often *kha* and even *ha*, while we find the demonstrative pronoun *gan* becoming *khu* before *mu-n-rù* "I built it" (W. A. I. i. 4, xiv. 1). There is also a strong tendency for *n* to pass into *l*. This is regularly the case before a guttural or a dental, when the nasal is not lost altogether; e.g. *al-gubba* "he fortifies" for *an-gubba*, *al-galla* "he exists" for *an-galla*, *al-dunna-s* "when he comes" for *an-dunna-s*. Similarly by the side of *sudun* "a yoke" stands *sutul*; though this may be an example of dialectic variation, as in the case of *nad* and *lad* "a country." It is probable that to the same cause of dialectic variation is due the varying pronunciation of the name of the Tigris as 'Idikna and 'Idikla. The latter was further corrupted into *Diglat* and *Tigris* on the one side and *Dalla* on the other (W. A. I. iii. 70, 47), while the Hebrew transcription הַדְּקָל shows that the word once began with an aspirate *h*, if not with *kh*. It is more difficult to suggest a meaning for the name than in the case of the Euphrates, which is written in Accadian *Pur-rat* or "winding water." It is probable that *gan* and *gal*, both meaning "to exist," were originally the same word. I would also suggest the equivalence of *enüm* "high," "lord," *enim* "height," *ana*, *enna*, "high," and *anunna* "spirit," as well as of *elim* or *elüm* "lord," *alam* "master," and *ili* "high." M. Lenormant¹ has shown that *til* and *tin* "life" are both one and the same word. In this case the final *l* of *til* was dropped and compensation made by nasalizing the vowel *tî*, the nasalized vowel hardening into a distinct nasal before a following vowel.

(6). *R* had a markedly rough sound, and we sometimes find it interchanging with *l* at the end of a word. Thus the root which means "to burn" has the double form *gibil* and *cibir*, *gibil* being the one most in use in the standard (Accadian) dialect, and *mal* and *mar* "to dwell," like *šagar* and *šagahum* "a judge," stand side by side. Similarly in

¹ *Études sur quelques parties des Syllabaires cunéiformes*, p. 103.

Susianian we find the divine name Lagamal as well as Lagamar. *R* would seem to be more original than *l* in these words, and in the case of *cibir* its strength has caused the preservation of the stronger *c* (instead of *g*) in the first syllable.

(7). There were several distinct sibilants. I believe there was no sibilant, however, corresponding to our *sh*, as the Assyrians had no means of marking a distinction in writing between *s* and *sh*, though several facts make it clear to me that that distinction existed in pronunciation. On the other hand, the Accadian alphabet possessed *s*, *z*, and two other sibilants, one of which, conventionally transliterated *ts*, could only precede *u* and *i*. This sibilant, therefore, corresponded with the guttural *k* and the dental *dh*, and belonged to the same class of sounds. *Z* was probably sounded like our *z*, and the sibilant conventionally represented by *ś* like the hissing Magyár *sz*. Before certain consonants *s* became *z*; thus we have *ciz-lukh* and *ciz-makh* "a high place," and I am inclined to think that *gis* "wood" or "tree" became 'iz in Accadian partly through the influence of the Semitic *ets* (עץ), partly through the analogy of those cases in which *gis* (*khis*, 'is) stood before a liquid. *Gúski* shows that the change in question did not take place before a guttural. That *z* and *ś* were not far apart in sound may be seen from *śigiśše* "sacrifice" (*śigiśe*) by the side of *gaza* and *caś* "to sacrifice," as well as from the equivalence of *serzi* and *serśi* "a ray."¹

(8). The aspirates now alone remain. We have already had occasion to notice *kh* in speaking of the common change of initial *g* into it. As has already been mentioned *kh* in its turn was reduced to *h* and even lost altogether. Thus the precativè particle *gan* takes the various forms of *gā*, *kha*, *ha* and 'a. So, too, *cuba* "clothed" stands by the side of 'ukhba "clothing," where the participle has lost *kh*, though preserving the initial *c*, and the Hebrew *Khiddekel* by the side

¹ I believe that the Assyrian *cúśsu*, Heb. כִּסִּי "a throne," was borrowed from the Accadian *guza* with the same signification. The Aramaic *corsai* (Syriac *curs'ya*) and Arabic *curs'ya* which insert *r* seem to imply a pronunciation of *s'* which was hard to Semitic mouths. We may compare the case of the Assyrian *manzu* which is borrowed from the Accadian *metzi*.

of the Accadian *Idikla* is another case in point. *Kh* also fell away at the end of a syllable, *nitakh* "man," for instance, becoming *nita* and even *nit*, *Serakh* "the god of corn" *ser* (W. A. I. ii. 59, 21). In one case we may have an interchange of final *kh* and *p* (like that of *k* and *p* in Finnic), since the same ideograph was pronounced *dikh* when it signified "stone" or "signet," and *dip* or *dup* when it signified a "clay tablet." *Tak*, however, was also "stone," and *takh* (also *dukh* and *dū*) was "brickwork."

In giving this sketch of Accadian phonology, I have often had to notice the extent to which phonetic decay had proceeded in the language before the earliest texts of which we know were composed. This is a point to which M. Lenormant has called special attention,¹ and it is brought out very clearly in the glosses of the Assyrian scribes. There was no letter or syllable which was secure from weakening and loss, and no part of the word from which it might not disappear. As Accadian words, however were accented rather at the beginning than at the end, final syllables and letters suffered more severely than any others from the action of phonetic decay. I have already alluded to the loss of the final vowel in the larger number of originally polysyllabic roots, as well as of the final *kh*, *m* and *n*. A dental might be dropped, as in *u* for *ud* or *udu* (*utu*) "a day," or in *usū* "sunset" for *ut-su* (*ussu*), as it is still ideographically written. *Uddu* "to depart" was even reduced to *e*, and *ad* or *ada* "father" to *a*. The guttural fared no better. *Gie* or *ge* for *gig* (*gigä*) has been previously noticed, and *khi* for *khig*(*ü*) "good" or *dū* for *duk* "to have" are other instances of the fact. A final *l* or *r* was treated similarly. Thus *tila* first becomes *til*, then *tī* or *tin*, and finally *tī*, while *r* regularly disappeared before a following consonant. *Gargig* "the doer of evil," for instance, was pronounced *gagig* and was sometimes written phonetically, *garnam* "everything" was sounded *ganam*, and *ner* "foot" became *ne*. Even the sibilants were equally subject to the action

¹ *Les Principes de comparaison de l'accadien et des langues touraniennes*, p. 22, and *Etude sur quelques parties des Syllabaires cunéiformes*.

of decay. *Güski* "gold," a compound of *gi* "dark" (for *gig*) and what is usually written *cu* "precious metal," shows us that the latter word originally possessed a final sibilant. So, too, *ciz-lükkh* "high place," implies that *ci* "place" once ended in *z*, and *es* "house" usually appears as *é*. The vowel of *ci* becomes *a*, or rather *ā*, in *caneal* "strong place," as a gloss (W. A. I. ii. 52, 72) tells us what is written *ci-cal* should be read. M. Lenormant has been the first to call attention to the fact that the primitive final consonants can be recovered by observing the form assumed by a word when the suffix of declension or conjugation is attached to it; the final consonants being dropped when the word stands by itself, but reappearing before an affix. Thus the primitive form of *kha* "fish" is found in *khana-cu* "to the fish," which M. Lenormant compares with the Finnic *kala*, Lapp. *guolle* and *kuele*, Tcheremiss *kol*, Ostiak *khut'* and Mongol *kal*; the singular *in-sö* "he gave" becomes *in-sümmüs* "they gave" in the plural (W. A. I. ii. 11, 22) and *sümmü-nin* "he gives" in the older postpositive conjugation (W. A. I. ii. 12, 26); and the same primitive conjugation furnishes us with the roots of *khi* "to be good" and *si* "to keep up" in the forms *khiggi-nin* and *siggi-nin* (W. A. I. ii. 12, 32). The name of the king who has been compared with the Biblical Arioeh is variously written Erim-Acu, Eri-Acu, Rim-Acu, and Ri-Acu, "the servant of the Moon-god," where the varying action of phonetic decay is particularly to be noticed. I would also draw attention to the words borrowed by the Semites from the Accadians at an early period, before Accadian began to borrow in turn from Semitic. These are invariably taken from the fuller forms of the Accadian terms; thus we have *dnu* "to judge" by the side of the Accadian *di* (W. A. I. ii. 7, 32) and *samu* or *šihamu* "blue" or "brown" by the side of the Accadian *ša* (W. A. I. ii. 1, 178). To M. Lenormant, again, we owe the formulation of the law of broken reduplication in Accadian. *Bar* "to be white," for example, though written *barbar* in its reduplicated form, was pronounced *babbar* and *bábar*, *gargarra* was sounded *gaggar* and *gágar*, and reference

has already been made to the avoidance of a double consonant in an Accadian word.

But though phonetic decay chiefly attacked the final sounds and double consonants within a word, it also affected initial sounds, as may be seen from such instances as the royal name Erim-Acu, the loss of initial *m*, or the transformation of *gan* into *kha* (or *khu*), *ha*, and *'a*. As M. Lenormant has shown, the Accadian *hidu*, "the moon," connects itself with the Finnic *kuu*, the Vepse *kudai*, the Vogul *kolita* and the Hungarian *hold*, and *ukhba* instead of *cukhba* has already been referred to. *Sigišše* "a sacrifice," again, can hardly be disconnected from *gaza* "to sacrifice," and *minnäbi* "twice" appears frequently after another word in the contracted form *näbi*. What M. Lenormant calls a "prosthetic vowel" is, I believe, part of the root which has been lost in the greater part of the derived forms; thus the Elamite *esrit* makes it clear that the Accadian *usar* "bank" is more original than the shortened *sar*, and the same must be said of *eme* "tongue," by the side of *me*, or of *rä* "to go" by the side of *ara* and *ir*. *Ugude* "an announcing" (W. A. I. ii. 7, 46) shows that *ügü* is an earlier form of *gü* "to speak," of which *ca* is another form, and the series *enüm*, *inim*, *nüm*, *ana*, and *na*, all meaning "high," together with the allied *ana* and *na* "sky," *anunna*, *nun*, *nin*, and *ni* "lord," can only be explained on the supposition that *enüm* (*önüm*) or *anam* is the primary form. M. Lenormant's *adu* "a going," is not a case in point, as the correct reading is *ara*, from which was derived *arig* (*örig*) "a foot."

We must, therefore, conclude that Accadian did not make use of prefixes in the formation of its isolated words. In the case of the final letters, however, it is not always certain whether we are dealing with an example of phonetic decay, or whether the longer form is a derivative created by the help of affixes. On the one hand the varying forms *mal*, *mar* and *ma* "to dwell," all go back to an original *mar*; but on the other hand, *dimirä* or *dingirä* "a god," is proved by the cognate words *dimme* "spirit," *dimmeä* "spectre," *dimma* "king," and *dim* "feeble" or "vain," to be a derivative

formed by means of the suffix *-ra*. Our difficulties upon this point can only be removed by further acquaintance with the Accadian vocabulary and careful comparison of allied words.

Before concluding this paper, I ought to draw attention to the fact that Accadian should be studied in connexion with the dialects of ancient Susiana (Susian, Amardian, Cossæan, and Protomedic), along with which it forms a single group. They not unfrequently cast light one upon the other. And though our monuments of Accadian reach back beyond B.C. 2000, they show that the language was already an old one and largely affected by phonetic decay, while the differences existing between it and the kindred dialects of Elam presuppose a long period of separation. We must never forget the extent to which the ideographic character of the writing conceals the real nature of Accadian phonology and at first sight inclines the beginner to fancy he is dealing with a language that resembles Chinese. The influence exercised by the encroaching Semitic dialects had no doubt much to do with the widespread action of phonetic decay.

Modern scientific philology rests upon phonology, and until we have ascertained the main features of the phonology of a language, dogmatic assertions in regard to its nature and relationship are worth very little. Unfortunately a certain class of scholars has been too apt to form hasty conclusions as to the linguistic position of Accadian, and to base an assertion or a denial of its Ural-Altai character upon a scanty and inaccurate acquaintance with its grammar and a still more scanty and inaccurate acquaintance with its phonology. So far as I can see, the larger knowledge of both grammar and phonology which is continually being acquired goes wholly to confirm the truth of M. Lenormant's hypothesis that the Accadian group of tongues is to be added to the others which make up the Ural-Altai or Turanian family of speech. Only those who have worked in the same field can properly appreciate the value of that scholar's indefatigable researches, and if some of his statements may require correction from time to time, it is only what must happen with all honest work in a progressive branch of study.
