

ART. XVI.—*Suggestions on the Voice-Formation of the Semitic Verb. A Comparative and Critical Study.* By G. BERTIN, M.R.A.S.

EVERY race has in the course of time endeavoured, as the want of new expressions made themselves felt, to enlarge its vocabulary according to its turn of mind, or what is called its genius, either by mere agglutination or by affixes, etc. The Greeks, for example, have multiplied the number of their verbs in combining them with prepositions: the Semites seem to have followed a similar, though not identical process, which, however, has till now resisted all analysis. I propose, therefore, in this paper to examine those formatives which, with the verbal stems, have given birth to the voices. It must be remembered that the word "voice" is not used here as in the Aryan Grammars, but is used to designate the various modifications suffered by the stem and altering its meaning.

These modifications are brought about in two ways; namely, by affixes (prefixes or infixes), which are very extensively used, and by reduplication of part of the stem. The affixes are reduced often to a single letter, the vowels not being clearly expressed in most of the written Semitic tongues; and their modifying letters have been called "servile,"<sup>1</sup> because they serve to form new voices and are not part of the root. The process of reduplication, on the other hand, has been artificially limited to one part only of the stem. None of the Semitic tongues possesses the formative system fully and completely developed, but in each, traces of all or nearly all the voices are found. There is also in some dialects a series of passive voices formed by changing the inner vocalisation of the active.

<sup>1</sup> See note on next page.

For convenience of reference, I give here the table of the verbal voices of the principal Semitic dialects, following the classification of M. Renan (*Mémoires de la Société de Linguistique de Paris*, vol. i. p. 97) and taking as type the stem *qabal*.

	Primary Form.	Secondary Form.	Tertiary Form.
<b>KAL.</b>			
Assyrian	<i>qabālu</i>	<i>qitabulu</i>	<i>qitanbula</i>
Hebrew	<i>qābal</i>	"	"
Aramæan	<i>qēbal</i>	<i>'etqēbal</i>	"
Arabic	<i>qabala</i> (1)	<i>'iqtabala</i> (8)	"
Ethiopian	<i>qabala</i>	<i>taqabala</i>	"
<b>APHAL.</b>			
Assyrian	"	"	"
Hebrew	<i>hiqbil</i>	"	"
Aramæan	<i>'aqbel</i>	<i>'ettaqbel</i>	"
Arabic	<i>'aqbala</i> (4)	"	"
Ethiopian	<i>'aqbala</i>	"	"
<b>NIPHAL.</b>			
Assyrian	<i>naqbulu</i>	<i>itaqbulu</i>	<i>itanaqbulu</i>
Hebrew	<i>niqbāl</i>	"	"
Aramæan	"	"	"
Arabic	<i>'inqabula</i> (7)	"	"
Ethiopian	<i>'anqabala</i>	"	"
<b>SHAPHEL.</b>			
Assyrian	<i>sugbulu</i>	<i>sutaqbulu</i>	<i>sutanaqbulu</i>
Hebrew	"	"	"
Aramæan	<i>saqbel</i>	<i>'estaqbel</i>	"
Arabic	"	<i>'istaqbala</i> (10)	"
Ethiopian	"	<i>'astaqbala</i>	"
<b>PAEL.</b>			
Assyrian	<i>qubbulu</i>	<i>qitabbulu</i>	"
Hebrew	<i>qibbel</i>	<i>hitqabbel</i>	"
Aramæan	<i>qabbel</i>	<i>'etqabbel</i>	"
Arabic	<i>qabbala</i> (2)	<i>taqabbala</i> (5)	"
Ethiopian	<i>qabbala</i>	<i>taqabbala</i>	"
<b>PÔEL.</b>			
Assyrian	"	"	"
Hebrew	<i>qôbel</i>	<i>hitqôbel</i>	"
Aramæan	"	"	"
Arabic	<i>qa'bala</i> (3)	<i>taqa'bala</i> (6)	"
Ethiopian	<i>qa'bala</i>	<i>taqa'bala</i>	"

REMARKS.—Assyrian.—As this dialect does not possess an Aorist-Past proper, I give here as model the infinitives. In the secondary and tertiary voices of the Niphal, the characteristic *n* disappears in the infinitive and is assimilated to the *t* in the other tenses. There are few examples of a niphal with the second radical doubled *naqabbulu*, which recalls to mind the rabbinical niphael. There are also traces of few other forms.

Hebrew.—In this dialect are found traces of a tiphel and shaphel, and also a miphel, this last being, however, very doubtful. The verbs having a vowel as middle radical form regularly a pael. A passive by vocalisation is found for few voices: *hiqbil* pass. *hoqbal*, *qibbel* pass. *qubbal*, *hitqabbel* pass. *hotqabbal*, *qôbel* pass. *qôbbal*.

Aramæan.—Syriac and Chaldean have traces of many other voices formed by inserting *u* or *w*, *y*, *m*, and *r*, by prefixing *m*, *s*, and *t*, and by doubling as a pael, palpel, this last voice is much more used than in Hebrew. In every case these

*Prefixes.*

The prefixes, or servile letters placed before the stem, are *a* (or rather the aspirate *h* or *ʿ*), *n*, *t* and *s*; they form the voices or derivatives named by the grammarians *aphal*, *niphal*, *tiphel* and *shaphel*. The first three of these prefixes recall to mind, and are identical with, the prefixes used to form the persons of the Aorist-present; on the other hand, Prof. Lee, among others, has already in his grammar<sup>1</sup> assimilated the nominal formative letters with those forming the voices of the verb. In a previous paper<sup>2</sup> I endeavoured to show that these nominal prefixes were the same which are found as personal prefixes in the Aorist-present, and I therefore think that all three may be traced back to the same origin, that is, to auxiliary verbs meaning 'to be,' 'to stand,' 'to exist' and the like. But this fact will be thrown in a clearer light by a careful examination of each preformative.

*Prefix 'a.*—This prefix is really a simple and slight aspirate, *h* or *ʿ*, it often appears even under the form of *y* or *i* and also *u*, the aspirate being so entirely absorbed by the vowel.<sup>3</sup>

There is in the Semitic tongues a verb formed by a single

voices have as passive a secondary or *t*-voice, though there are also few traces of a passive by vocalisation.

Arabic.—There are, besides the following voices, '*iqbanlay* (15), '*iqbanlala* (14), '*iqbawbala* (12), '*iqbawala* (13), '*iqballa* (9), '*iqba'lla* (11), which are rarely used. The numbers given between brackets are those of the order adopted by the Arab grammarians. All the Arabic voices form regularly a passive by change of vocalisation.

Ethiopian.—By analogy, the following voices have been developed:—

'*aqabbala* (aphel of pael), '*astaqabbala* (pael of istaphel),

'*aqabala* (aphel of pōel), '*astaqabala* (pōel of istaphel),

which are little used; there are traces of few other voices, and of a passive formed by vocalisation.

<sup>1</sup> Lee's Hebrew Grammar, § 157, *et seq.* (third edition, 1841).

<sup>2</sup> Journal of the R.A.S. Vol. XIV. p. 105.

<sup>3</sup> It may be said that all initial vowels are always accompanied by an aspirate; when two vowels meet, if they do not coalesce, the speaker must separate them with an aspirate. This seems evident in English, where the *hiatus* is admitted in poetry. The fact that in the Anglo-Saxon alliterated poetry words beginning by a vowel rhyme together, their vowels being generally not the same, shows that what rhymes is not the vowels, but the *unwritten aspirate*, so in this verse of the Beowulf:

unriht æfnde, 6ð ðæt ende becwóm

the alliterated words begin by an aspirate 'unriht, 'æfnde and 'ende. In the tongues where the aspirates are nearly altogether lost, all the words of a sentence are united together as forming one word as in French, or the vowels when meeting are fused together and form complicated diphthongs as in Italian.

aspirate, which has been trilaterised in various ways, keeping always its primitive meaning of 'to be,' 'to exist.' In Hebrew we have *hayah* 'to be,' 'to exist,' *hawah* 'to breathe,' 'to exist'; these two verbs were primitively the same, the Chaldee actually uses *hawah* or *hawa'* for *hayah*, the other form '*awah* supplies a derived meaning 'to become,' then 'to go forward in mind,' hence 'to desire' and 'to love'; it may be noticed besides that this last word is of a restricted use in Hebrew, and could often be translated by 'to be,' as in Prov. xxi. 10. With a similar meaning, '*away* is more used in Arabic, where was developed also another 'to become,' then 'to pass,' hence 'to die.'<sup>1</sup>

It is from this primitive verb 'to be' that is derived the formative of the Aphel, or, rather, this formative is indeed this very verb in an abbreviated form. The original and primitive meaning of the prefix is often clearly retained in nouns, as in the Hebrew '*ezrah* 'home-born,' i.e. 'one who is native'; '*azkarah* 'a memorial'; '*hanahah* 'what is the rest.'<sup>2</sup> This formative is used to form verbs even with substantives, as in Hebrew '*heymyn* 'to be right-handed,' and also 'to be going to the right-hand side'; '*hišmi'yl* 'to be left-handed' or 'to turn to the left.'<sup>3</sup>

The voice so formed with the verbal stems is found in all the Semitic tongues, except Assyrian, where there are, however, traces of it.<sup>4</sup> On account of its origin, the Aphal has a very wide meaning. It either takes the same meaning of the Kal, or emphasizes it, as *he'edim* 'to appear red,' from '*adam* 'to be red,' as a natural development has grown a causative meaning and the same word even appears with two meanings, as *hiłbyn*, 'to make white' and 'to appear white.'

The prefixing of the light aspirate changes so little the

<sup>1</sup> In his grammar Prof. Lee, after connecting the two prosthetic letters, Aleph and He, seems to infer that all these verbs have the same origin. It is natural to suppose that, as in other cases, the different forms were distributed and localized to express various and different meanings.

<sup>2</sup> The words formed by prefixing yod, as *yžhar* 'oil' from *zahar* 'to shine,' are very few, and might be even considered as third persons of verbs used substantively like the French *vaurien*, *fainéant*.

<sup>3</sup> Similarly the French have derived from *gauche* a verb *gauchir*.

<sup>4</sup> In Assyrian there are verbs formed by a prefix placed before adjectives, as *a-tābu* from *tābu* 'good.'

primitive meaning that it has been largely used to trilateralised biliteral roots, and it explains why we find side by side such verbal forms as *sūm* and '*aśam*, 'to place, to lay.'

It must not be forgotten that the primitive verb *hayah* or *hawah* represented in compounds by the simple aspirate, is more a verb denoting the state than a verb "to be" in our modern sense of the word. The real verb "to be," which nearly always carried with it the passive meaning, we find in our next prefix, *n*.

*Prefix n*.—This prefix, formative of the niphāl so extensively used in all the Semitic dialects, has also been largely employed in the nominal formation, and the words so formed always retain clearly their derivation, as the Heb. *nōšab*<sup>1</sup> 'inhabited,' the Chaldee *nišba'* 'hardness.'<sup>2</sup>

Though the primitive meaning of the niphāl formative has been in all cases clearly retained, the primitive verb has disappeared. I think, however, that we have this primitive substantive verb in *nūn* in Hebrew; this verb has remained till now unexplained, but in the few places where it appears the context shows clearly its meaning of a verb 'to be.' I think, therefore, that we have in the niphāl prefix a shortened form of this verb; a derived weakened but trilateralised form is found in *nawah*, with the developed meaning 'to sit, to rest, to inhabit.'<sup>3</sup>

As we might have naturally expected, the principal meaning of the niphāl is passive: *nipqad* 'to be visited'; it has, however, in some verbs a more developed meaning, as the Latin deponent verbs, often reflective: *nišpat* 'to judge for oneself,' i.e. 'to plead,' *nōhaš* 'to consult,' from *yahaš* 'to advise.'

<sup>1</sup> The long *ō* is represented by *ō* when the Cholem is placed over a quiescent vowel.

<sup>2</sup> It must be remembered that according to the theory of the Semitic grammarians all nouns are derived from verbs, and when verbs do not exist these are invented. Several modern scholars have protested against such an unscientific process. See Lee's Grammar, p. 83; Nominal Origin of the Semitic Verbs, by Prof. C. H. Toy, Transactions of the American Philological Association, 1877, p. 18.

<sup>3</sup> With this root is connected *nūh* 'to rest, to sit down.' As we shall see further on, in many tongues the two ideas of 'to be' and 'to stand,' *esse* and *stare*, are confounded in some cases, and in others derived from the same root.

The modifications suffered in Assyrian by the prefix of the Niphal are worth special attention. In the strong verbs—that is, the verbs having three consonantal radicals—the prefix retains its form *na*, in the infinitive *narkusu*, and imperative *narkis* (kal *rakāsu* ‘to bind’), the permansive is not found; in the aorist past and present the vowel disappears, and the *n* is always assimilated to the first radical of the verbal stem: 1st pers. *arrakis*, 2nd pers. *tarrakis*, 3rd pers. *irrakis*, etc. Similarly in the secondary voice of the Niphal, the *n* being brought near the inserted *t*, is assimilated in the aorists: 1st pers. *attarkis*, 2nd pers. *tattarkis*, etc. The infinitive of this ittaphal, however, appears under the form *itagbulu*.

In the verbs weak from the first radical, as *amāru* ‘to see,’ *alāku* ‘to go,’ *episu* ‘to do,’ *abālu* (for *wabālu*) ‘to bring,’ the prefix appears under the form *nan* or *nen*, so we have *nanmuru*, *nanluku*, *nenpusu*, *nanbulu*. This strengthened prefix is not always retained in the aorist, for we have *inikul*, 3rd pers. aorist Niphal, from *akālu* ‘to eat’; in other verbs—especially, it seems, those having *e* as first radical—the strong prefix is retained throughout: *innemidu*, 3rd pers. plur., from *emidu* ‘to stand,’ *innirisu* from *erisu*.

These apparent anomalies are easily explained. The Assyrian Semites, accustomed to a certain symmetry in their verbal forms, must have endeavoured to compensate the weakness of the first radical of weak verbs, and for this purpose they prefixed the Niphal formative under its stronger form, which, as we have seen, was *n-n* preserved in the Hebrew verb *nūn*; the vocalization was governed by the law of vowel harmony, so the prefix takes *a* with *amāru*, Niphal *nan-muru*, and *e* with *eribu*, Niphal *nen-rubu*, etc. The second *n* of the prefix must have been very weak, as it disappears sometimes altogether, and represented, no doubt, nothing more than a nasalization. The fact that this second *n* is written, and not assimilated to the next consonant, as it is the phonetic rule in other circumstances, indicates that it was not of the same nature.

As is well ascertained, the doubling of a consonant in

Assyrian is the ordinary, though not the only, means to express that the preceding vowel is long,<sup>1</sup> and the nasalization was another process employed for the same object.

Gesenius has already noticed this fact in the other Semitic tongues, in Hebrew and Chaldee, *'inbeh* for *'ibbeh*, *mandah* for *maddah*, in Arabic *sunbulat* for *subbulat*, in Ethiopian *sanbat* for *sabbat*.<sup>2</sup>

In my previous paper I have already noticed that it is this primitive verb, *un* or *an*, which has served as support to the pronominal suffixes to form the emphatic personal pronoun, *ana-ku* 'my being,' i.e. 'I'; *at-ta* for *an-ta* 'thou,' etc.<sup>3</sup>

*Prefix t.*—The primitive verb from which is derived the prefix *t* has been clearly preserved in the emphatic pronoun *'atanū* 'what is we,' or 'our being,' i.e. 'we,' and also in the Syriac *'yt*; but this verb had always, or at least at a very early period, an impersonal meaning: the Syriac *'yty* corresponds exactly to the French *c'est moi*, rather than to 'my self,' as usually translated. Hebrew has retained this root as an expletive *'at*, and is used to indicate in certain cases the accusative, as the *'an* of Arabic.<sup>4</sup> Hebrew has also retained from the same root the verb *'atah*, with the meaning 'to come,' developed through the natural confusion of the verbs 'to be' and 'to go,' as in French *j'ai été* for *je suis allé*, a misapplication which has also arisen in English.

It was on account of its primitive impersonal origin, no doubt, that this formative *t* was the prefix mostly used in the nominal formation to express abstracts: in Assyrian, *tenisetu* 'mankind,' *tukumatu* 'opposition'; in Hebrew, *tēhillah* 'praise,' *tōrah* 'the law'; in Arabic, *tar'as* 'consensus,'

<sup>1</sup> The doubling of a consonant properly indicates sometimes that the accent is on the preceding vowel (see Proceedings of the *Society of Biblical Archaeology*, Nov. 1882); it is the case now in Italian *cedrato* and *cedratto* for *cedrāto*, and also no doubt in Anglo-Saxon *reccelas* for *rēccelas*; but in Assyrian, as in our modern tongues, there was a tendency to confound length with accent.

<sup>2</sup> *Lexicon*, p. 523 (Tregelles' edition).

<sup>3</sup> I may notice here that the Hebrew pronoun of the 1st p. plur. *'anāhnu* is a weakened form of the singular *'anōky* with the old plural suffix *nū*; the other form *'anū* is the word 'being' with the possessive suffix of the first person plural, and must be for *'annū*; the Assyrian *anini* seems to prove that there were primitively two ns. As for the second person *anta* for *antak*, see my previous paper.

<sup>4</sup> So in Armenian the prefix *z* came to indicate the accusative.

etc.<sup>1</sup> The prefix *t* has also formed what can be called adjectival nouns where the impersonal meaning of the formative is still more evident. For instance, in Hebrew, *talmyd* 'a disciple,' properly 'one who learns'; in Assyrian, *tasmetu* 'she who hears.'

Either to avoid confusion with the abstract nouns, or on account of its primitively long initial vowel, the formative prefix, with the verbs, took the form *hit* in Hebrew and 'et in Aramæan, and in consequence, perhaps, also of this initial vowel, it was, little by little, considered as an infix. In Assyrian verbs the *t* is always inserted; in Arabic, though inserted in the secondary voice of the Kal, it is prefixed in the fifth and six forms, no doubt because the verbal stem had already undergone a modification. The voices with inserted *t* will be considered further on. In Ethiopian only, the *t* is prefixed in the secondary voice of the Kal without initial vowel, and that appears to be due to the laws of analogy, which have played an important part in the formation of this dialect.

*Prefix s.*—The prefix of the shaphel has left traces in all the dialects, but mostly in the verbal formation, rarely in the nominal formation; the voices formed with it are fully developed only in Assyrian and Aramæan, Arabic and Ethiopian having clearly preserved only a secondary form, as will be seen further on. The shaphel has everywhere a causative meaning.

What is this prefix *s*? It is found neither among the so-called pronominal prefixes of the Aorist-Present, nor in the independent nominal formation; however, its use, in all the dialects with the same force and for the same purpose, indicates its existence at a very early period of the Semitic tongue.

As regards the three previous prefixes, their origin has been traced and their existence proved as independent words, more or less altered to make them conform to a uniform tri-

<sup>1</sup> Few examples are sufficient here; the reader may refer to the list given by grammarians, and will find that *all* the words formed by prefixing *t* can be explained in the same way.



literal model; if the prefix *s* has a similar origin, we must find it also as an independent word, in a living state, so to speak. This is the case, indeed, to a greater extent than for the other prefixes: in Assyrian we have *su* 'he,' *si* 'she,' and the relative pronoun *sa*, which is also found in Aramæan and sometimes in Hebrew. These pronouns bring us back to a verb 'to be,' *yeš* or *iš*; "by far the most common use of the word is its being put for the *verb substantive*, without distinction of number or tense," such are the words of Gesenius.<sup>1</sup> The fact seems to be that *iš* is a unipersonal verb expressing the existence, the substance, the reality, a meaning well illustrated by the derivative *tū-šiyah* 'what is really,' i.e. 'truth.' On account of this primitive meaning of the verb *yašah*, the pronoun derived from it had naturally an objective sense, designating a person in an objective position, and thence the relative value of the pronoun *sa*, exclusively used in Assyrian, was, as a consequence, developed.<sup>2</sup>

The prefix *s* being now considered as an objective pronoun of the third person, the formation of the shaphel becomes clear; for, if the prefix to the verbal stem is an objective pronoun, the action of the verb is naturally thrown from the speaker on to another absent person represented by the prefix; so, in Assyrian, *aktum* 'I concealed,' shaphel *usaktum* 'I (did that) one concealed,' i.e. 'I caused to conceal.'

Of course all the shaphel forms have not preserved the primitive causative meaning; often a new meaning is developed, for instance in Assyrian, *asābu* 'to sit,' shaphel *susubu*, primitively 'to cause to sit,' i.e. 'to place;' *ḥarābu* 'to be devastated,' shaphel *suḥrubu* 'to cause to be devastated,' i.e. 'to lay waste.'

The shaphel has been lost in Hebrew and Arabic, no doubt because the aphal grew to be a causative, and the other form was then rejected. It has been argued that the Hebrew

<sup>1</sup> Diet. p. 371.

<sup>2</sup> The objective force always carried by the prefix *s* explains also why few or no nouns are formed with it. If Assyrian, however, has applied the pronoun formed by it to the subjective third person, it may be due to some foreign influence.

hiphil represents the Assyrian shaphel on account of the regular change of the Assyrian *s* into the Hebrew *h*, as the Hebrew pronoun *hū* corresponds to the Assyrian *sū*. If, however, this regular correspondence existed in fact, we ought to have *hakan* instead of *šakan* in Hebrew, answering to the Assyrian *sa-kānu*. Besides, we find in Arabic the same pronoun *hū*, and also an aphal, while the prefix *s* is preserved in the secondary form *istaphel*.

The fact is that this unequal distribution of the forms carries us back to the early period, when the Semites could form voices by prefixing any kind of pronouns and auxiliaries; when the language of each tribe was more developed, some forms were fixed and localized and others rejected as superfluous, so we see in the Sabæan inscriptions used exclusively the Aphal by one dialect, the Shaphel by the other, for the same purpose.

*Prefix m.*—The prefix *m* is considered, especially by the Arab grammarians, as a verbal formative; its use is, however, very restricted as voice formatives, and the few traces found in Hebrew and other Semitic dialects are even considered as doubtful. The prefix was largely used to form new nouns, and was in course of time exclusively reserved for this office. Nevertheless, if the voice formed by adding *m* to the stem ever existed in full use, it must have had a meaning analogous to that of the nouns with prefixed *m*, that is, instrumental, and it is indeed the force attributed in Hebrew to the doubtful *mipheh*. What also accounts for the disuse of this voice is, that the prefix was at an early date localized as formative of the participle.

This prefix *m* has already been assimilated by Ewald to the pronoun *ma* or *mah*, in Hebrew 'what,' 'that which.' We therefore have again for this preformative a primitive substantive verb, the derivative of which has been localized to express these pronouns.

In Assyrian *ma* or *ama* has certainly in many passages the force of a verb 'to be,'<sup>1</sup> in the translations it has always been

<sup>1</sup> *ummā ana sari belia ama* 'Be it so to the king, my lord.'—Pinches's

confounded by the Assyriologists with the enclitic *ma* (for *wa*), the Hebrew copula *w*, and rendered at the end of a sentence by 'also,' but if translated by 'is' or 'are,' the sense becomes much clearer.

The prefix *m*, forming instrumental nouns and names of agent, is to be distinguished from the one forming local and gentile names,<sup>1</sup> which seems derived from a word *ma*, meaning 'a place,' and perhaps by extension its inhabitants; this word, apparently lost as a single word, has however been retained in composition, in proper names, etc.: *masreqah* 'the place of vine,' town of the Edomites. With this primitive word might be compared the Hebrew '*amah*'<sup>2</sup> and its derivatives: '*ummah* 'people,' '*amma* in Arabic 'to be related.'

### *Infixes.*

As already noted, the formative *t* appears but exceptionally as prefix, and in the verbs always plays a secondary part; this character of infix is preserved throughout only in Assyrian. The secondary character of the *t* voices has been well defined by M. Renan, who gives to them a reflective value. This reflective character is easily understood, if we bear in mind the primitive meaning of the formative, which is, as we have seen, a verb 'to be,' impersonal and indefinite. In Egyptian we can actually trace in the inscriptions such a development in the case of the verb *tu* 'to be,' which has formed an indefinite pronoun *tu*, having the meaning of 'some one,' as the French *on*, and which, when used as an auxiliary, gives an indefinite meaning, e.g. *tu t'at*, rendered exactly by the French *on dit*, in English 'it is said'; the reflective meaning comes naturally, as is shown by the Italian

Babylonian Texts, p. 7. It is possible that the adverb *umma* 'thus, so' may be connected with this primitive verb.

<sup>1</sup> It may be, however, that the two prefixes have really the same origin, the idea of locality is easily developed from that of being. We have 'State,' a constituted Society, used often as the land or country.

<sup>2</sup> This root '*amah*' seems to have been confounded at an early time with '*em* 'mother,' and the etymologists derive words sometimes from one, sometimes from the other. In Hebrew '*amah* has been localized to mean 'handmaid,' and is even by some considered as a derivative of '*em*'; '*amah* would be 'a small mother,' 'a secondary wife.'

rendering *si dice* for 'it is said,' and the use of the passive verbs in Greek and Latin to express the reflective.

The Assyrians have in their dialect developed, for these secondary or *t* voices, another meaning peculiar to themselves, which expresses that the action is done in the interest, or on the own responsibility, of the speaker; for instance, *iqtabu* 'he speaks for himself,' i.e. 'he said on his own responsibility.'

Combined with the three primary prefixes, the infix *t* forms three new voices, which we call secondary: 1° a-taphal, 2° na-ta-phal, and 3° sa-ta-phal.

The first two are often confounded, as the prefix of the Niphal generally appears, as in Arabic, with an initial vowel all through the tenses. As we have seen in Assyrian, a long vowel—which would be the characteristic of the formative prefix of the Apha!—is often represented by doubling the following consonant, and, as *n* is generally assimilated, the two secondary voices, *ā-ta-phal* and *na-ta-phal*, would both appear as *attaphal*. As a matter of fact, the secondary voice of the niphal is in Assyrian *itaqbulu* in the infinitive, the *n* having been assimilated and then dropped, and this form would be identical with the ataphal or secondary voice of the apha!, if it existed.<sup>1</sup> In all the other Semitic dialects, the secondary voice of the niphal has been lost, having been no doubt related to, and afterwards absorbed in, the secondary voice of the apha!, or replaced by another voice. Syriac, which has, like Assyrian, preserved the symmetry of formation, doubles the *t* of the ataphal, which becomes *ittaphal*, a form exactly like that which we should expect for the secondary voice of the niphal, if it existed in the Aramæan dialects.

As we have seen, Arabic and Ethiopian have lost the Shaphel, but have preserved its secondary voice, formed by adding, however, as in Aramæan, an initial vowel, giving thus an istaphal: Assyrian alone gives examples of the regular formation *sutaqbulu*.

If, now, the verbs formed by the three derived voices,

<sup>1</sup> It is forms of this kind which made some suppose the existence of an apha! and ataphal in Assyrian, but, though traces are found in the nominal formation, such voices do not seem to have ever been in use among the Assyrians or Babylonians.

a-phal, ni-phel, and sha-phal, be considered as verbal stems, the *t* of the secondary voices would be a real infix; its use, has, however, nothing surprising if we keep in mind the compound origin of the stems. But how can we account for the insertion of a *t* in the so-called triliteral roots? Are we to suppose that the *root* was split into two parts to insert the *t*? Such a process would revolt scientific minds, and would certainly never be employed by a simple and primitive people. If we only had for infixes 'a or 'u, or even liquids *r*, *l*, *n*, it might be explained, for want of better reason, as developed from the primitive vowel pre-existing in the stem; but how can we explain such a form as *qa-ta-bal* from *qabal*?

No answer has as yet been given, for no one has ever had the courage to say that we have here a form created regularly, as the secondary voices, by placing the primitive auxiliary verb, reduced to *t*, between the two elements of a compound stem. No one ever dared to say so, because by so doing he would have to admit that a great number of the triliteral roots are really compound words, and upset the theory of trilaterism, accepted religiously and kept superstitiously by the Semitic scholars. But what are such words as *sakānu*, and the like? Have we not here a shaphel of the biliteral root *kūn* 'to exist,' with the primitive meaning 'to stand,' as the French *être* from *stare*? The shaphel of *kūn* would give the meaning 'to cause to stand,' i.e. 'to place,' which is the exact meaning of *sakānu*.<sup>1</sup>

Is that an isolated fact? Is it likely that a process of formation applied once for the development of a language was abruptly given up or narrowly limited? The formation by means of servile letters is admitted to explain quadrilateral verbs. Why should it be rejected to explain triliteral verbs?

It has been argued by some of the exclusive scholars that the Semitic tongue had always been triliteralistic, and by

<sup>1</sup> The hypothesis is also supported in regard to *sakānu* by the fact that this verb generally takes, as vocalisation of the aorist, the vowel *u*, which is the one especially affected to the secondary voices. We will see further on why these voices took by preference this vowel.

some less exclusive that, if we go back to the pre-trilateral period, it would no more be Semitic. We cannot, however, imagine that the Semitic primitive tongue grew spontaneously in a day, for we know that every language requires a long period of incubation and development before acquiring its characteristics and its individuality. Gesenius and Ewald themselves admit in many places the growth from biliteral to trilateral roots. Then, if a language develops, is it not more rational to admit that it should develop by the same process which we find in actual use till after its formation? for do we not see the same process of formation applied at all times by the Semites to form new words from foreign roots? The foreign words are invariably trilateralised when they pass into Hebrew, Arabic, etc.

When the tongue was developed, and had arrived at an harmonic system of trilateralism, there was a natural tendency to treat as primitive roots the biliteral stems or so-called weak verbs when strengthened by one of the prefixes. Most of the stems beginning by *a*, *n*, and *s*, may therefore be considered as *aphal*, *niphal*, and *shaphel* verbs. A glance through any of the Semitic dictionaries would suffice to convince the most sceptical.

As already noticed, the *t* of the secondary voices would, when these verbs were treated as primitive stems, appear to be a real infix, and such forms as *sitakunu* are easily explained. But as to the others? Analogy might perhaps suffice in some cases to explain the insertion of the *t* after the first radical in the other stems, for analogy is one of the strongest guides in the development of a language; in French, for instance, new verbs are every day formed by merely adding to a word the termination *er*, as in *télégraphier*, and we see formed by analogy in Ethiopian such voices as *astaqabbala* and *astaqābala*; in the rabbinic Hebrew a *niphael* as passive to the *paël*, parallel to the *niphal* passive to the *kal*. But there is indeed evidence that a great many of the trilateral roots, so called, are really compounds of a verb and a noun. It must always be borne in mind that all compounds were afterwards forced into the trilateral

system, and, their formation being forgotten, treated as primitive roots.

Naturally in this process of formation the two components suffer more or less, one of them being often reduced to a single letter. The Semitic scholars seem unwilling to accept such a system of composition, though there are uncontested and uncontested examples of it in proper names, as: *yónatan* (whom Jehovah gave), and *natanyah* (given by Jehovah), where the name of Jehova (*yhowah*) is reduced to two letters. The method of abbreviation for compounding purposes is besides general in every language of the globe, and Semitic does not seem to be an exception.

In the Semitic dialects, however, the primitive formation is often difficult to detect, and we must advance only with the greatest caution.

M. Ancessi, in his excellent study on the triliteral formation,<sup>1</sup> has shown by hundreds of examples that most of the triliteral so-called roots were developed from more primitive biliteral and uniliteral words. It is needless to give here the long series of these innumerable examples, a few will suffice, and I simply refer the reader to the valuable paper of the French scholar:

*pūh* 'to breathe,' *ya-paḥ* and '*a-paḥ* 'to breathe,' *na-paḥ* 'to breathe, to blow,' *ša-paḥ* 'to spread out,' *sa-paḥ* 'to pour,' *ša-paḥ* 'to spread out,' *ša-pyḥ* 'inundation,' *ṭa-paḥ* 'to spread out,' *ša-paḥ* 'to spread, to be wide.'

All these words are found in Hebrew, in each case I have checked the meaning; other derivatives are also found in cognate tongues, as *ri-paḥ* 'to be rich,' in Arabic. I have also neglected the derivatives where the guttural *ḥ* has been weakened into *h*,<sup>2</sup> as *za-paḥ* 'a liquid,' though they might be easily connected.

*qūr* 'to dig,' *na-qar* 'to dig, to bore, to pierce,' *ba-qar* 'to pour out, to spread,' *da-qar* 'to thrust through, to pierce,' *ḥa-qar* 'to search, to explore,' *ba-laq* 'to make empty,' *ḥa-laq*

<sup>1</sup> Actes de la Société Philologique, vol. iv. part 1, *La loi fondamentale de la formation trilitaire*, Paris, 1874.

<sup>2</sup> The hard guttural *ḥ* of the Hebrew is in many cases weakened into *h* in Assyrian, and sometimes disappears altogether.

'to smooth, to divide, to disperse,' *ma-laq* 'to break;' *ma-šik* 'to draw,' *pa-siq* 'to open wide,' etc.<sup>1</sup>

I must, however, notice that according to the theory of M. Ancessi, the primitive uniliteral stem has gradually grown by addition of new letters into biliteral and then triliteral. This theory cannot be accepted more than the monosyllabism of the supposed primitive Aryac, but, though M. Ancessi was no doubt wrong in his theory, the facts he gathered remain; it must be admitted that whatever was the principle that guided the primitive Semites in the word-building of their language, we have in the so-called triliteral root an agglutination of at least two words; therefore the formative *t*, being always in a secondary position, was placed after the first element represented by the first radical letter of the triliteral stem.

Thus only can we account for the voice with *t* inserted.<sup>2</sup>

When once the process was in use, and its origin and reason forgotten, it was applied by analogy to the real triliteral roots, as the Arabs now apply their voice formation and their broken plurals to foreign words borrowed by them.

*Infir* 'a.—What has just been said about the *t* voices makes easy the explanation of the pôhel of Hebrew, the third Arabic form, and others, inserting a long vowel. We must have in these voices an inserted aspirate, 'u or 'a. The two vowels, separated only by a slight aspirate, are easily resolved into a long vowel, as we see is generally done in weak verbs, and the aspirate often disappears altogether. We have, no doubt, in this aspirate the remnant of the auxiliary verb which has formed the apha, and which is prefixed to the second part of the compound stem.

<sup>1</sup> It must be noticed here that M. Ancessi did not hold the same theory as I on the triliteral formation; these examples cannot consequently have been chosen to suit my views.

<sup>2</sup> To dispel all misunderstanding it is necessary to remind the reader that the infixes are really prefixes placed before the second element of a compound stem, so that the secondary voices are parallel voices formed as to the kal, but with a modified stem; the secondary voice of the apha (Syriac) *'ettaqbel* is really the apha of the modified stem *taqbel*, as the apha *'aqbel* is formed from the kal *qēbal*; the secondary voice of the shaphel (Assyrian) *sutaqbulu*, is really the shaphel of the modified stem *\*tuqbulu*, as the shaphel *suqbulu* is formed from the kal. The arrangement and classification of the forms is the work of time, that is why so many are wanting.



As already noticed, the long vowel is often expressed by doubling the following consonant. There was, therefore, a natural and inevitable confusion between pōhel and the pael: the first has been clearly preserved in Arabic and Ethiopian, where it has the same force as the pael, and is then confounded in meaning: in Hebrew, only a few isolated examples of pōhel have been preserved, and are considered as abnormal pael. In Assyrian, the existence of these voices is difficult to detect on account of the system of writing, and there is no doubt, if it ever existed, it was at an early date confounded with the pael. Aramæan has only a few doubtful traces.

This voice has been preserved in Arabic, not because Arabic has maintained the oldest form<sup>1</sup>—for it has, in fact, lost the shaphel and the secondary voices of aphel and niphal—but because Arabic has maintained the guttural and aspirate with their full force for a longer time, so that the vowels with the aspirate between them could never be fused together.

*Infix n.*—Among the Semitic tongues, Assyrian seems to be the only one forming regularly tertiary voices by inserting *n* after the *t* of the secondary voices. As this inserted *n* appears in Assyrian only after the *t*, it has been assumed by some that the combination *t-n* was borrowed from an Akkadian form: this—though rather unlikely, for grammatical forms are seldom borrowed from one people by another—might be admitted if the inserted *n* was never found by itself in other dialects, but examples are to be found in the XVTH and XVI<sup>TH</sup> Arabic forms. We must also notice that in one or two instances the Assyrian writing seems to indicate that the two infixes *t* and *n* are not to be treated as one: for instance, *it-ta-in-ras*.<sup>2</sup> The *n* as an infix is therefore independent of *t*.

<sup>1</sup> I take this opportunity to declare clearly that I do not believe in the existence of a primitive Semitic settled tongue, as some are inclined to do, but that the various Semitic dialects developed slowly, and that the process of development which has formed the main points and given a special character to these languages was still applied in a certain measure at all times. The Semitic tongues have been subject to the same laws of development as the others; as for the Latin tongues grown out of Latin, they must have grown out of a primitive stock, with this difference that the primitive Semitic was not settled as the Latin, and, as in all unsettled states of language, it had no regular formation, all the processes which later on were used being employed no doubt indifferently.

<sup>2</sup> Pinches's Babylonian Texts, p. 20, l. 15. There are two or three other examples.

It is rather tempting to see in this infix *n* the same formation as that of the niphāl, and the double use of *t* as prefix and infix would tend to support the supposition. However, the use of *t* as secondary formative can only be derived from its reflective character; it would be otherwise difficult to admit compounds where would enter two affixes having both the same primitive force and meaning. Rationally, we would therefore expect that the two *ns*, prefix and infix, would have, if they had the same origin, grown into two distinct formatives.

The inserted *n* might, indeed, be explained as a nasalization, and in some cases such is undoubtedly its origin. Besides, in Assyrian, Aramæan, Arabic, and Ethiopian, the doubling of a letter, which often indicates merely the accent or stress, is replaced by *n*, inserted before the letter to be doubled. But if this character of the infix *n* is evident in some cases, the regular formation of the Assyrian tertiary voices, and the existence of the Arabic XVTH and XVIth forms—traces of which might be detected in other dialects by a general and rigorous analysis of the vocabularies—point in many instances to the real existence of an infix *n*, or, if preferred, to an early separation and distribution of the two primitive meanings contained in the original word, which has given the niphāl prefix. As we have already seen, the primitive verb ‘to be’ *nawah*, from which is derived the prefix of the niphāl, has developed many particles, as the expletive ‘*an* of Arabic: but this is one among many. Assyrian has been much further, and has taken from this same root its two most important prepositions, *ana* and *ina*. The use of the expletive *an*, largely and almost exclusively used for such a purpose, has left traces in all the dialects, and as the ‘*at* of Hebrew often denoted merely that the following word is the accusative, this *n* for this reason is used before the first person suffix, when regimen of the verb: Arabic *ḍarabta-ni* ‘thou didst strike me’; Hebrew *kētaba-ni* ‘he wrote to me.’ This expletive must be the same as our inserted *n*.<sup>1</sup>

In Assyrian, the infix must have a meaning more or less

<sup>1</sup> Egyptian gives us the same development: *ūn* ‘to be,’ *an* expletive, *n* preposition.

related to the two prepositions *ana* and *ina*, and the tertiary voice formed with it gives, we find, to the primitive stem a strengthened, reduplicative, or frequentative meaning. This meaning is exactly the one given in Greek to the derivative verbs formed with the preposition *ἐπι*.

In the other Semitic dialects the formation with the infix *n* has never been developed, or was perhaps lost, the few cases detected are isolated and abnormal. This is no doubt due to the fact that the expletive never in these dialects acquired the strength of a preposition.

It might be objected that, if a formative was developed from a preposition, it ought to be prefixed, not infixed. No doubt; but it must not be forgotten that all Semitic roots are nouns, and take a verbal force only by means of verbal prefixes or pronominal suffixes, and it is quite probable that some of the niph'al verbs are compounds of an auxiliary verb 'a 'to be,' a preposition *n* and a noun, but the auxiliary verb was indispensable.

As we have seen, many of the so-called triliteral roots are really compounds of a primitive verb and a noun; if the preposition — our infix *n* — was placed between these two components when the first was uniliteral, the *n* was assimilated with the next consonant, and the voice then confounded with the pael; we however find examples of words with *n* inserted after the first radical, and not assimilated.

It is natural to suppose that verbs requiring an expletive or preposition before their regimen must have had a more complicated meaning; on the other side, all the primitive verbs reduced in composition to a single letter have a very simple meaning, as 'to be,' 'to go,' 'to give,' etc. The words expressing a more complicated action could not have been reduced to monosyllables without losing their clearness, and it was the second component which was abbreviated to force the new stem into the triliteral system. These words must have been extremely scarce: that is why such a small number of examples of the voices formed by the inserted *n* are found. It must be also noted that the examples on which were cast the XVTH and XVIth Arabic forms, give a

doubling of the third radical or the addition of a *y*, which seems to indicate that the second component wanted strengthening, and this formation was for this reason no doubt avoided. In Assyrian the tertiary voice, being formed without reducing too much the primitive components of the stem, was naturally developed.

The facts which have just been analysed are not isolated and confined to one affix. If from the primitive verb *un* was developed parallel to the verbal prefix a preposition, and this preposition employed as an affix, the tendency to do the same with the other formative verbs must have existed at the earliest stage of the tongue. The substantive verb *ut* has indeed developed, by the side of the formative of the *t* voices, several particles, as the preposition *t* of Arabic, the Hebrew 'et 'with,' 'at,' etc. When this preposition was inserted, it was confounded with the *t* formative of the secondary voices, but there can be no doubt that we have a form created as the tertiary voice by the insertion of a *t*—primitively a preposition—in the word *uste-te-ser* from *esiru*, and *ukta-ta-šir* from *kaširu*, where the preposition *n* is replaced by the preposition *t*; with *n* we should have *uste-ne-šir* and *ukta-na-šir*.<sup>1</sup>

*Infixes r and l.*—There are two other letters recognized as infixed formative letters, *r* and *l*; the last is also considered as a suffix-formative. It is by the insertion of *r* after the first radical that many quadriliteral verbs are explained: *kirbel* 'to girdle,' *kiršem* 'to devour,' *karsaḥa* 'to run,'<sup>2</sup> *paršad* 'to distend,' *paršez* 'to expand,' *karkah* 'to be even,' etc. In the same way *l* is considered as infix in *zilḥap* 'to be very hot,' and suffix in *ḥargal* 'to leap,' *gibḥol* 'a corolla,' *karmel* 'a garden,' *jahfal* 'to come forth,' etc., and *r* is considered as a prefix in *ruṭpaš*.

The different ways in which we have seen the formatives *n* and *t* applied to form new words and new voices must have prepared us to accept these statements, if we could only discover which is the word or words from which were derived

<sup>1</sup> We have here an example of vocalic harmony, the infixes taking *e* with *esiru*.

<sup>2</sup> The great number of quadriliterals in Arabic beginning with *kar* might incline one to see in them compounds of a verb *kar* with nouns more or less abbreviated.

these formative letters, as we have discovered it for the others 'a, n, and t.

This question of the origin of these quadriliteral verbs has however been one of the most puzzling to the Semitic grammarians. Some suppose that *r* is inserted as *n*, to take the place of the doubling; that may be possible, but is unlikely. Gesenius supposes *paršez* to be a kind of agglutinated word from the fusion of two others, *paraš* 'to expand,' and *paraz* 'to separate,' and in the same way *parsed* from *paraš* and *parad* 'to separate'; though this telescoping process might have been resorted to in a few cases, and may explain these two quadrilaterals, all of them cannot have a similar origin. The same scholar declares that the *l* suffixed to form a few quadriliteral words is a diminutive characteristic; but this theory, which might hold good for such words as *karmel*, *gibhol*, and the like, is inadmissible for *jahfal*.

The uncertainty in which the etymologists were, is indeed shown by the fact that they brought forward as many theories as there were words to be explained, and in some cases, failing any new theory, they assume the word to be of foreign origin.

The fact that *r* and *l* are generally inserted after the first radical would seem to favour the idea that we have in them the remnant of an auxiliary verb, as in the case of the infix *t*. This is the view I am inclined to take, though no trace of the supposed auxiliary, as an independent word, is to be found in any of the Semitic tongues.<sup>1</sup> No regular voice is formed by the inserted *r* or *l*, and it may be because the supposed auxiliary verb was lost at an early period, and only preserved in a few words, in which it no more carried its primitive meaning.<sup>2</sup> Because a word has ceased to exist

<sup>1</sup> I say "the supposed verb" because I believe that the *l* and *r* are two forms of the originally same formative, these two letters interchange easily.

<sup>2</sup> The supposed verb must have expressed an idea of motion, and would have formed such prepositions as the Chaldee 'arû, the Arabic and Hebrew *l*, the Assyrian *lu*, etc., and it might be detected in a few trilateral roots. It may be noticed here that Assyrian possesses about half a dozen quadriliteral verbs: *naplusu* 'to perceive,' *napruku* 'to discontinue,' which are niph'al verbs, and *sarbutu* 'to spread,' a shaphel verb, the others are only used in the niph'al, and are formed by the insertion of *r* or *l* after the first radical; *nabalkutu* 'to transgress,' *naparsudu* 'to flee,' *napalsuhu* 'to weigh.' There would be an interesting study to make on the origin of the prepositions, for we see that each formative has one or more prepositions corresponding in meaning and form.

independently, we must not, therefore, deny its existence, and reject the etymology of the compounds, where it has been preserved; if Latin had been lost, etymologists might doubt the existence of the preposition *ex*, preserved in the French *ex-poser*, because this preposition has been lost in French as an independent particle.<sup>1</sup>

### *Doubling.*

The process of doubling a word to modify its meaning is most natural, and has been universally employed in Egyptian, Akkadian, Aryan tongues, etc. We have still examples and traces of it in the reduplication of the Greek verb, in a few Latin perfects: *dedi*, *pepuli*, *cucurri*, etc.<sup>2</sup> In the Semitic tongues it appears under a peculiar form; the middle consonant or second radical of the so-called triliteral roots is alone repeated.<sup>3</sup> To a western mind it would appear as barbarous and violent a process as the insertion of a strange letter in the middle of a root, if it is, as it has been till now, presented by the grammarians without any explanation.

The reduplication was at first complete, as *parpar* 'to move,' *galgal* 'a wheel'; this is preserved only in weak verbs, which being really biliteral, give the complete reduplication. In some strong verbs two of the radicals only were repeated, as in *še-ḥar-ḥar* 'to be restless,' *ḥa-mar-mar* 'to be agitated, like the sea.' Generally the reduplication is expressed by the doubling of one letter only, the middle or second radical: *qabbala*. This last system has been at the classic stage of all the Semitic tongues exclusively employed, and by analogy extended to all the verbal stems, but the first two methods of reduplication, preserved abnormally in a few words, show us the origin of the third.

<sup>1</sup> There are a few examples where we see the other infixes inserted (*i.e.* prefixed to the second element of the stem), as *m* in the Syriac *ḥamsen* and *etymḥar*; but as these examples may be contested, I purposely leave them out.

<sup>2</sup> On the verb-reduplication as means of expressing the completed action, by Alenzo Williams, in the Transactions of the American Philological Association, 1875, p. 54.

<sup>3</sup> At the outset it is necessary to make a distinction between the two kinds of doubling, one which is, as will be shown, a short way to express the reduplication of the whole word, and the other which merely indicates the accent, or rather stress. This distinction is most essential.

The pael,<sup>1</sup> or doubling of the second radical of the trilateral strong verbs, represents therefore the full reduplication; so we find *kûl* 'to measure,' forming *kîkel* 'to hold'; *šûk* 'to anoint,' forming *šîkšek* 'to cover with arms.'

These reduplicated forms are so numerous in the Aramæan dialects that Hoffman has been induced to consider the *palpel* and its secondary voice *ethpalpal*, are regular though little-used voices.<sup>2</sup>

If such reduplicated stems were abbreviated, we should get trilateral words having the same letter for the first and second radicals, as: *kîkar* 'the globe,' for *kîkkar* from *kûr*; *kôkab* 'star,' in Assyrian *kakkabu*, for *kabkabu* from *kûb*: *gugulta* 'a hill,' from *galal* or *galah* (primitively *gal*), etc.<sup>3</sup>

The grammarians, most of them at least, will however persist in considering these words *kûr*, *kûb*, *gal* as abbreviated forms of roots having the same letters as second and third radicals, not taking into account that all these verbs, called double<sup>4</sup> in Hebrew and solid<sup>5</sup> in Arabic grammars, lose in formation one of the two similar letters; as for instance: *zalal* 'to shake,' gives hiphil *hizzyl* 'to shake,' niphal *nazôl* 'to tremble,' and *zullût* 'fear,' and *zalzallin* 'twigs.' The primitive is certainly *zûl*, the form *zalzal* gives therefore the full reduplication.

We must not forget that such stems as *zalal*, *parar*, *bazaz*, etc., are trilateralised forms of the primitive biliteral *zal*, *par*, *baz*, etc. As already noted, when the trilateralism was once adopted, the tendency was to force all words and formations into the symmetrical measure; the biliteral stems were strengthened by means either of prefixes or suffixes, or by repeating one of the primitive radicals. Sometimes the same word appears under different forms in each dialect; sometimes the various parallel forms are found in the same dialect. The

<sup>1</sup> It is to be noticed that the reduplicated forms of the Akkadian verb are generally translated in Assyrian by this pael.

<sup>2</sup> In Syriac the *palpel* often answers to the Hebrew pael. In Hebrew there are a few examples of pael at the time of the prophets (especially in Isaiah).

<sup>3</sup> The XIIth Arabic form *'iqbawbala* gives us an analogous formation, but the second element only of the verbal stem is doubled *bawbala*, no doubt for *bal-bala*.

<sup>4</sup> *Képulym*.

<sup>5</sup> *alfihlu* 'la'sammu.

modifications do not alter the primitive meaning of the word; it is only by accident that a new meaning was developed and localised to a certain form, as in the case of the doublets of our modern tongues.

All this shows that in the ordinary pael we have a reduplication of the second part only of the trilateral stem *qab-bal* for *qa-bal-bal*, and this is confirmed by the already-mentioned few examples, as *še-ḥar-ḥar* and *ḥa-mar-mar*.<sup>1</sup> If we now remember what was said about the infixes, we see at once that we have in these words compounds of which the second element alone is reduplicated. The first element of *šeḥarḥar*, reduplicated form of *šeḥar*, would be *še*, the same word, perhaps, as the shaphel formative,<sup>2</sup> as for the second we actually find it—*ḥarah* (primitively *ḥar*) 'to burn' or 'to be burned,' especially in a moral sense, and the reduplicative form *ḥarḥar* 'to kindle,' also taken figuratively.<sup>3</sup>

It is difficult and sometimes impossible to find the primitive formative elements of all trilateral stems, so much so because the real trilateral roots have been by analogy treated as the other compound stems. The foregoing examples, however, suffice to show how the pael represents really a full reduplication. It may be added that, as we have seen, the first element of the so-called trilateral roots is generally either an auxiliary or a verb with a very simple meaning, the chief idea being therefore represented by the second element: it alone was repeated to express the reduplication.<sup>4</sup>

The pael voice gives to the stem an intensitive meaning, as does reduplication in all tongues.

The fact that the doubling of the middle or second radical represents the full reduplication gives us the key of the

<sup>1</sup> In Syriac there is even the secondary voice '*ethramrem*.'

<sup>2</sup> Often the *š* of the shaphel is changed into *s*, it is the case in Arabic, for *s* and *š* are confounded; in Syriac we find such forms as *šarheb*, and the secondary voice '*estangad*.'

<sup>3</sup> Prov. xxviii. 22.

<sup>4</sup> It has been noticed that certain weak verbs form in Hebrew the pael (that is the reduplicative voice) by repeating the last letter, this form is called pael, and that these same verbs in general are fully reduplicated in Syriac, the pael thus becoming a papel. This seems to come from the fact that Syriac is a more decayed dialect than Hebrew, and had entirely lost conscience of the compound origin of the words, so one of their elements could no more be repeated alone to give the strengthened idea.



formation of the Assyrian mutative,<sup>1</sup> which is neither a present nor a future, as often asserted, but which seems merely to express an idea of continuity; for the Semites appear at no period to have had a clear way of expressing the fixed and precise time as understood in the Aryan tongues.<sup>2</sup> The simplest process of rendering this idea of continuity is to repeat the word twice; this is, as just seen, represented by the doubling of the middle radical; the tense thus formed would have clashed with the pael. To avoid the confusion a different vocalization was adopted, in most cases *u* or *i* for the aorist, and *a* for the mutative. It is rather difficult to perceive what guided the Mesopotamian Semites in this choice, but they may have, I am inclined to suppose, followed the analogy of the vocalization of the infinitive *a*, and the participle *i*; the infinitive expressing the action as in course or to be done, and the participle the action as done or being done at the time.<sup>3</sup> This last force is the one expressed by the so-called permissive, which is really the participle with a weakened form of the pronominal suffixes, but always was of a limited use. It is no doubt under a foreign influence<sup>4</sup> that the two Assyrian tenses, aorist and mutative, acquired a value, in regard to time, more definitive than the tenses of the other dialects. The reduplication represented therefore by the doubling of part of the word expresses to a certain extent a modification of time. It is important to notice that the Aryans have followed an exactly similar process, but by a reverse way of thinking; the reduplication represents among them the perfect<sup>5</sup> as the action done altogether.

<sup>1</sup> This name, which is the first one adopted by our great Master, Hincks, has the advantage of expressing by a new term a formation unknown in the other Semitic dialects, and is for this reason used here; the name of present-future has, on the contrary, the defect of being that of a different form well known in Arabic, Hebrew, etc.

<sup>2</sup> It seems that only through foreign influence have the Semites ever been induced to precise the value of their tenses as regards time; that is why so many different methods have been used; in Assyrian reduplication, in Syriac use of auxiliaries, in modern Arabic addition of complementary words or of prefixes.

<sup>3</sup> This is, I grant, shifting the difficulty, as it might be asked the reason by which the infinitive took *a* and the participle *i*.

<sup>4</sup> The Mutative corresponds generally to a lengthened form of the verb in Akkadian; the use of the reduplicated Mutative is therefore due perhaps to foreign influence, but it cannot be said that its formation is.

<sup>5</sup> See the paper by Alenzo Williams already quoted on verb-reduplication,

It has been several times alluded to the process, nearly general in Assyrian and common in the other dialects, to express a long vowel by doubling the following consonant. This, which may appear surprising at first sight, has however happened in a great many other tongues, and the reason must be sought for in the character and influence of the accent on one part, and in the inherent pronunciation of a closed syllable.<sup>1</sup> To illustrate this and give many examples would be too long for the object of this paper; it is sufficient to say that the closed syllable by its very nature is followed by a silence or rest, and was therefore easily confounded with the accent,<sup>2</sup> but as the closed syllable is followed by a kind of hollow sound, and required a longer time to be pronounced, it was naturally confounded with the open long syllable, especially in Assyrian.

The accent originally had, however, in the Semitic tongues a character quite distinct from the doubling. It separated and disconnected the two primitive elements of a stem, and for this reason it was expressed sometimes by a long vowel. But the accent, the length, and what I would call the ictus<sup>3</sup> (*i.e.* the silence resulting from a closed syllable), were soon confounded. So we see in Arabic the second and third

where it is demonstrated that all the Aryan strong perfects are due to reduplication of the verbal stem, as *lēgo* perfect *lēgi* for *lêlēgi*; such forms as *cucurri*, *pepuli*, etc., are uncontracted perfects. See also *Some Irregular Verbs in Anglo-Saxon*, by Francis A. March, in the Transactions of the American Philological Association, 1872, p. 110, and two other papers in the same publication.

<sup>1</sup> To be well treated this important question would require a whole paper. See S. Guillard, who studied the question as regards Arabic poetry, *Journal de la Société Asiatique*, série 7, vol. vii. p. 214; see also *Proceedings of the Society of Biblical Archaeology*, November, 1882.

<sup>2</sup> This is illustrated in many modern tongues. In Italian, for instance, to pronounce a closed syllable, as in *accento*, the first sound is uttered, and the mouth is then placed in position for the next sound, so that we have *âccênto*; the final consonant of the closed syllable, though the mouth is in position before the silence or rest, is pronounced only with the next syllable. The study of phonetics in the Cuneiform texts seems to prove that such must have been the Assyrian pronunciation. It may be added that in Italian the doubling of a letter is often, but not always used to express the accent on the preceding vowel. As a curiosity it is interesting to notice that through the character of the pronunciation of the double letters, they have been used in some tongues to express sometimes that the preceding vowel was long and sometimes that it was short (see E. Guest, *History of English Rhythms*, edited by W. W. Skeat, p. 104, *et. seq.*); we notice in early English the same confusion, as in the Semitic tongues, of accent, length, stress, etc.

<sup>3</sup> This is the term used by M. S. Guillard, though he does not give perhaps to it exactly the same interpretation, but his views seem to practically confirm mine.

forms having exactly the same meaning, and the Hebrew grammarians considering the pôels as abnormal pael. The confusion was, however, the greatest among the Assyrians, and they confounded voices still distinguished in the other dialects. The aphal was confounded with and assimilated to the kal, as we see verbs weak of the first radical appearing as biliteral, or even treated as being weak of the second; besides, when the first consonant is doubled, the form may be considered as niphal as well as aphal. Similarly, if pôels existed in Assyrian, they were assimilated to the pael, *uqabbil* standing for *uqa'bil*. At the time of Teglaphalasar I. the pael was in fact written with a single middle consonant.

*Passive by Vocalization.*—It remains now to speak of the passive voices formed by change of vocalization. As shown by M. Renan this process of formation must have been in general use among the primitive Semites. In Arabic it has been preserved in full force; Hebrew has kept a pual and traces of hotpaal, pôal and hotpôal; Aramæan, having regularly applied the *t* voices to express the passive, lost naturally that formed by vocalization, but few traces are found in nouns and participles. In Assyrian there are no passive voices formed by vocalization, but, as in Aramæan, there are two participial forms in the kal, though not found for the same stem. The participle, without or with the pronominal suffixes, used as a verb (the auxiliary being understood), constitutes the so-called permansive; when the word expresses a passive meaning, it takes the vocalization *u*, as *lūmun*<sup>1</sup> 'being evil,' instead of the ordinary vocalization *sakin* 'placing.'

This formation of the passive by vocalization has been explained by the quality of the vowel-sound: *u*, said the grammarians, was chosen to express the passive force of the word on account of its obscure sound, the clearer and more primitive *a*-sound being reserved for the active.<sup>2</sup> It is, how-

<sup>1</sup> The forms *lūmun* and *lūmnu* are also found, but never *lamin*. This difference of vocalization as distinction of meaning has been noticed already by Dr. Oppert (Grammaire, p. 52); in the Aorist, active verbs taking *a*, and neuter *u*; the same verb is found with both according to the sense in which it is taken.

<sup>2</sup> This is the opinion of most scholars of the old school, Gesenius, Ewald and others.

ever, difficult to admit that this distribution was originally and deliberately made, and it is more probable that the vocalic distinction of the voices grew out of a formation the remembrance of which had been entirely lost.

In Egyptian we have a similar formation of passive by the *u* vocalization; it is difficult to be detected on the monuments on account of the system of writing, where the vowels are seldom expressed, but it is clearly shown by the Coptic.<sup>1</sup> If we now consider that in Egyptian the inner vocalization of a word was rarely expressed, we must admit a kind of attraction, and the scribe only wrote the final vowel, it being understood that the inner ones were the same, and hence we must admit the existence of a kind of vocalic harmony,<sup>2</sup> by which the inner vowels were assimilated to the final. In Egyptian the objective pronoun of the third person is often expressed by the semi-vowel *u*; it may be then supposed that the passive voice grew from the habit of placing the third person pronoun at the end of the word, to express that the verb was passive;<sup>3</sup> the inner vocalization being afterwards sufficient to express the passive force of the verb, the final *u* was neglected, and the origin of the form forgotten.<sup>4</sup>

The Semitic passive voices may have originated from a similar process, though we have no means of proving it; there is, however, the third person pronoun *hu*, and I am inclined to think that this pronoun placed at the end of a verb to indicate that it was used passively, was little by little considered as forming part of the word, and having influenced the inner vocalization, was then dropped.

It may be objected that in Assyrian, as also in Arabic, the

<sup>1</sup> See de Rougé's Grammar.

<sup>2</sup> This vocalic harmony, contrary to the forward process of the Altaic tongues, proceeded backward from the final to the inner vowels. This seems to have been so clear to the Egyptian scribe's mind, that he took the habit of expressing the vowel outside the words; we have a striking example in the Semitic word *raiš* 'head,' which the Egyptian scribe transcribed *rašai*, though this is no doubt a graphic phenomenon, and the vowels expressed outside must have been pronounced, as in Hebrew, between the two consonants.

<sup>3</sup> There is something similar in the use of the reflective pronoun in French as *Il s'est coupé le doigt* for 'he has cut his finger.'

<sup>4</sup> The same has happened in English where words altered by vocalic harmony have lost the influencing syllable, as in 'men,' plural of 'man.'

signs of cases are the ending *u* for the nominative, *i* for the genitive and *a* for the accusative, and that, if backward vocalic harmony existed originally in the Semitic tongues, the vocalization would be different for each case. My answer is that nominal flections were primitively independent words, no doubt demonstrative, but were, as all useless parts of words, soon weakened and lost, as are all flections in time,<sup>1</sup> so the primitive *umma*, *imma*, *amma* became the mimimation *um*, *im* and *am* in Assyrian, where it was soon reduced to the vowel only,<sup>2</sup> and in the later Babylonian, the flections having entirely lost their real value, were neglected; the ending *u* is even kept when the word is grammatically in the objective case or regimen of a preposition.<sup>3</sup> In spite of this final fusion of the flection with the noun determined, it formed primitively an independent word, as the definite article of Greek and of our modern tongues,<sup>4</sup> and its vowels did not consequently affect that of the vocalization of the preceding word; when it was fused with it, the vocalic harmony was a process partly disused in the Semitic dialects.

This formation by vocalization was too delicate to be easily preserved, so it was soon lost in Assyrian, left only traces in Hebrew, and was preserved only among the Arabs, who lived sheltered from all foreign influence by their deserts,<sup>5</sup>

<sup>1</sup> In Latin the flections were lost at an early date in the vernacular tongue, and already in the classical language the accusative in *m* had become a mere mimimation; in Italian it is entirely lost; it may be noticed that the article, which takes to a certain extent the place of the flection in the Latin tongues, has been derived from a demonstrative pronoun.

<sup>2</sup> Oppert, *Gramm. Assyrienne*, 2e édition, p. 13, *et seq.*

<sup>3</sup> In the same way in Arabic the primitive flection weakened into a nunnation has disappeared entirely in the modern dialects.

<sup>4</sup> In the modern European tongues, as French, Italian, etc., the definite article is really a mere head-flecion denoting only gender; in some languages the article, as in Danish, appears as end-flecion. Though it is inferred by this paragraph that the Semitic flection has grown out of a demonstrative pronoun, as did the articles in the Latin and Teutonic languages, the proof would require a development which would carry me beyond my present subject. I will only notice now that the full form *umma*, *imma*, *amma*, found in some old Assyrian texts, is also preserved in the paragogic or energetic future of the Arabic verbs under the form of *anna* and *anni*, the *m* being weakened into *n*, as the mimimation is into nunnation.

<sup>5</sup> See *Origin and Primitive Home of the Semites*, Journal of the Anthropological Institute, vol. xi. p. 423. In many instances Ethiopian seems to have retained this vocalic harmony to a greater extent than Arabic.

and in modern vernacular Arabic the formation is nearly lost.

An important fact to notice is that in the sccondary voices, and indeed in all voices of the Assyrian verb—except Kal, which is considered as one compact word—the second part of the stem takes the vowel *u*; this would imply that the second part of the stem is then considered as one word, placed in a passive or objective position. If it would be rash to conclude at once that at the earliest period of the Semitic tongue the vocalic harmony existed in full force, we must however acknowledge that there is strong evidence to favour this theory, especially when we find vocalic harmony a process applied in a limited way in nearly all the dialects.<sup>1</sup>

#### CONCLUSION.

Though it is hardly necessary to draw from this general survey conclusions which come out naturally from the facts collected, it may be desirable to give in a few lines a brief summary.

The verbal stems, originally the same as the appellative nouns, acquired their verbal force by means of auxiliary verbs placed before them; new verbs were formed by composition of two words—generally a verb and a noun, both being often abbreviated—the fusion of the two elements was not complete enough, so that they could not be separated. The auxiliary verbs—which became in time the voice affixes

<sup>1</sup> Especially in Assyrian, the only dialect where the vowels are clearly expressed; in the imperative, which gives the stem without addition, the vocalization is uniform, so we have accordingly the words *a, u* or *i*: *šabat, piqid, sukun*. There are in many cases examples of false concord caused by vocalic attraction, often the vocalization of the penultimate syllable is influenced by the case-ending, as in *salelti* for *salalti*, etc., and also cases of forward vocalic attraction, as in *erësu* for *eräsu*, etc. In Arabic vocalic attraction is evident, to quote only one example, with the pronoun-suffixes. The vocalization in Hebrew has been too much tampered with by grammarians, commentators and text correctors, and Syriac is too much decayed a dialect, and has too much suffered under Greek influence to enable us to detect easily the laws of vocalization, it would require a long and laborious study. I can here only hazard an hypothesis, which appears to me justified at first sight. It may be added that the vocalic harmonism is a process which has, in spite of the Ougro-Altaic scholars, been more or less employed in all families of tongues, Teutonic, Latin, and others, and seems inherent to mankind.

—could be used indifferently with all stems, sometimes prefixed to the whole word when it was considered as a simple stem, sometimes prefixed to the second element of the stem when its composite character was still clear to the mind, and the idea represented by the second element alone wanted to be modified. Each component was distinguished, no doubt, by a different vocalization. The importance so given to the consonants accustomed the Semites to consider them as the very bones of the words, and from this conception grew the triliteralism. To arrive at this artificial system, the words were unconsciously classified, compounds treated as primitive, and others abbreviated. The auxiliaries used in combination, unequally distributed in the various dialects, became voice-formatives, and all words which did not enter in the mould were considered as of abnormal formation.

To have made this short study more complete, it would have been necessary to have given numerous examples of the various forms in all the dialects, but it would have then required quotations to prove the meanings and the force of each form; such developments would have extended the limit of my paper to a volume size. I therefore only attempted to give a sketch, where the general points are merely indicated, hoping that scholars will not condemn my theories before examining the texts and controlling the statements. If, however, my paper has no other effect than to induce other students to take up the subject, I shall consider that my trouble has not been spent in vain.

P.S.—In my former paper I have pointed out the similarity of the tense-formation in Egyptian and in the Semitic tongues; the same parallel, not to say identity, exists for the voice-formation. I left it purposely aside as being outside my paper, but I may be allowed to notice it briefly in this note, in order not to be accused of inventing forms to support a theory. I will follow Mr. Brugsch, and begin by the table of the verbal formation given in his grammar for a biliteral and triliteral verb:

*Verb modified by reduplication.*

Root <i>keb</i>	Root <i>kebeḥ</i>
<i>kebkeb</i>	<i>kebbeḥ</i>
<i>kekeb</i>	<i>kebeḥbeḥ</i>
<i>kebeb</i>	<i>kebeḥeḥ</i>
<i>kebek</i>	

*By affixes.*

<i>se-keb</i>	<i>se-kbeḥ</i>
<i>ā-keb</i>	<i>ā-kbeḥ</i>
<i>ke-t-eb</i>	<i>ke-t-beḥ</i>
<i>ke-n-eb</i>	<i>keb-n-eḥ</i>

Most of these forms are found in the Semitic verbal formation. In *kebkeb* we have the palpel of the weak verbs—which answer to the Egyptian biliteral verbs,—in *kebbeḥ* the ordinary pael; in *kekeb* the papel and *kebeḥbeḥ* are rare forms preserved in few verbs, as *ḥa-mar-mar*; in *kebeb*, the regular Hebrew palpel, and in *kebeḥeḥ*, the ninth Arabic form; *kebek* is no doubt a weakened fully reduplicated form; the doubtful examples found in the Semitic tongues are treated as trilateral.

The modifications by affixes are not less striking. We have in *se-keb* and *se-kbeḥ* the shaphel, in *ā-keb* and *ā-kbeḥ* the aphal; in *ke-t-eb* and *ke-t-beḥ* the secondary or *t*-voices, where the *t* is inserted after the first radical; in *ke-n-eb* and *keb-n-eḥ* the tertiary voices of Assyrian, and the fourteenth and fifteenth forms of Arabic; it is worthy of notice that in the Egyptian trilateral verb the infix *n* is placed after the second radical as in Arabic.

The other Semitic voices are also represented in Egyptian. The use of the auxiliary *ūn* and its weakened form *an* gives forms exactly parallel to the niphal; the auxiliary *tu* and weakened form *t* gives forms similar to the tiphel; also the auxiliary *ma* (weakened form *m*) for the miphel, and serves also, as in the Semitic tongue, to form names of agents and local forms.

Finally, the passive regularly formed by the inner vocalization *u* was in common use in Egyptian as in classic Arabic.