

THE PROBLEMS OF THE CHRONOLOGY AND PERIODIZATION OF THE PREHISTORY OF THE ARMENIAN LANGUAGE*

Gevorg Jahukyan was an outstanding Armenian linguist, the long-termed director of the Institute of Language, Armenian National Academy of Sciences. His studies cover a wide spectrum of Armenian linguistics.

The monograph of which the last chapter is extracted below, presents the earliest study of G. Jahukyan devoted to the problem of the pre-literary period of the Armenian language. Unfortunately, this valuable study still remains inaccessible to those who is not familiar with Russian.

Indeed, some suggestions which are based on an outdated data as well as traditional view on the problem of the Indo-European ancestral home exploited by the author were revised since the publication of the monograph, nevertheless G. Jahukyan's fundamental study occupies a seminal place in Armenian linguistics.

Despite numerous studies dedicated to the comparative grammar and history of the pre-literary period of Armenian, yet we do not possess with more or less established periodization and detailed chronology for this period. However, its thorough study is impossible without reliable chronology embracing main processes.

As is known, two types of the chronology of the facts of history of languages are distinguished - absolute and relative. Absolute chronology is a more or less exact dating of facts of linguistic history. Relative chronology is the establishment of the consecutive linguistic changes without the clarification of time. Both types of chronology successfully are used in linguistics, in Armenian as well, but, unfortunately, for the clarification of separate questions so far. As an example for the establishment of the absolute chronology of some kind or another phenomena could be taken studies of H. Hübschmann dealing with the time of the changes of *i, u, e, eay, oy, iv* in the medial position (unstressed) syllables, that of H. Acaryan about the time of the change of *t* into *γ*, A.A. Abrahamyan about the change of *au>o* etc.¹

* Extracted from the monograph «Essays on the history of the pre-literary period of Armenian language» by Gevorg Jahukyan (Yerevan: Armenian Academy publishing house, 1967, 384 p. [in Russian] (p. 313-332).

¹ H. Hübschmann, Zur Chronologie der armenischen Vokalgesätze, SA, 1, 1899, S.128-172 (in German); H. Acaryan, When *t* became *γ*, IAN ArmSSR, serie of social sciences, 1948, N. 5, p.33-40 (In Armenian); A.A. Abrahamyan, IAN ArmSSR, 1957, N. 4 (in Armenian). By the way, in this article the author does not mention his book «Grammatical and orphographic studies in ancient and medieval Armenia in the V-XV c.», Yerevan, 1954, p.214-215 (in Armenian), where the change *au>o* is referred to.

Currently the establishment of relative chronology is successfully employed in regard to the usage of the method of inner reconstruction and the study of archaic layers of the Indo-European language. Particularly, recently by a number of Armenian scholars were made attempts to establish the relative chronology of some phenomena.²

It should be especially mentioned the attempts of J. Fourquet, L. Zabrocki, W. Winter and other scholars to establish the sequence of the development of Armenian consonants and groups of consonants.³

In the Introduction to his book about the shift of consonants in German J. Fourquet pays attention also to Armenian, regarding Germans and Armenians as originating from one and the same areal, and considering the shift to the period of linguistic unity. He, as well as A. Meilliet, thinks that the shifts of unvoiced consonants into aspirates and voiced consonants into unvoiced consonants are simultaneous processes. The essence of the shift he considers in the replacement of the correlation «unvoiced - voiced» by the correlation «unvoiced aspirate - unvoiced pure». For the period of the so-called common German-Armenian shift, which is a basis of the subsequent processes for the development of both groups, J. Fourquet establishes the next three consonant groups: 1) aspirated old unvoiced - *ph, th, kh*, 2) unvoiced explosives - *þ (p), ǰ (t), g (k)* and 3) voiced who had lost aspiration - *b, d, g*. The spirantization *ph, th, kh* into *f, þ, h* and *b, d, g* into *β, δ, γ* J. Fourquet considers as a German shift as a result of the weakening of articulation.

In this regard it should be interesting to note that W. Winter proposes the initial spirantization of *p, t, k* into *f, þ, x* with the subsequent shift of the latter into *p^c, t^c, k^c*. But it should be stated that the shift of the spirants into occlusive - is not an ordinary phenomena, meanwhile the reverse processes are widely observed.

Especially is important the attempt made by L. Zabrocki to establish, in accordance with his common theory, the links of the development of Armenian consonants and consonant groups from the common Indo-European forms. According to L. Zabrocki, who had studied the materials of German, Celtic, Hittite, Tocharian and Finnish languages as well, the process of the shift is connected with the two interrelated aspects of one and the same phenomena: strengthening and weakening, which brings to different results depending on the character and position of the syllable.

² Cf. G.B. Jahukyan, The system of declension in Old Armenian language and its origins, Yerevan, 1959 (in Armenian); E.B. Aghayan, From the history of the system of phonemes of Armenian, IFV, 1961, N. 2, p. 67-90 (in Armenian); In this study E.B. Aghayan, following H. Acaryan, distinguishes two periods of the development of Armenian - pre-Grabarian (the term is ours) and pre-Armenian Armenian, without the establishment of their chronological borders. H. Acaryan calls primary Armenian the state of the Armenian language after the departure of Armenians from their ancestral home, before the borrowings from other languages (?). See his «The history of Armenian language», v.1, Yerevan, 1940, p.105-106 (in Armenian).

³ J. Fourquet, Les mutations consonantiques du germanique, Paris, 1948; L. Zabrocki, Usilnienie i lenicia w językach indoeuropejskich i w ugrofin'skim, Poznan', 1957; W. Winter, Problems of Armenian Phonology I, Language, 30, 1954, p.197-201; II, 31, 1955, p.4-8; III, 38, 1962, p. 254-262.

In his study to the Armenian language are devoted chapters 5 and 6 («First shift in the Armenian» and «Second shift in the Armenian»; cf. also the French summary, p.162-170).

According to L. Zabrocki, exactly the strengthening of consonants brings to devocalization of voiced and aspiration (emphatization!) of unvoiced in Armenian. The change of *kh* to *x* Zabrocki considers as a result of the normal development before the process of strengthening. In other words, the process of spirantization of unvoiced aspirates, according to his scheme, precedes the other phenomena of the shift. Some separate phenomena of the shift in Armenian Zabrocki explains as the next: 1) *p* becomes *h*, since labial consonants are weaker than dentals; 2) in the medial position the tendency towards spirantization is observed, since in this position the consonants are weaker than in the initial position; 3) *kh* becomes a spirant, and the rest unvoiced aspirates do not change since the velars are less resistant and more prone to amalgamation with the following elements; 4) *sp*, *st*, *sk* does not strengthen since after *s* unvoiced consonants are not subject to changes.

The strengthening of consonants in Armenian language is followed by weakening, which resulted in voicing and the change of *f*, *β* in the medial position. In this, the voiced affricates in that position lose their occlusivity and the unvoiced affricates, being strong consonants, does not weaken.

L. Zabrocki distinguishes two processes of palatalization. First palatalization had preceded the strengthening (i.e. the shift): *k>c*, *g>j*, *gh>jh*, then *c>s*, *j>c*, *jh>j*. The second palatalization had involved all velars before *j*, and *k*, *g* even before *e*, *i*, since these phonemes are weaker. It occurred after strengthening, otherwise one should expect the shift *kj>š* but not *kj>□*. The change of **s* into *h* Zabrocki considers as a result of the strengthening.

Thus, L. Zabrocki establishes the following periods of the development of Armenian consonants: I - initial period; II - period of a new palatalization; III - period of strengthening; IV-V - periods of the shift; VI - period of weakening and Armenian (II) palatalization; VII - the following period of the development. He offers the next tables:

Development of consonants in Armenian during the strengthening and weakening

I.	p-	-p-	t-	-t-	k	ph	th	kh	b	d	g	bh	-bh-	dh	gh
II.	p-	-p-	t-	-t-	k	ph	th	x	b	d	g	bh	-bh-	dh	gh
III.	p ^c -	-p ^c -	t ^c	-t ^c -	k ^c	ph	th	x	p	t	k	by-	-by-	dγ	gγ
IV.	fh-	-fh-	t ^c	-β-	k ^c	ph	th	x	p	t	k	β-	-β-	δ	γ
V.	h-	-f-	t ^c	-β-	k ^c	ph	th	x	p	t	k	β-	-β-	d	g
VI.	h-	-v-	t ^c	-δ-	k ^c	ph	th	x	p	t	k	β-	-β-	d	g
VII.	h-	-v-	t ^c	-j-, -v-	k ^c	p ^c	t ^c	x	p	t	k	u-	-u-	d	g

Development of consonant groups

I.	sp	st	sk	sph	sth	skh	zd	-pt-	-kt-	ks
II.	sp	st	sk	sph	sth	sx	zd	-pt-	-kt-	ks (ks)
III.	sp	st	sk	sph	sth	sx	st	-p ^t c-	-k ^t c-	k ^c s (k ^c s)
IV.	sp	st	sk	sph	sth	sx	st	-ft ^c -	-kt ^c -	k ^c s
V.	sp	st	sk	sph	sth	sx	st	-ft ^c -	-xt ^c -	t ^c s
VI.	sp	st	sk	sph	sth	sx	st	-wt ^c -	-yt ^c -	□ ^c
VII.	sp	st	sk	sph	sth	sx	st	-wt ^c -	-wt-	□

The development of Indo-European palatals

I.	k'	k'h	g'	g'h	sk'	sk'h	k'h
II.	c	ch	j	jh	sc	sch	cs
III.	s	ch	c	j	hc/□s	hch/□hs	ch/□s
IV.	s	ch	c	j	ch/□s	sh	ch/□s
V.	s	ch	c	j	sh/□s	sh	ch/□s
VI.	s	c ^c	c	-j-, -z-	c ^c	c ^c	c ^c
VII.	s	□	c	-j-, -z-	□	□	□

Development of Indo-European s and w

I.	s	w	-w-	sw	tw	-dw-	k'w
II.	s	w	-w-	sw	tw	-dw-	cw
III.	ş	w	-w-	sw	tw/kw	tw	sw
IV.	h	yw	-w-	hyw/wh	t ^c yw/k ^c w	tyw	syw
V.	h	gw	-w-	hg/gh	t ^c gw/k ^c w	tgw	sgw
VI.	h	g	-w-	hk/kh	t ^c k/k ^c	tk	sk
VII.	h	g	-w-	kh	k ^c /k ^c	tk	sk
VIII.	h	g	-w-	kh	k ^c	k	sk

Armenian palatalization of velars before y

V.	k ^c	k	g	sk	x	sx
VI.	č ^c	č	ǰ	sč	š	sš
VII.	č ^c	č	ǰ-, -z-	š	š	š

Problems of relative chronology.

The facts given above makes it possible to establish the relative chronology of some phenomena.

1. The emergence of sibilant affricates and fricatives in Armenian goes back to a more remote period and, probably, was a result of the Indo-European dialectic palatalization, meanwhile the second palatalization comprises merely an Armenian phenomena which took place later.

2. The shift *sk (*ck')>c precedes the assibilation of palatalized consonants (and palatalization of occlusives?), since both palatalized and non-palatalized *k in the combination with *s give the same result.

3. The shift $*s_{\mu} > k^c$ preceded the palatalization and assibilation since $*k'_{\mu}$ became not k^c but \check{s} (otherwise we should have $*s_{\mu}/*k'_{\mu} > *s_{\mu} > k^c$). In general, the comparison of shifts $*k'_{\mu} > \check{s}$ and $*s_{\mu} > k^c$ speaks in favor of the following sequence: 1) $*s > h$, 2) $*k' > s$, 3) $\mu > g$, hence $*s_{\mu} > *h_{\mu} > *hg > k$ and $*k'_{\mu} > \check{s}_{\mu} > \check{s}$ ($*k'_{\mu} > *s_{\mu} > \check{s}$ or $*k'_{\mu} > k'g > k$).

4. The shift $*kt' > st$ in *dhuk'ter > dustr* shows that the first palatalization had preceded the transition (otherwise $*k't' > *k'hth > *ct^c > *st^c$) and simplification of the consonant groups, i.e. the loss of consonants in the position before a consonant (otherwise $*dhuk'ter > *dhuter > *doyr$).

5. The transition $*k' > s$ after the sonants speaks about the following chronological sequence: First palatalization (with the shift of palatalized affricates into fricatives) had preceded the transition of consonants and vocalization of plosives and affricates after the sonants, otherwise we should have c instead of s , i.e. not $*prk' - hars$ «bride», but $*prk' - > *harg' - > *harc$.

6. The changes $*\eta k' - > as-$ (in *hasanem*, Aorist *hasi* «to reach») and $*dnk' > tas-$ (in *ta-tas-k* «blackthorn») shows that the transition $*k' > s$ preceded the loss of $*n$ before $*s$; it is well known that $*m$, $*n$ are lost before $*s$, but not before velars.

7. If the word *aučan* «help, assist, means, chance, goodness» is connected with *augnem* «to help», *augut* «benefit» from $*au_{\mu}-$ ($< *au-$ «to love; demand; wish; assist, help»)(Acaryan, ED, 6, 1570-1571), then the transition $*_{\mu} > g$ preceded the second palatalization. But the form $*au-g-$ (with extension) could be assumed, from which the two forms originate.

8. The metathesis in the combinations $*r$ and $*l$ + occlusive preceded the second (and first?) palatalization, therefore $*(s)mughl_{\mu}jo$ $*mulgh_{\mu}jo - mulj-$ (in *alj-a-mulj* «murk»).

9. The transition $*n > u$ in the words $*ang^{\mu}hi - auj$ «serpent», $*ong^{\mu} - > aucanem$ «to anoint» preceded the palatalization of velars before u .

10. The transition $*t > u(w)$ before the consonants preceded the metathesis r , hence $*pətros$, $*arātrom$ were changed into *haur* «father» (gen.sg.) *araur* «plough», but not into *hard*, *arard*.

11. If *metk* «weak» really goes back to $*meld_{\mu}i-$, then the shift of consonants had preceded the transition $*_{\mu} > g$, therefore μ was devoiced into k ($< *g$) under the influence of $*t$ ($< *d$).

12. Taking into account that *em* «sum» goes back to $*es-mi$ and *z-ge-num* «to wear» to $*_{\mu}es-nu-mi$, it may be stated that the transition $*e > i$ before nasals had preceded the loss of s before them (this means that *gin* «price» goes back only to $*_{\mu}ēs-no-$, but not to $*_{\mu}es-no-$).

Problems of absolute chronology.

For the establishment of the absolute chronology and periodization of the pre-history we suggest the following methods:

1. The methods of glottochronology or lexical-statistical one.

2. The method of the reverse number system (basically this method overlaps with the former).

3. The method of external facts.

The first method was suggested by the American scholar M. Swadesh and it comprises one of the examples of the mathematical approach to the study of language, including its history. It is interesting that M. Swadesh included also the Armenian in the list of the six control languages under study. Taking into account that some words (the so-called basic vocabulary) are changing very slowly, M. Swadesh first had compiled the list of 215, afterwards 200 words; later he enhanced it to 100. Calculations showed that the index (r) of preservation of the basic dictionary for the time span of 1000 years for the aforementioned 6 languages (also the Armenian) is equal to 85% (for other languages $r = 81\%$ and $r = 86\%$ results were reached). In this context M. Swadesh accepts that the ratio of preservation of the aforementioned words comprises a constant amount. Unfortunately, until now the ratio of preservation for the very big time span was not checked up (currently the time span of no more than 2200 years was studied). As the further calculations in this field show, the method of M. Swadesh does not ensure an absolute accuracy, although R. Lees has suggested a formulae for the definition of standart deviation. But still the method of glottochronology to some extent could be useful for the establishment of the time of the separation of Armenian language from the common Indo-European language.

The method of the reverse number system is suggested by us. While studying the history of languages we notice that the quantitative changes are becoming qualitative at about the same periods of time. For the literary (historical) period it is possible to establish more or less exact stages of the development of language. For the known literary languages usually are singled out two or three historical periods – old and new, or old, middle and new. This means that, taking into account the time period which is necessary for the transition from one to another period, could be established approximately the same periods for the pre-literary period.

The method of using external data is quite successfully used by many scholars. Under the term external data we consider the data related to the material culture and political history of the people, the facts gained from more ancient written languages, the establishment of the chronology of borrowings etc. As is known, the more significant changes of the language occur during the periods of major transformations in the life of the peoples.

The combined usage of all these methods could significantly contribute to the establishment of the general chronology of the history of pre-literary period of languages.

For the periodization of the pre-history of Armenian it is necessary first of all to have more or less trustful data in regard to the time of the separation of Armenian language from the common Indo-European. However, the dating of the period of common Indo-European makes someone to hope all the best. The period of common

Indo-European usually is dated with the III millennium BC, exactly the mid-III millennium. V. Georgiev suggests the V-IV millenniums BC for the common Indo-European assuming that «in the III millennium BC most of Indo-European languages which were spread to the vast territories, were already isolated into separate languages».⁴

For the establishment of the time of the common Indo-European most of scholars, first of all, failed to take into account the circumstance that the separation of the Indo-European languages comprised a durative process which covered, possibly, millennia, and, secondly, they actually only occasionally had used the method of external data. However, should be taken into account the difficulties when one desires to connect the history of the language with archaeological data. Until now the method of glottochronology in regard to the establishment of the period of common Indo-European was used insufficiently and incompletely.⁵ It is known that the reconstruction of the Indo-European lexics leaves much to be desired: the comparative materials contained in the etymological dictionaries mostly are based on the establishment of roots but not words; these dictionaries are dappled with the abundance of homonyms and synonyms, the study of whose chronological distribution and dialectic differentiation could not be regarded as satisfactory; the attempts to establish the relationship between Indo-European and other languages still could not be considered as successful: they do not take into account (or little account has been given) the results of the archaic layers of the Indo-European and relative chronology of linguistic facts, with the results, in their turn, received from the isolated study of the facts of the Indo-European, etc. Thus, if we take the data contained in etymological dictionaries as a base for such calculations, then we will arrive to incorrect suggestions: we will have not the basic dictionary of dialectic variant from where this or that language had originated, but the collection of roots which have different levels of territorial distribution and chronological limitations. Probably it is possible to proceed by following steps: 1) to calculate the percentage of preservation of Indo-European roots («Indo-Europeanness») in 215 or 100 basic words of old Armenian language; 2) to take the list of 215 or 100 Indo-European roots which could be traced in the dialectic variant of Indo-European language from where the Armenian originated and establish the percentage of their preservation in old Armenian; 3) in this regard to compare the new Armenian language with one of the new Indo-European languages, or the old Armenian with one of its contemporary written languages. The first two cases give too unreliable results. Taking into account well-known difficulties while establishing the lexics of Indo-European dialects, let us take the first case, i.e. calculate the percentage of «Indo-Europeanness» of Armenian words (V century AD) according to the list of M. Swadesh. In the case if the compound words are

⁴ V. Georgiev, The problem of the Emergence of Indo-European languages, *Problems of Linguistics*, 1956/1, p. 67 (in Russian).

⁵ Cf., for example, M. Swadesh, *Archaeological and Linguistic Chronology of Indo-European groups*, AA, 55/3, p. 349-352.

extant, where one of the components have Indo-European origins, we drop 0,5%. Thus, we correspondingly minimize the percentage in the case of synonyms. Below we give the number of the Indo-European elements according to the semantic groups established by M. Swadesh. The «Indo-Europeanness» is established mostly according to the «Etymological root dictionary of Armenian» by H.Acaryan, whereby the doubtful cases, oldest borrowings etc. are omitted. In the cases of two 0,5% belonging to different groups we round them into one.

Semantic groups	Number of words included in this group		Number of words of Indo-European origins	
	List of 215 words	List of 100 words	List of 215 words	List of 100 words
1. Personal pronouns.....	6	3	6	3
2. Interrogative words.....	6	2	5	2
3. Correlative words.....	3	-	3	-
4. Dimensional words.....	3	-	3	-
5. Localizing words.....	8	2	7	2
6. Motion, peace.....	16	8	11	7
7. Action.....	10	-	7	-
8. Periods of time.....	3	1	2	1
9. Numerals.....	12	2	11	2
10. Quantity.....	4	2	3	1
11. Amount.....	8	3	7	3
12. Natural phenomena.....	22	13	17	10
13. Plants and parts of plants.....	10	3	6	3
14. Animals.....	7	4	6	4
15. Man.....	4	3	4	3
16. Parts of body.....	26	26	16	16
17. Feeling and action.....	14	8	14	8
18. Actions performed by the mouth.....	6	1	4	1
19. Color.....	5	5	1	1
20. Descriptive elements.....	15	7	10	7
21. Kinship.....	6	-	6	-
22. Items of culture and cultural activities..	13	-	4	-
23. Varia.....	9	5	7	3
	215	100	160 (74,5%)	78 (78%)

The results (74,5% and 78%) could be misleading: it shows very short time span.

More encouraging is the third method. Let us take modern Armenian and Russian languages for the comparison.

Number of semantic groups	Number of words of the group		Number of genetic matches	
	List of 215 words	List of 100 words	List of 215 words	List of 100 words
1	6	3	5	3
2	5	2	4	2
3	3	-	-	-
4	3	-	-	-
5	8	2	1	1
6	16	8	2	2
7	10	-	1	-
8	3	1	-	-
9	12	2	9	1
10	4	2	-	-
11	8	3	-	-
12	22	13	2	1
13	10	5	-	-
14	7	4	1	-
15	4	3	1	1
16	26	26	6	8
17	14	8	5	4
18	6	1	-	-
19	5	5	-	-
20	15	7	1	2
21	6	-	4	-
22	13	-	-	-
23	6	5	1	-
	215	100	43 (20%)	2 5 (25%)

The received result which should be compared with other data shows that, at first, the list of 215 words, and the second, the 85% ratio (but not 81%) is preferable.⁶ Not regarding in our case the high precision necessary, it might be said that the breakup of the communion to whom belong the ancestors of Russians and Armenians, according to the list of 215 words, dates back to the early III millennium BC, while by the list of 100 words - to the end of the third quarter of the same millennium.

The method of glottochronology could not be helpful for the establishment of the periods (periodization) of the pre-history of Armenian language. Here we shall use two other methods.

While studying the pre-literary history of the Armenian language we can highlight two periods when especially visible changes had occurred: 1) XII century when begins the middle period of the history of Armenian language, and along with the old Armenian literary language in the literature gradually the middle Armenian literary language is taking strong positions; 2) XIX century when the new Armenian literary language is becoming dominant and oust old Armenian. Thus, XII and XIX centuries are the periods when the new quality comparing with the old one is especially visible. Between the V-XII and XII-XIX centuries are the time spans of about 700 years (7 centuries). Therefore, the Armenian language of the V century had to be different from that of the III century BC approximately as much as the middle Armenian from old Armenian or new Armenian from middle Armenian.

Consequently, it follows that the modern language is different from the language of the V century approximately as much as the language of that period from the language of the late II millennium - early I millennium BC, and the latter - from the language of the mid-III millennium BC, and the latter from the language of the late V or beginning of the IV millennium BC. Taking into account that «during the primitive communal system the process of changes in the social life and in the language occur as slower as we enter deep into millennias»,⁷ and comparing the data with other known materials, the following borders between the periods of the development of language could be distinguished: 1) XII century BC - as it was suggested, is the period when the Armenian tribes had come to Asia Minor;⁸ 2) the beginning of the III millennium BC – the period of

⁶ The 85% ratio is preferable since for the literary period of the development of Armenian M.Swadesh has received precisely that percentage. By the ratio of 81% the time for the Slavic-Armenian divergence, according to the list of 215 words, comprises 38 (+ 4) centuries, that of the list of 100 words – 33,5 (+4) centuries. It is interesting to note that by the ratio of 81% according to the list of 200 words N.Swadesh had established 33 (+ 4) centuries for the Slavic-German divergences (24,5% of Russian-English correspondences), 34 (+ 4) Roman-German divergences (23,5 French-English correspondences), and 37 (+ 4) Roman-Slavic divergences (21% French-Russian correspondences). This data M. Swadesh is trying to bring in line with archaeological data. So he mentions that M.Gimbutas considers c.2000-1800 BC as a period of the shift of North European population which later gave birth to the separate existence of Germans and Slavs (cf. M. Gimbutas, *On the Origin of North Indoeuropeans*, AA, 54, p.602-611).

⁷ V. Georgiev, V.Ya., 1966, N.1, p.46.

⁸ Although, probably, the possibilities of the appearance of some Armenian tribes in Asia Minor before XII century could not be rejected.

the separated Indo-Iranian, Greek, Hittite, Armenian and other languages, i.e. the period when one can speak about the disintegration of common Indo-European. In the V-IV millenniums BC the process of dialectic differentiation and gradual isolation and separation of Indo-European tribes from the Indo-European communality mostly on the basis of the increase of the number of tribes and search for new territories was in progress. The separation and resettling of Indo-European tribes was a gradual process which covers many centuries and even millenniums.

The chronology of the shift of consonants.

The chronology of the Armenian shift of consonants has not been studied yet. In the common literature two extreme approaches exist. Some date it with the period of common Indo-European and assume that this distinctive for the Armenian change of consonants is a common phenomena with German and, correspondingly, it is an Indo-European isogloss. As it was mentioned above, this suggestion is shared by A. Meillet, J. Fourquet and others. Other scholars regard the change of Indo-European obstruents to fairly late period. Thus, Hr. Acaryan wrote: «In ancient Assyrian borrowings *g* becomes *k* (like in Indo-European words); cf. *kir*<*gīr*, *kšīr*<*gišrinnu*, *kmax*(-*k*^c) *gimexxu*».⁹ Although Hr. Acaryan does not suggest chronological conclusions, we can do it ourselves, taking into account modern data. According to Acaryan, the Armenian shift of consonants was completed not earlier than the XII-XI centuries BC, when Armenian tribes appeared in the southern regions of Asia Minor, but long before the VII century BC when the Assyrian kingdom was destroyed. But we could not accept this dating as a base for our chronology taking into account the following considerations: 1) The Assyrian cuneiform script is not always consistent in the writing of voiced and unvoiced consonants. Although during the mentioned period these two categories of consonants are more or less distinguished in the script, we are not fully confident that the part of the Assyrian population whose language had become the source for Armenian borrowings, really spell the abovementioned words with voiced consonants. 2) Many Assyrian borrowings in Armenian probably go to Assyrian indirectly. In particular, the word *uŋt*, -*u* «camel» borrowed from Urartian (*uŋtu-*) could be mentioned. However, if the Hayasaean toponym Kummaha is related to the later Kamax (Ani), which, according to Hr. Acaryan ascends to *gimahhu*,¹⁰ then the Assyrian language could not be regarded as the source for the Armenian. Therefore, even if the mentioned words were spelled with the voiced consonant, anyway their devocalization could not be excluded in the language which had become the source for Armenian borrowings.

In the study «The Hayasa language and its relation to the Indo-European languages»¹¹ the present author suggests that some suffixes and words (-*ik* – diminutive suffix, *kazm* «composition», *pat* «wall») which entered the Armenian through the Hayasaean, had Indo-European origins. If it is true, then two suggestions could be

⁹ Hr. Acaryan, History of Armenian language. 1, 1940, p. 196 (in Armenian).

¹⁰ Hr. Acaryan, Etymological dictionary, vol.3, p.1242 (in Armenian) (here Hr. Acaryan exploits the form *kimaxxu*).

¹¹ G.B. Jahukyan, The Hayasa language and its relation to the Indo-European languages, ArOr 3.

made. 1) Hayasaean language was the main source for the Armenian words of Indo-European origins, where the shift is absent. 2) The Armenian shift of consonants had taken place before the appearance of Armenian tribes in Asia Minor and their contacts with the people of Hayasa, since Hayasaean words had not undergo a shift. This looks probable if we should take into account that, first of all, the existence of the same shift in Phrygian and Thracian with whom Armenian was in close contacts before the period when Armenians met with Hayasaean (it is even possible that Armenian tribes had appeared in Asia Minor together with the Thracians as it is suggested by I.M.Diakonoff, S.T.Yeremyan and others),¹² and, secondly, the absence of the shift in the words borrowed from languages of Asia Minor (cf. Arm. *karič* «scorpion; lobster» with Greek *καρίς*, -ίδος «shrimp», Arm. *agarak* «field; arable land; cornfield; estate, manor» <? < IE **ag-ro-* etc.).

The chronology of palatalization.

The problems of the relative chronology of I and II palatalizations and the formation of the resulting affricates and new types of fricatives in Armenian has not been studied yet.

The relative chronology shows the next sequence of the consonant shift and two processes of palatalization: 1) I palatalization, 2) shift of consonants and 3) II palatalization. The Armenian shift of consonants, as it was shown above, was completed in its main features before the appearance of Armenian tribes in Asia Minor, that is during the period when Armenians live in the Balkan Peninsula in the neighborhood of Phrygians. It means that the process of the formation of affricates and fricatives was completed as a result of the I palatalization.¹³

If one takes into account that that the palatalization was an IE dialectic isogloss with a germinal process of affricatization and spirantization, the completion of this process, possibly, should be dated with the III millennium BC when Armenian tribes already speak an absorbed language. In favor of this assumption speak facts of spirantization of velars before *i* and after *u* in very old borrowings; cf. Arm. *siun* «pole,

¹² I.M. Diakonoff, Hittites, Phrygians and Armenians, *Teghekagir hasarakakan gitutynneri*, 1956, N.11 (in Armenian) and «Peredneaziatskij sbornik», Moscow, 1961 (in Russian); S.T.Yeremyan, The tribal union of Armenians in the in the country of Arme-Shupria, *Patmabanasirakan handes*, 1958, N.3 (in Armenian).

¹³ By the way, in the name of Arsibi(ni), the horse of the Urartian king Menua (810-786 BC), which ascends to Arm. **arci*_{ii} *o-* (Old Arm. *arcui* «eagle»), from IE **r*_o *g'ipii* *o-*, the transition **g'*>*c* was attested, completed long before thta date.

column» with Greek *κίων*;¹⁴ Arm. *tʰuz*, *-oy* «fig» with Greek *σῦκον*, Boeotian *τύκον* and Latin *ficus*.¹⁵

As to the II palatalization, it happened after the shift of consonants, that is not before the XII century BC, but before the reduction and the loss of final vowels, that is not later than the IV century BC. After the loss of final vowels the factors which caused the palatalization in that position had disappeared.

In this regard is quite typical the Armenian word *karič* «scorpion» which is compared with Greek *καρίς*, gen.sg. *καρίδος* «shrimp» and considered to be a borrowing (as well as the Greek word) from some language of Asia Minor. In this word the change *dj* (*tj?*) >č, parallel to *gj* (*kj?*) >č, had been completed after the appearance of Armenians in Asia Minor (XII century BC?).

The loss of final vowels is traced in borrowings from the Uartian (cf. *burgana* >Arm. *burgn*, gen.sg. *brgan* «pyramide», *ulʰu* >Arm. *ult*, *-u* «camel») and Assyrian (*huššu* >Arm. *xucʻ* «cell», *gimahhu*, *kimahhu* >Arm. *kmax-kʻ* «skeleton» etc.), but not in ancient Caucasian borrowings from the Armenian (cf. Georgian *γwino* from Arm. **gwinjo-*). J. Markwart, bearing in mind the name of the tribe *Ταοχοι*, attested in the «Anabasis» of Xenophon and reflected in Armenian *Taykʻ*, *-oc*, thinks that the loss of final vowels took place after 400 BC and that Iranian stems on *-i*, *-u*, *-a* were borrowed before the loss of final vowels, that is not during this period, as was assumed by Hübschmann and Meillet.¹⁶

The II palatalization and the formation of affricates and fricatives perhaps took place earlier than the Armenian tribes closely contacted with the Caucasian tribes, since in the Armenian borrowings from Caucasian languages the replacement of sibilant affricates with other phonemes are not observed. There are reasons to assume that these phonemes exist also in the oldest Caucasian borrowings from the Armenian.

Towards the periodization of the pre-history of Armenian language.

Thus, we can distinguish three periods of the pre-history of Armenian language:

1. **Indo-European period** - V-IV millenniums BC. In this period the Armenian tribes are gradually emerge in the IE communality. The process of further development of some IE dialectic features and the appearance of new features, gradual

¹⁴ Armenian and Greek words does not have parallels in other IE languages. W.Porzig considers the assumption that these words were borrowed during the period of the most ancient contacts of Armenian and Greek tribes. Cf. W.Porzig, *Die Gliederung des indogermanischen Sprachgebiets*, 1954, S.157. W. Porzig dates the period of this contact to the beginning of the II millennium BC, but taking into account the set of latest data including the history of the Greek language, this dating could be pushed further into the III millennium BC.

¹⁵ These words were borrowed from the Mediterranean languages, but not from one and the same source (possibly, from different dialects; cf. *i* in Latin, on the contrary to Greek and Armenian, voiced *z* in Armenian instead of the Greek and Latin *k*).

¹⁶ J. Markwart, «Caucasica», 7, 1931, S.10, 27. Taking the personal name *Ἀναριάκη*, attested in the study of Strabo, as corresponding to Arm. *anəɾjək(an)*, he assumes that at the beginning of the III century BC the change of *y* to *j* had not happened yet. But the comparison mentioned above is rather doubtful.

transformation of dialectic features into linguistic ones took place. Probably, to this period belongs the emergence of unvoiced aspirates as a special category of occlusives, which is characteristic also for the Greek and Indo-Iranian, the change of *s* to *h*, characteristic also for the Greek and Indo-Iranian, etc.¹⁷

The distinction a) central-dialectic and b) Armenian-dialectic periods («sub-periods») for this period could be only conditional (central-dialectic period - V millennium BC, Armenian-dialectic period - IV millennium BC).

2. Proto-Armenian period - early III millennium BC until the XII century BC. During this period the Armenian tribes, speaking on a separate language, were gradually absorbed and proceeded to the south. To this period belong the I palatalization and the Armenian shift of consonants. The history of the Armenian language could be separated into two periods («sub-periods»).

a) **Early Armenian** - III millennium BC. In this period Armenian language already existed as an individual unit. To this period belong the completion of the process of the change of IE dialectic palatalized velars into corresponding sibilant affricates and fricatives. Probably, to this period belong many Greek-Armenian lexical-semantic parallels.¹⁸

b) **Late Proto-Armenian (Balkan?)** - early II millennium - until the XII century BC. During this period the Armenian tribes had settled down in the Balkan Peninsula near the Thracian-Phrygian tribes. The existence of common phonetic features in Armenian and Phrygian should not be taken as an argument in favor of their origins from one and the same ancestor language but their territorial affiliation and the spread of common features in the closely related languages to that date. Main features of the Armenian shift of consonants was completed during this period.

3. Most ancient period - XII c. BC - V c. AD. During this period the Armenian tribes along with Phrygians had appeared in Asia Minor and proceeded to the east, gradually settling down in the territory of historical Armenia. Taking into account the importance of this period reach in events and popularity, we are inclined to consider it by means of «sub-periods». Two periods («sub-periods») could be distinguished.

a) **Early ancient** - XII c. BC - IV-III c. BC. During this period Armenian tribes who appeared in Asia Minor and moved to the east, gradually had settled down in the western regions of historical Armenia, assimilated Hayasaean and, probably, hieroglyphic Hittites. Thus, if our suggestion to regard Hayasaean language as belonging to ancient Anatolian Indo-European linguistic group is correct, then in Armenian language emerged a strong ancient Anatolian Indo-European substratum. Armenian language borrowed many words from other languages of the Near East as well, including Urartian, Akkadian etc. In this period took place the formation of

¹⁷ Cf. also G. Bonfante, *Les isoglosses gréco-arméniennes*, «Melanges ... Pedersen», p.15-33.

¹⁸ As it was mentioned, W. Porzig in *Die Gliederung ...*, S.157 dates them with the beginning of the II millennium BC, but it better agrees with the latest data pointing to a more early period. In doing so Porzig mentions the absence of agricultural and juridical terms in both languages, while they exist in others.

Armenian ethnos. Yet a firm and unified state organization does not exist. From now on the assimilation of Urartians and other peoples of the Armenian Highland lead to the formation of a strong local Urartian substratum in Armenian language. Armenian language had been enriched also with borrowings from ancient Iranian, Caucasian and other languages. Probably, to this period belong the establishment of bound stress on the penultimate syllable which brought to the weakening of final syllables, II palatalization and the the resulting emergence of a new serie (spirants) of affricates and fricatives, the loss of differences in longitude and shortness of vowels etc.

b) **Late ancient or Pre-Old-Armenian (Pre-Grabarian)** - IV-III c. BC - V c. AD. Already in the first centuries of this period were completed the processes of the formation of Armenian ethnos, settling of Armenians nearly in the whole Armenian Highland which is known as the historical Armenia, and assimilation of the population living in this territory before; according to Strabo, in his time (I c. BC) this population became monolingual. In regard to the language this period is characterized by the reduction and loss of endings (in ancient Caucasian borrowings from the Armenian the vowels of the stem still are preserved: *γwino* «wine», *m-delo* «grass, herbs»), consequently the establishment of the stress on the last syllable, the formation of a system of the alternation of vowels in emphatic and unaccented syllables, main stream of Pahlawi and Syriac and early Greek borrowings etc. Probably, to this period belong some features characterizing the consonantism of old Armenian dialects.

Some words concerning the terms «common Armenian» and «Pre-Armenian». The state of the language preceding the period of the Pre-Old-Armenian we conventionally call Common Armenian since all main processes which were completed during the preceding periods, were common basis for the dialectic features of the literary period, although, indeed, there were separate dialectic features in these periods as well. This does not exclude possibilities to call common Armenian also those processes which took place in the following periods, if they have common character. We call Pre-Armenian the languages of those tribes who live on the territories later populated by the Armenians. In Armenian language they had left traces in the form of substratum and borrowings.

Translated from the Russian by Aram Kosyan