

Y-haplogroups of carriers of the Aryan language

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What will be discussed

Ancient history of the Aryan language, the ancestor of Nuristani, Iranian and Indo-Aryan languages (Fig. 1) is still the object of scrutiny.

A study of its history has always faced the problem of localization of its ancestral homeland, the area of origin of Old Aryan.

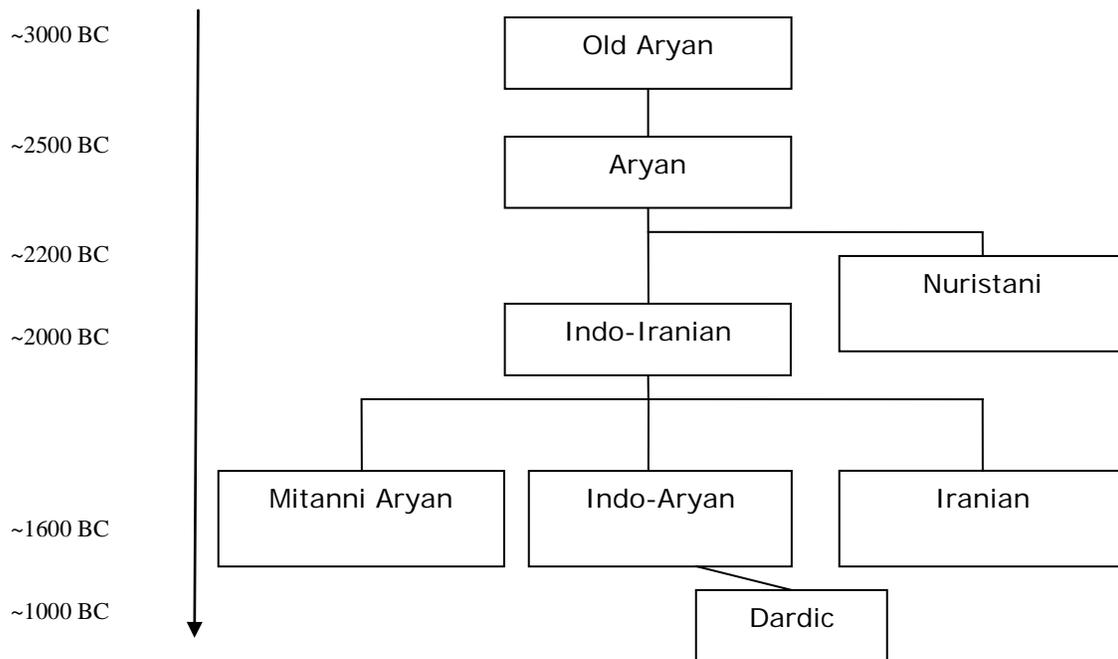


Fig. 1. Aryan language group

Currently considered two basic hypotheses:

1) Steppe («Kurgan») hypothesis. According to this hypothesis, the area of the initial spreading of the Aryan language was the Russian Plain and zone of so called Andronovo culture in the end of III millennium BC beginning of I millennium BC from Southern Urals to Central Asia [1, 2].

2) «Bactrian-Margianian» hypothesis. According to this hypothesis the area of the initial spreading of the Aryan language was the zone of Bactrian-Margianian culture in the end of III millennium BC and beginning of II millennium BC in south of Central Asia and Afghanistan [2, 3].

Recently, addressing this issue has attracted the scientific basis of DNA genealogy, based on opinion that haplogroups of original Aryan language speakers could at least partially be preserved in the modern native speakers of the Aryan group languages.

Among the works in Russian on the topic should be allocated to articles of Dr. A.A. Klyosov «Where did the Slavs and Indo-Europeans come from and where is their ancestral home? The answer is provided by DNA genealogy» [4] and «Another proof of the transition of the Aryans (haplogroup R1a1) in India and Iran from Russian Plain» [5]. Klyosov binds the spreading of Aryan languages in Iran and India with the migration of carriers Y-haplogroup R1a1 (M17) from the Russian Plain.

The main arguments for his theory are based on the high (over 60%) prevalence of haplogroup R1a1 among Ukrainians, the people of the Pamir and the Brahmins. According to Klyosov's calculations, the age of the common ancestor of Brahmin R1a1 is 4050 ± 500 years and the age of the common ancestor of Slavs is 4750 ± 500 years. The older age of Slavic R1a1 may indicate the direction of R1a1 migration from the Russian Plain across the Urals and Central Asia to northwestern India, which took place not later than the II millennium BC.

It should be noted that according to Klyosov's calculations, the age of the common ancestor of the South Asian R1a1 was significantly higher than 4 thousand years and is above 12 thousand years [6]. According to Zhivotovsky's calculations this age is higher [7, 8, 9]. This excludes the allegation that R1a1 appears in India along with the «Aryan invasion» during the migration from the Russian Plain. In other words, haplogroup R1a1 was among the Indian population long before the invasion of Indo-Aryans.

If we consider a set of haplogroups of modern north Indian Brahmins, as the most likely candidates for the direct descendants of the ancient Aryans, it consist of 68% R1a1, 21% J2, 16% H1, 3.6% G2a [7-9]. As we see, among this set contains a typical North Indian haplogroups (R1a1, H1), and «Middle East» haplogroups (J2 and G2a), which argues in favor of

the hypothesis of mixed origin of people of this caste.

In addition to the Brahmins, pagan Kalashs, the endogamic Dard people in the mountainous Pakistan can be alleged genetic descendants of carriers of Old Aryan language. The set of Kalash haplogroups consists of L3a (22.7%), H1* (20.5%), R1a (18.2%), G (18.2%), J2 (9.1%) [10].

Based on this data, the Kalashs and the Brahmins have approximately the same set of «local» and «Middle Eastern» haplogroups represented in different proportions.

There is a lack of consensus regarding the ancestral home of the Aryan languages. There are also drawbacks of the «steppe» hypothesis and «Bactrian-Margianian» hypothesis.

Disadvantages of «steppe» hypothesis

The hypothesis of «steppe» homeland of the Aryan language has a number of linguistic and archaeological inconsistencies.

According to this hypothesis, the Aryan language split within the Russian Plain and the Indo-Aryans and the Iranians, not mingling with each other individually, but along the same path, through the Urals migrated to the Central Asian oases. Then the Indo-Aryans migrated across the Hindu Kush in the Punjab, and the Iranians settled in the Iranian plateau. For Mitanni Aryans «proposed» path of the invasion was from the Russian plain through the Caucasus to Mesopotamia.

Hypothesis does not take into account the Old Nuristanis, who were the ancestors of the modern Nuristani tribes living in the modern boundaries of Afghanistan and Pakistan. If the Indo-Aryans and Iranians lived in the south of the Russian Plain, it means that Old Nuristanis should have been separated from them earlier. According to diffusion of ancient migrations we could meet the Nuristanis anywhere. But nevertheless the region they live is the valleys of the same Hindu Kush, the contiguous territory of residence Indo-Aryans and Iranians. The proba-

bility of distribution in one region of the three related groups who independently migrated thousands of kilometers from the outside is completely negligible.

In addition, look at the geography of the Avesta and the Rig Veda, the only sources of our knowledge of the Aryans. Avesta and the Rig Veda describe the same region, covering the rivers, starting in the mountain systems of Pamirs, Hindu Kush and the Himalayas.

Vedic (Indo-Aryan) and Avestan (Iranian) languages are very close. It can not be the result of their separate existence and their separate migrations over the centuries and thousands of kilometers from their original homeland. This state of Indo-Iranian borderlands could not be the result of an independent migration of Indo-Aryans and Iranians, who separated thousands of kilometers away. It seems to be a plausible assumption that the presence of three different Aryan groups in one region is not accidental and not a result of their separated invasions from the outside.

Localization of Aryan homeland not on the Russian plain, but in the Central Asian area of Andronovo culture is also faced with other kinds of linguistic and archaeological confusion. Andronovo graves do correlate with the Aryan funeral rituals. Aryans used the cremation, not burying corpses in the land. According to the Avesta the desecration of land by dead matter is the ultimate sin. In the reconstructed Old Aryan language is viewed significant impact of the Semitic language system, which is possible only in conditions of close contact. According to the hypothesis Szemerényi, the transformation of Indo-European vocalism **e *o *a* and in Old Aryan occurred under the influence of Semitic languages with a triangular *a~i~u* system [11].

The ethnonym «arya» origins from the Indo-European **ario-s* «friend, equal, noble» has anomalous structure for the Proto-Indo-European and has Afro-Asiatic origin (for example, in Ugaritic «Ary» means «relative, friend»). In addition, south of Central Asia, where the presence of the Aryans is undeniable, there is no presence of the Andronovo. Along with Semitic influence in the Old Aryan language we

can identify the substrate [12] which has the anomalous non- Indo-European structure of the roots. This substrate is not clearly attributable to any presently known language families. Analysis of the semantics of substrate words allows dividing them into four categories:

1) words associated with the cult of the Soma/haoma, and such gods like Indra, Sarva;

2) names of animals – «camel», «donkey»;

3) irrigation and land reclamation terminology – canals, wells, sleeves;

4) all architectural and construction terms related to stationary houses with walls of brick and gravel.

Such cultural and linguistic contacts imply interaction of Old Aryan with Semitic languages on one hand, and interaction of Old Aryan with the unknown language of the civilized people familiar with farming land reclamation and construction of buildings of brick on the other hand, linguistically and archaeologically excluding «pastoral» Andronovo culture from the list of Aryan cultures due to its distance from Mesopotamia, the main area of distribution of Semitic languages in antiquity.

Disadvantages of «Bactrian-Margiana» hypothesis

«Bactrian-Margiana» hypothesis localizes the Aryan homeland in Margiana civilization (BMAC). This civilization had its own distinctive features such as brick construction, land reclamation, cultivation of donkeys and camels. It corresponds to the substrate terminology detected in the Aryan language. In addition, the distribution area of Margiana civilization is consistent with the toponyms of the Avesta and the Rig Veda and with the possible ways of further migration of the Aryans in the Pamir and Hindu Kush.

This hypothesis however does not take into account the aforementioned influence of the Semitic language system.

But where was the Aryan language born? How could R1a1 get from South Asia to the Russian Plain? Why among the Brahmins and the Kalash, in addition to «local» haplogroups, present «Middle East» haplogroups J2, G2a? Where and how could Aryans have contact with the Semitic languages, as well as with the «substrate» language?

All these issues require the development of a unified system of events that would take into account all these facts.

The search for ancestral homeland

How can you find the ancestral homeland of the Aryan language? To do this, define the region, which corresponds with conditions of formation of Aryan language.

The presence of Semitic influence in Old Aryan allows to locate an ancestral home in the area, where could be contacts between Old Aryan and Semitic in III-II millennium BC. According to the hypothesis of TV Gamkrelidze and VV Ivanov [9], not later than the VI-V millennium BC in the contact area of Asia Minor and Northern Mesopotamia allocated Proto-Indo-European language, which is associated with the archaeological culture of Tell-Halaf in northern Syria (V millennium BC).

Proceeding from this hypothesis and taking into account all the facts presented, the initial

area of spreading of the Old Aryan language most likely would be the northern part of the Iranian plateau, where the appearance of Old Aryan tribes refers to the first half of the III millennium BC. The authors compare their appearance with the north-Iranian culture denoted as «Hissar II B» in VI-III millennium BC. [13, 14].

Hence, through Afghanistan Old Aryans could go further to the east to the Hindu Kush.

In the process of migration from North-western Iran through the Middle East Old Aryan language superimposed on the local Margiana substrate and as result was the Aryan language. In the culture of the Aryans was borrowed many new elements. After some time, the Aryan language migrated toward the Pamir and Hindu Kush, where occurred its disintegration into Nuristani, Mitanni Aryan and Indo-Iranian dialects. Judging by the disparate localization of late Aryan dialects, Aryans were equipped with chariots and horses and could make migrations in the east (India) and west (Mitanni) directions.

From Indo-Iranians (or Indo-Aryans) archaeologically mapped Gandhara culture or the culture of the Swat valley, which existed in the period 1600-500 BC in the territory of modern Pakistan. Pottery of this culture reveals its obvious similarity with the pottery Margiana civilization [15].

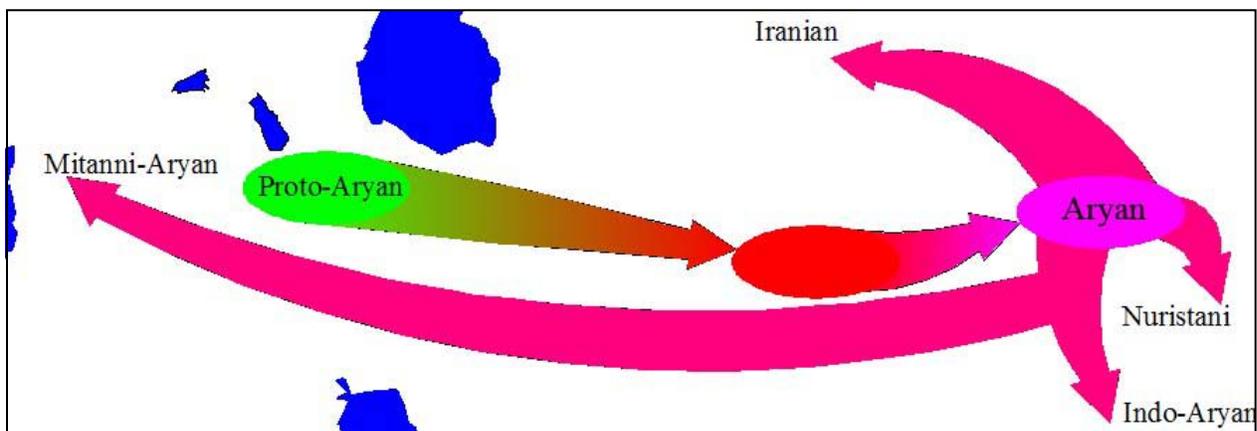


Fig. 2. Alleged scheme of migrations of Aryan

Languages and haplogroups

To find a set of Y-haplogroups speakers of Old Aryan language, let's try to link its alleged ancestral home in north-western Iran with the spreading of Y-haplogroup in this area in the III-II millennium BC. According to preliminary data, they can be attributed to haplogroup J2a, J2b, G2a, R1b1b2 and R1a1. The age of these haplogroups in the Middle East is more than 10 thousand years [16].

Haplogroup J2

Haplogroup J2 (J2a, J2b) is currently the predominant (over 30%) in western Iran, is also represented in Afghanistan, among the Brahmins of the North-western India and Pakistan and Kalashs, [9, 17, 18].

Haplogroup G2a

In the Middle East with a frequency of 10-20% is found among the Kurds, Persians, Pashuns, Kalashs, Punjabis. In a small percentage it fixed among the Brahmins [10].

Haplogroup T

Among the peoples of the Middle East is currently a fairly rare haplogroup in amounts up to 8% noted among the southern Iranians (2.5%), the Pashtuns and Indo-Aryan Bhils in the North-West India (3.8%) [19].

Haplogroup R1b1b2

Submitted in Turkey (16.3%) [20], Iraq (11.3%) [21] and other countries in West Asia. In Central Asia, was found in Turkmenistan – 36.7% [12], Uzbeks – 9.8% [12], Tatars – 8.7% [22], Uighurs – up to 19.4% [23], as well as in the Bashkir [24]. In Pakistan – 6.8% [25] in India is insignificant – 0.55% [26].

Summarizing the above, it may be noted that haplogroup R1a1, J2 and G2a present

among almost all modern speakers of the Aryan group languages.

To determine the possible presence of haplogroups J2a, J2b, G2a among the speakers of Old Aryan language the most important criterion is the age of the most common ancestor of Indian populations. It should be at least 4 thousand years. According to the A.A. Klyosov [18], age of J2a and J2b in India is more than 6 thousand years, which correlate with the alleged scheme. Klyosov notes the similarity of the Iranian and Indian J2 and indicates their migration from the Middle East through Iran to India. It is significant that this fact was rejected by Klyosov in that article [18], which is dictated, apparently, by his preconceived concept of haplogroups R1a1, as the only one haplogroup of the Aryan tribes.

Unfortunately, accurate data on the age of haplogroup G2a in India are not given, therefore, based on known data we can conclude that the initial speakers of Old Aryan language might have haplogroups J2 and, possibly, G2a.

Haplogroup R1a1 and Aryans

The emergence of haplogroup R1a1 among the speakers of Aryan language deserves special consideration. Migrated from the north-Iranian homeland to the east, Old Aryan speakers could assimilate with the local populations, which could lead to including new haplogroups in the Aryan gene pool.

Modern distribution of haplogroups in the Middle East shows that the frequency of haplogroup R1a1, starting with a small percentage in Western Iran (5%) gradually increases to almost 60% in Pakistan and Northern India [27], being present in different ethnic groups.

In this respect, it is not an unreasonable assumption that in the territory of Afghanistan or Pakistan in the II millennium BC speakers of the Aryan dialects interacted with the local population of R1a1.

Subsequently haplogroup R1a1 could be in the Y-DNA of Indo-Aryan tribes who invaded the

north-western India not later the II millennium BC. Aryan migration from the North-western Iran through Afghanistan to India says infiltration such haplogroups as J2 and G2a and relatively young (later – Brahmin) branch of R1a1, brought by the dominant Aryan tribes (Fig. 3).

Given the extent of the Aryan languages of the Middle East, we can conclude that Old Aryan

tribes, who invaded Afghanistan from the north-western Iran, were at a high level of social organization that allowed them to transmit their language to the indigenous population of the Middle East and North India by large-scale assimilation.

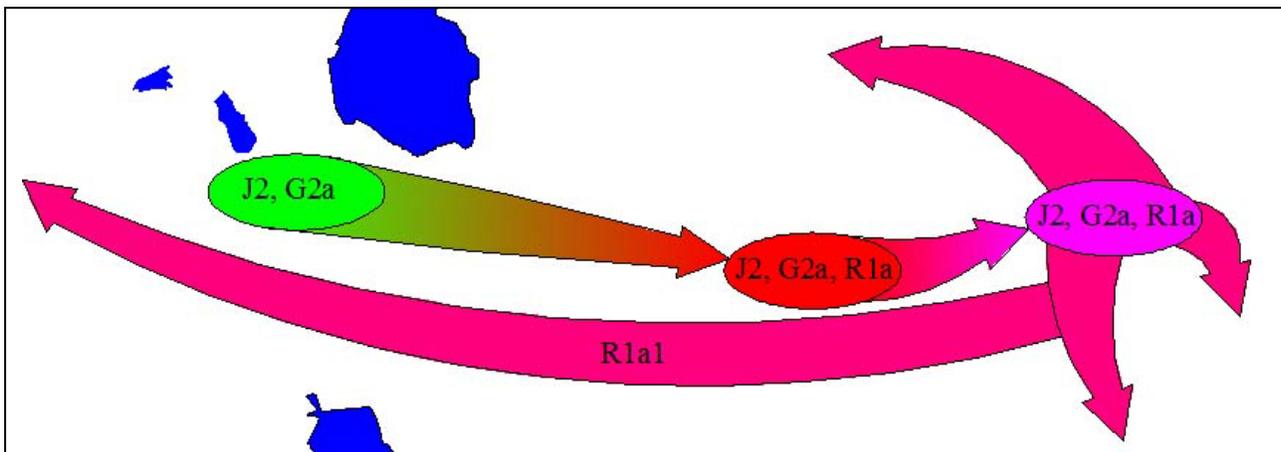


Fig. 3. Alleged scheme of migrations Y-haplogroups of Old Aryan language speakers

R1a1 in Eastern Europe as a consequence of migration of speakers of «ancient European dialects» through Central Asia to Europe

As noted, the Eastern European (East Slavic) R1a1 is more ancient than that of Brahmins. How can we explain this fact? Let put forward the following assumption.

In the aforementioned hypothesis of Gamkrelidze and Ivanov allocation of «ancient European» dialect (the ancestors of Germanic, Italo-Celtic and Balto-Slavic languages) from Indo-European language occurred one of the first and went on with their subsequent migration to the east, through Central Asia and the Volga region to Europe. In this way the migration of the western group of Indo-European languages can be explained by their ancient lexical influence with Altaic, Finno-Ugric and the Yenisei languages [13]. Assuming the initial presence of the ancient Indo-European dialects in the Middle East, it is logical to allow the presence of «Middle Eastern» haplogroups among the speakers

of «ancient European» dialects. The most suitable haplogroup is R1b1b2.

When moving «ancient European» tribes through the Middle East and Central Asia in the IV-III millennium BC they assimilated and included in their community the carriers of haplogroup R1a1. They gradually migrated to the north and further west and reached the modern Ukraine. This is indirectly confirmed by the fact that R1b1b2 is present in the gene pool of some Turkic peoples of Central Asia and the Finno-Ugric peoples of Russia [28, 29], located in the ways of «ancient European» tribes in Europe.

Summarizing the above, it can be assumed that there were two waves of migration of carriers R1a1 from the Middle East. The first wave in IV-III millennium BC migrated to the north with the speakers of «ancient European» dialects. Second wave in III-II millennium BC migrated with Aryans to the Pamir and Hindu Kush.

R1b1b2 haplogroup is prevalent among the peoples of Central and Western Europe, but the

age of its subclades does not exceed 4500 years, which is comparable with the age of Slavic R1a1 [4, 30]. This may serve as indirect confirmation of the fact that these two haplogroups at the same time about 5 thousand years ago migrated in Europe from Asia.

Migration of «ancient European» dialects from Central Asia to Europe accompanied by long intermediate settling in an area of the Northern Black Sea coast, not later than III – II

millennium BC. Archaeologically speakers of «ancient European» dialects can be compared to Yamna culture. By their gene pool at this stage they were carriers of haplogroup R1a1 and R1b1b2. Later R1a1 became dominant among the Slavic tribes, and R1b1b2 – among the speakers of Indo-European languages of Central and Western Europe (Fig. 4).

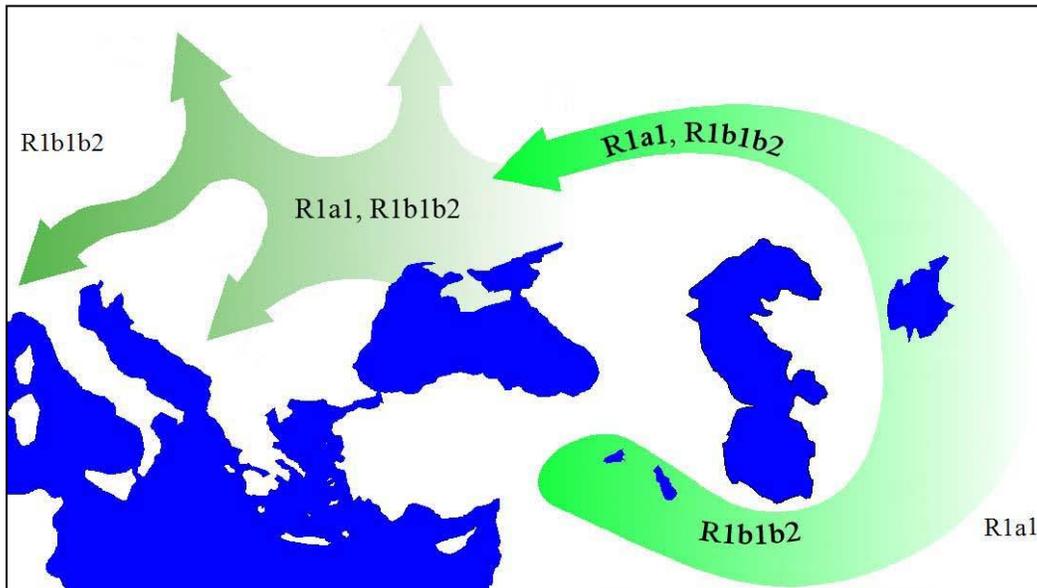


Fig. 4. Alleged scheme of migrations Y-haplogroups of speakers of «ancient European» dialects

Total reasoning

Given all these factors, the authors propose the following unified system of events:

1) The combination of linguistic and archaeological data homeland of Old Aryan language could be located on the territory of North-Western Iran in the region of culture Hissar B in III millennium BC where Old Aryans migrated to the east, south of Central Asia, in the area of Margiana civilization and beyond to the region of the Pamir and Hindu Kush.

2) Most likely, Old Aryans have several haplogroups and their gene pool can consist of subclades of J2 (and, possibly, G2a). These haplogroups are also represented among the Brahmins and the age of these populations is over 12 thousand years. In the gene pool of the orig-

inal speakers of «ancient European» dialects present haplogroup R1b1b2.

3) During the migration of speakers of «ancient European» dialects through the Middle East and Central Asia, and further through the Volga and the northern Black Sea region to Europe, in their gene pool was involved the R1a1 haplogroup. Later the R1a1 haplogroup become dominant among the eastern Slavs, R1b1b2 – among the peoples of Central and Western Europe.

4) In the period of stay of the ancient Aryans in the territory of Margiana in II millennium BC in their gene pool could be included haplogroup R1a1, later this became dominant among the Brahmins.

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