

Impact of the Environment on Human Migration in Eurasia

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MIGRATIONS OF EARLY NOMADS OF THE EURASIAN STEPPE IN A CONTEXT OF CLIMATIC CHANGES

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ABSTRACT

The article is devoted to periodic migrations of Asian nomads (Saka - Scythians, Hsiung-nu - Huns, Turks and Mongols), which are traced from the beginning of the first millennium BC up to 13 centuries AD according to archaeological and written sources. This correlates with periods of humidity rise in the steppes during ancient time. Now while it is difficult to define the reasons of these migrations, but it is possible, that the climatic changes promoted them.

KEYWORDS

Early Nomads, horseman, migration, climate, Eurasian steppes, Central Asia

INTRODUCTION

The Eurasia steppes stretched on 9 thousand kilometers on east from the Middle Danube plain up to plateaus of Central Asia. In the ancient time, they represented a unique region which has played a significant role in the formation of cultural - economical type of various peoples.

Having stable ecosystem, the steppes region stimulated the creation of different economical systems developed by ancient population according to climatic changes and depending on them (Mordkovich, Giljarov, Tishkov, Balandin 1997).

In the end of the 2nd millennium BC, Eurasian steppe nomadic cultures have created their own economic system – cattle breeding (with horizontal and vertical migrations), in which the structure of herds was basically formed by horses and fine cattle that didn't demand stocks of forage for winter. Many nomadic peoples have preserved this

convenient economic system up to the present without any special changes. The system was a progressive phenomenon of Eurasia, but not completely stagnant. It gave new opportunities for growth of well-being of people and for the formation of their culture, stimulating a social stratification and development of the structure of authority. Exactly at the beginning of the first millennium BC the significant progress in a horse-breeding is traced, the new forms were invented and more reliable type of bronze bridle by the large series were made, that was by a basis for formation of a society of horsemen in the form of a centaurs (Bokovenko 2000). In the steppe zone of Central Asia numerous nomadic cultures of the Scytho-Saka type appeared too (Tagar, Aldy-Bel', Maiemir, Tasmola cultures and ets.). The early stages of its development are the most precise: according to the archaeological data, they are fixed already in the 9th-8th centuries BC in the Central Asia. The Scythian culture is perfectly known on numerous rich barrows in Black Sea region since 7th centuries BC. The cultures of the Asian nomadic tribes, in many respects similar on the material expression with Scythian, remained in a shadow and were considered as far backward periphery of the "brilliant" world of Scythians.

RESULTS

The Asian connections of the Scythian culture are not so easily traceable, even though the theory of the eastern origin of the Scythians goes back to Herodotus. Many scholars contributed to its development (Rostovtzeff 1929; Borovka 1928; Jettmar 1967 etc.). There, however, was little evidence on these connections. Only after the "royal" barrow of Arzhan in Tuva (the Central Asia) had been excavated it became possible to prove the reality of the facts narrated by Herodotus (Herodotus, IV, 11).

Arzhan was excavated by M.P.Gryaznov and M.H.Mannai-Ool in 1971 - 1974 in the Uyk high-altitude hollow of the Western Sayan, 150 km to the North-West from the center of Asia (the Piy-Khem region, the republic of Tuva, Russia).

The barrow is a huge stone structure, cylinder in shape, with a diameter of 120 meters and a height up to 4 meters (Fig.1: 1). On the outside it is shored up with a slab casing. Under a massive stone embankment was a complex wooden structure consisting of 70 big log frames (having a square of 15-130 sq. m and a height of 2,5-3 m) made of huge age-old larches. The log frames are also covered with a thick layer of wood on all the sides. According to M.P.Gryaznov, it must have taken no less than 1500 men and 7-8 days to erect the whole structure. Buried within the central double frame were "the king", "the queen" and around of them 6 horses were buried too. Other burial chambers contained still 15 "nobles" - all wearing clothes and weapons. Laid with the "nobles" were 160 saddle horses (2 - 30 in each block) in full harness: with bronze bits, gold and bronze badges on the bridle and bone suspenders made of the wild boar's fangs. In this rich diversity of things it was possible to distinguish 24 types of bridles which were used during that period of time simultaneously.

Unfortunately, the mount had been partly robbed in ancient times and a good deal of opulent precious objects from the royal burial have been lost forever, but even the remaining clothes, oldest of the known in the world carpets, decorations made of gold and silver and magnificent bronze castings testify to the person buried there being very rich and powerful, probably the leader of a group of nomadic tribes. Apart from the Scythian type weapons (daggers, stamps, arrowheads) and numerous horse harnesses the mount contained a whole number of things executed in the Scythian-Siberian animal style (Gryaznov 1980; Grjaznov 1984).(Fig.2).

Another important facet of the nomadic artistic endeavors monumental art - is represented in the Arzhan by the so-called Deer Stone. It is one of the widely known standing stone monuments especially characteristic of the Central Asia, which used to be installed in sanctuaries and burial structures. Most of all them it is revealed in Mongolia and Sayan-

Altai and only individual finds are known in Europe. Dendrochronological and radiocarbon dating indicate that Arzhan dates to the end 9th - beginning 8th century BC (Zaitseva, Vasilev, Marsadolov, Sementsov, Dergachev, Lebedeva, 1996).

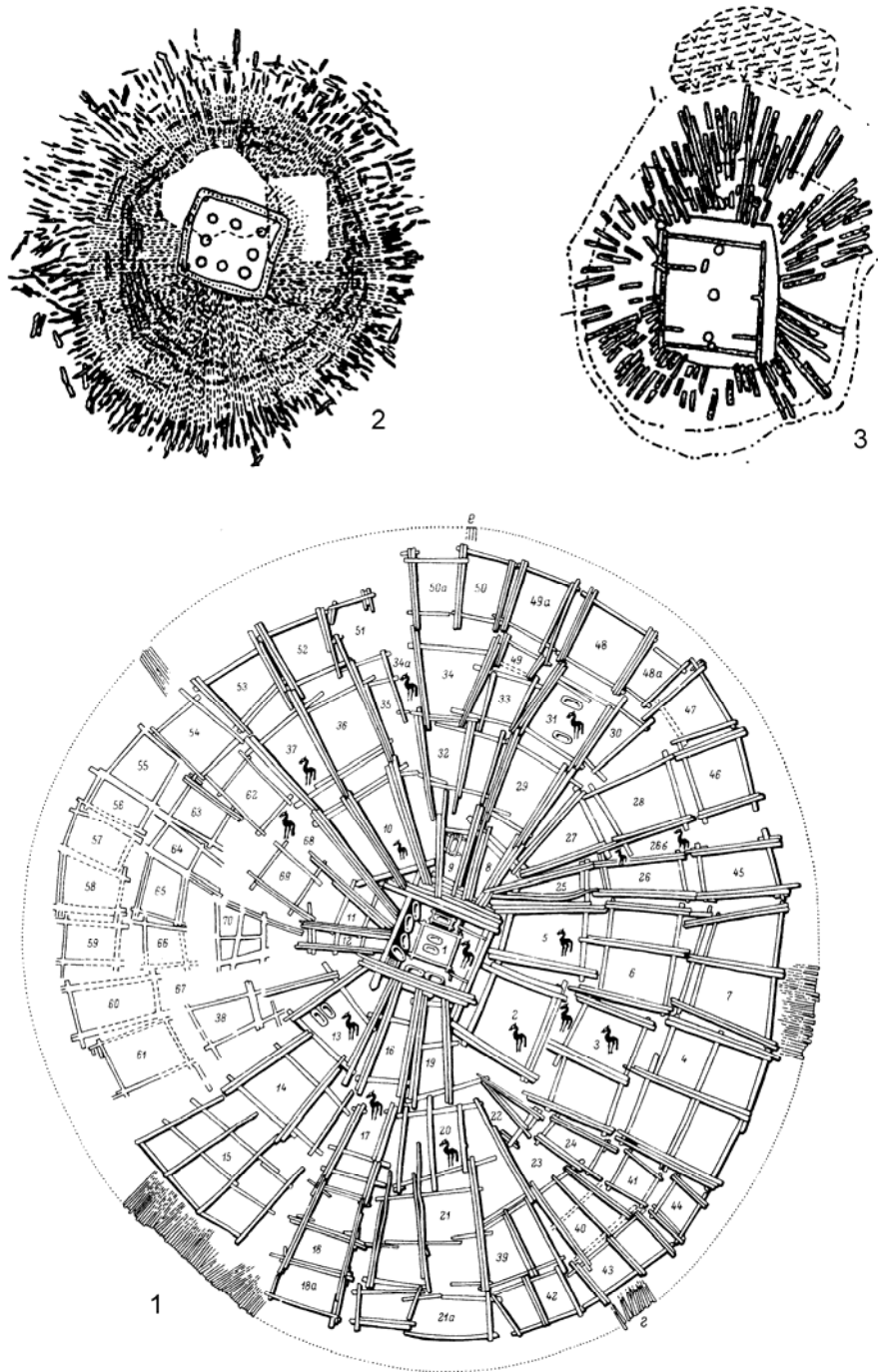


Fig.1. Fig.1. Tent-shaped funeral construction: 1 - Arzhan, Tuva; 2 – Flyarkovka, Northern Black Sea; 3 – Durovka, Northern Black Sea.

Arzhan is an ethno-cultural important site because it is possible to develop a typological analysis of the main categories of the artifacts. These include horse harnesses, weapons and works of art. It is possible to define the areas of origin of the gifts offered to the powerful leader. Offerings found in the northern timber graves came from the eastern areas of Kazakhstan, the Altai Mountains, and the Minusinsk Basin. In the southern burials offerings came from Tuva and Mongolia (Bokovenko 1986). The burial tradition in the kurgan involving a great number of horses is reflected indirectly in the written

sources. The Massagetae worshipped the sun by sacrificing their horses as "he [the sun] is the swiftest of the gods and therefore they give him the swiftest of mortal things" (Herodotus, I, 216). The area inhabited by the Saka and Massagetae, apparently, is necessary to distribute east up to Tuva and Mongolia. There is a hypothesis that Kazakhstan was the original country of the buried of the Arzhan Kurgan (Kyzlasov, 1977). The final solution of this problem is yet to come. The complex has been dated to the 9th-8th century BC according to dendrochronological and radiocarbon analyses and to typology of artifacts). While Arzhan can be call as the earliest "royal" funeral site of the Scythian culture in the steppes of Eurasia. We could think that may be this kurgan was built for the chief of confederation of union of tribes of Central Asia. After 30 years in same valley the "royal" barrow Arzhan 2 was excavated (Chugunov, Parzinger, Nagler 2001). But, this site is possible to date about 7 centuries BC.

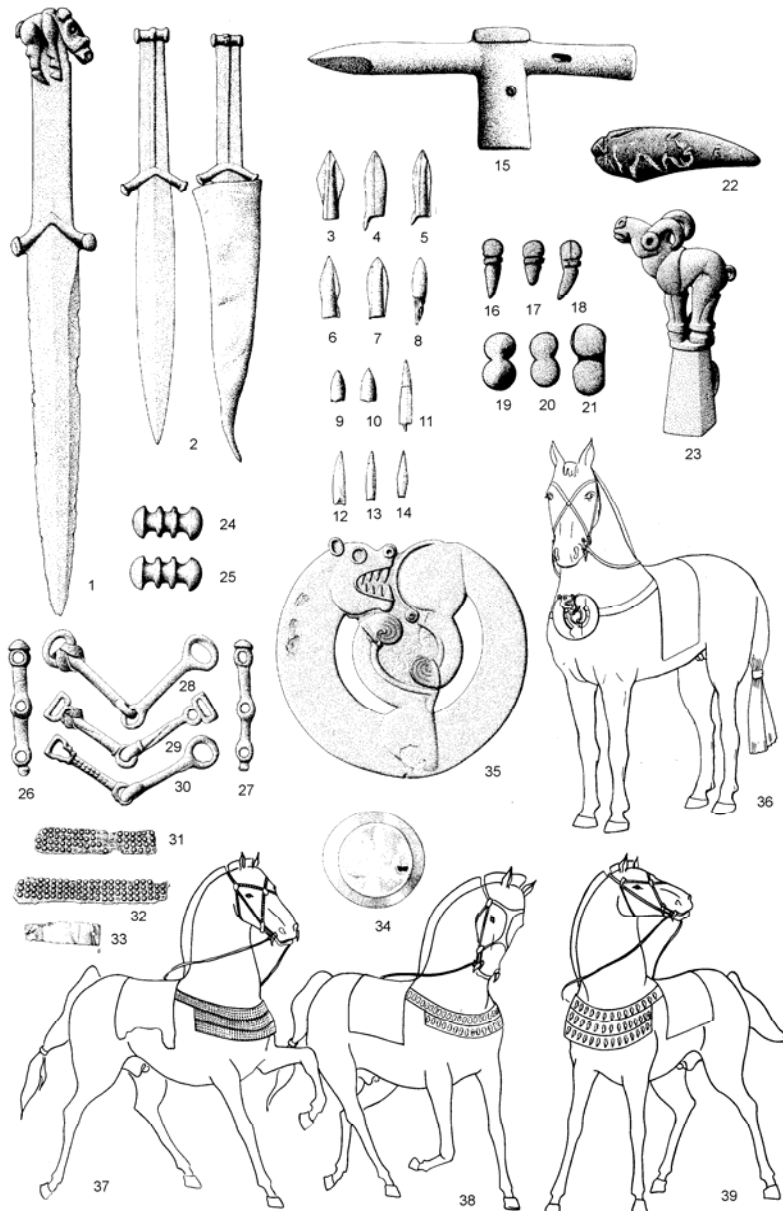


Fig.2. Royal barrow Arzhan 1: funeral artifacts. 36-39 - Reconstruction of the horse equipment of the horse (reconstruction by the author)

This indicates that the archaeological sites of Scythian types of Central Asia pre-date the 7th century BC Scythian sites found in the North Black Sea region.

Thus, all of the main elements of Scythian culture are represented in the burials of the site. They include the typical Scythian forms of weapons, horse harnesses, and the developed animal style decorative arts. The similar situation is also traced in other cultures of the Central Asia (Tagar, Maiemir cultures etc.).

In some scholars' opinion in the pre-Scythian period there were already limited groups of settlers coming to what later became the European Scythia from the East (Terenzhkin 1976). They were followed by larger groups of horsemen of nomadic peoples, their migrations becoming more and more systematic in Scythian time.

In most cases the character of these intrusions is not clear, as well as the origin of the intruders "coming from somewhere in Asia". We can only mark certain elements in the culture of the European Scythia which doubtless have an Asiatic origin and are connected with the cultures of Asia.



Fig.3. Eurasian stag images : 1 - Bronze knife Karasuk culture (end II mill.BC), Mar'yasovo, Krasnoyarsk region; 2 - Barrow Arzhan, Tuva; 3,8 - Turan, Tuva; 4 - Mozola-Khomuzhalyg, Tuva; 5 - Ortaa-Sargol, Tuva; 6 - Boyary, Khakasia (Minusinsk steppes); 7 - Bukhtarma, Western Altai; 9 - Ujgarak, Kazakhstan; 10 - Aksyutintsy, Ukraine; 11 - Dagestan, Northern Caucasus; 12 - Voitika, Northern Caucasus.

In many scholars' opinion it is necessary to distinguish the following of the cultural components of the European Scythia genetically tied with the East: daggers with

butterfly-shaped guards, arrowheads early forms, helmets of the Kelermes type, spiked battle-axes, horse-bits, cheek-pieces of the Chernogorovo and Zhabotinsk type, bordered mirrors, bronze cauldrons of the Beshtaugor type and "stag-stones". We can follow the development of some animal style images (deer, boar, and panther) from east to the west. There are elements of stylization and degradation on the objects from the western part of the Scythian World (Jettmar 1964; Terenozhkin 1976; Il'inskaya, Terenozhkin 1983; Kossak 1987; Klochko, Murzin 1987; Bokovenko, 1989; 1996; Medvedskaya 1992; Alekseev 1992; Kurochkin, Subbotin 1993 etc.) (Fig.3-4). This list of cultural components deriving from Central Asian prototypes can be extended. During the last years new monuments were discovered in the eastern parts of the Eurasian steppes and new groups of objects studied, which opens new possibilities to trace the origin of some of the Scythian cultural components.

So, the Arzhan-type tent-shaped construction on the level of the ancient daylight surface is found in Northern Kazakhstan (the Kenes burial grounds, barrow 1). There it is dated to the Early Scythian period (Habdulina 1987).

To the same period are dated those few tent-shaped complexes of the Northern Black Sea area (Kvitki and Flyarovka in the Cherkassk region, the Tyasmin basin, etc.). The earliest are dated to the 7th century BC, the rest - to the 6th-5th centuries BC (Kovpanenko, Gupalo 1984, p. 56-57; Kovpanenko 1984, Murzin 1984) (Fig.1: 2-3).

Burials of the Northern Black Sea area have similar tent-shaped constructions in rich barrows (the Ula and Kostroma barrows) - in the last case it is difficult to trace the features of these constructions in full detail relying on the available archaeological records. Accompanying horse-burials are also numerous: on the level of the ancient daylight surface remains of tens or even hundreds of horses are found. Burials of warriors with horse-bridles become characteristic of the partially wooded steppe zone of the Northern Black Sea area in the 7th-5th century B.C. (Il'inskaya, Terenozhkin 1983) - in this connection they find certain parallels with the five variants of burials of Kazakhstan and the Sayan-Altai region, where mounted warrior burials become traditional among the nomads from the 8th century or even earlier.

N.L. Chlenova has proved the typological succession of mushroom-pommel daggers with no guards and of long daggers and swords with straight guard (the so-called Karasuk-Cimmerian type) in all regions of the Sayan-Altai and Kazakhstan (Chlenova 1976). Certain transitional forms were penetrating to the Northern Black Sea Area (Subbotovo, Gerbino, Kiev, Obukhovka). The same concerns the 7th-6th century BC Scythian swords with butterfly-shaped guards: in Siberia they present several variants of design for guards and hafts (Kulemzin 1974, fig.32), but only one of these variants penetrates to the west. It should be mentioned, however, that some scholars derive Scythian akinaks from the Northern Caucasus and the Transcaucasian region, looking for prototypes among local daggers of the earlier period (Mahortyh, 1991), though it is not always possible to prove it typologically.

The analysis of harness revealed the types of horse-bits and cheek-pieces preceding those from Arzhan (Bokovenko 1986). The great number and variety of stirrup-shaped bits in South Siberia and Kazakhstan, as well as the discovery of a 10th-9th century B.C. workshop producing them at the site of Kent, also testify to their Kazakhstan-Siberian origin. There are many works dealing with the ties between the Siberian and European Scythian art. The most authentic animal-style representations doubtless originating from the Asiatic Bronze Age images are stags, curling up feline animals and birds of prey. The mapping of these images reveals the tendency of their penetration to the west and at the same time of their gradual schematization (ears, paws and tails turning into circles). By the present time over 600 representations of stags engraved on rocks have been recorded in Central Asia (the so-called "stag-stones"), the earliest of them dating to the end of the second - beginning of the first millennium BC (Volkov 1981). Their style is very close to that of the Early Scythian stags of the Northern Black Sea area. Images of curling up panthers appear not only on stag-stones of the Arzhan stage (Kilunovskaya, Semenov

1995), but were executed in bronze and in gold. A large pectoral plaque of the Arzhan type, but typologically preceding the Arzhan stage, was found in Mongolia (Majdar 1981,



Fig.4. Curled-up feline animals in steppes of Eurasia: 1 - China, grave Fu Khao (XIII -XII cent.B.C.); 2 - China, epoch Western Chou; 3 - Mongolia; 4 - Barrow Arzhan 1, Tuva; 5 - Kosh Pei, stag-stone from the Arzhan valley, Tuva; 6 - Maiemir, Altai; 7 - Siberian collection of the Peter the Great; 8 - Barskoon hoard, Kyrgyzstan; 9 - Sardis, Asia Minor; 10 - Ziviya, Asia Minor; 11 - Ujgarak, Kazakhstan; 12 - Kelermes, Northern Caucasus; 13 - Temir-mountain, Crimea (Northern Black Sea Region); 14 - Kulakov barrow, Crimea (Northern Black Sea Region).

p.32-33)(Fig.4: 3). The appearance of these early examples, their gradual spread to the west along with the tendency of becoming more schematized makes us suggest their origin from the highlands of Central Asia.

DISCUSSIONS

Even those few arguments above mentioned that the nomadic peoples of Asia took active part in the creation of the European Scythian and other later cultures of nomads. Different stages marking the intrusion of eastern elements into the Northern Black Sea area can be distinguished: the 9th-8th century BC - Arzhan stage, the 1st-4th centuries AD - Huns-Hsiung-nu stage, the 6th century AD - Turks stage, the 13th century AD - Mongols stage) to the west towards Europe are traced in archaeological and written sources. It should be mentioned that in each case migrations of certain groups of population are traceable. Initially these were not numerous, dissolving quickly in the local environment; later there were larger groups coming, leaving more formidable evidence of their presence in local cultures. These migrations were gradual, with certain loss of the old cultural features and the acquisition of new ones, and with the involvement of other tribes into this stream on the way. There were two principal routes used by the Asiatic nomads: the northern one, through the steppes of Western Siberia, the Urals, the Volga basin and along the Northern Black Sea coast. The concrete military complexes of Central Asian origin are met in extensive territory from Mongolia up to Europe on a number of sites, such as Ak-Chij III, Ziwiya, Persepolis, Mush, Kaplantu, Norshutepe, Gamtepe, Sardis etc., on our sight, allow to look after southern ways of progress of groups of the armed horsemen (Kossack 1987 etc.). The earliest Scythian sites are concentrated in this partially wooded steppe zone of the lower Don and the Northern Caucasus.

The reasons of these migrations, are caused not only by the internal development of those nomadic cultures (the horse domestication of under rider driving, creation of optimum types of bridles and so on), but probably, by certain climatic changes in this period. The recent researches of palaeoclimate have testified some warming and humid periods in the steppe zone of Eurasia, which coincides with migrations of the part of nomads.

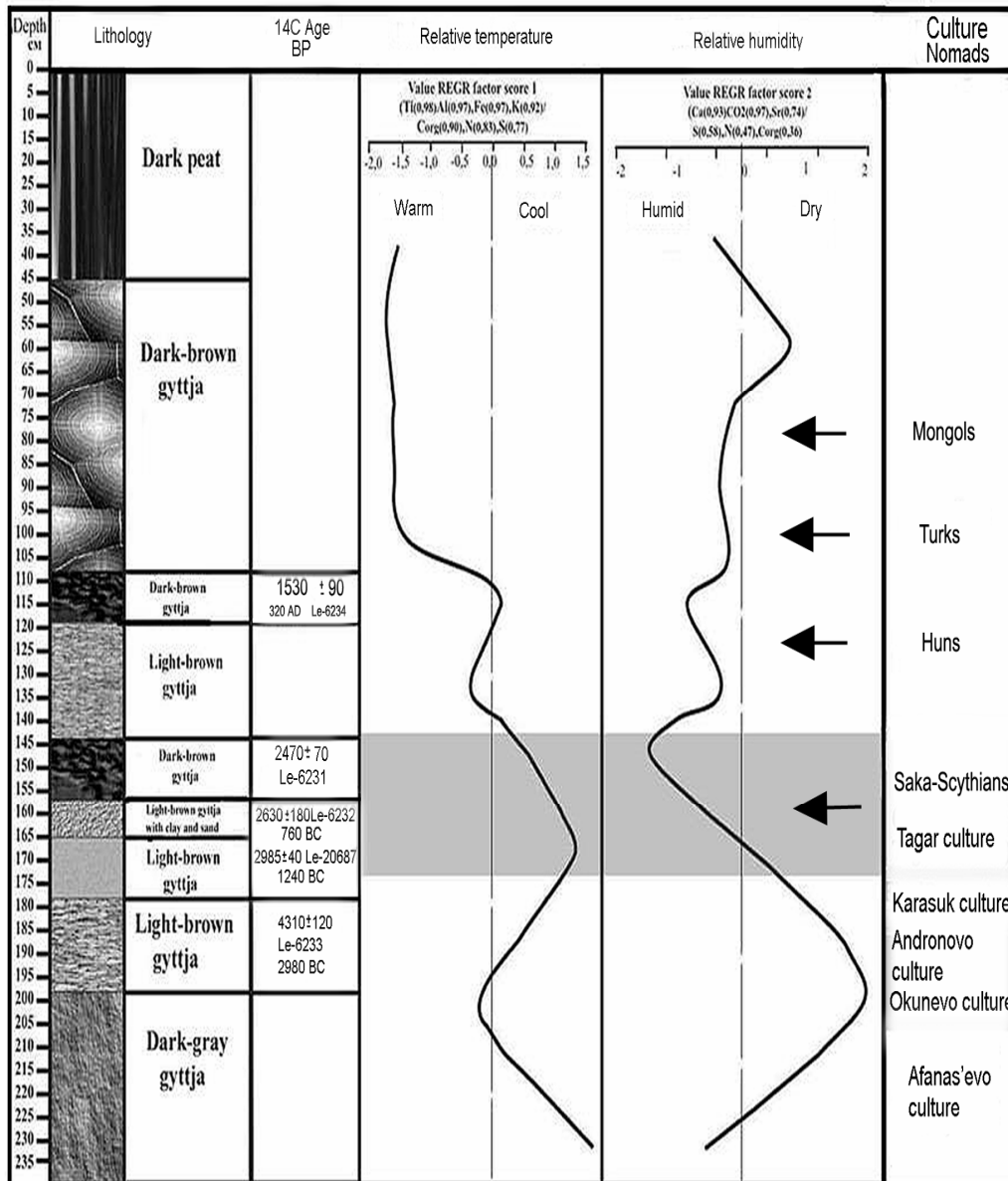


Fig.5. Paleoclimate geochemical records from Kutuzhekovo Lake and stages of cultural development in the Middle Yenisei area.

So, geochemical researches of the lake deposits (the Kutuzhekovskoe and White lakes) and the loess-soil cross-sections from archaeological sites (Tepsei, Arzhan 2 etc.) of the Central Asia have shown significant periodic changes of the climate in the various periods. Thus, during the Bronze Age (3rd-2nd millennium BC) the climate of the Central Asia was much drier and colder than now. The stage of maximum humidity and temperature rise was at 9-8th century BC. The expansion cultures of Iron Age (nomadic cultures of the Scythian time – Tagar culture) occurred in 1st millennium BC too. Some cool and humid climatic conditions are denoted about 1600 years ago (3rd-4th centuries AD). The existence of Tashtyk culture in this area was at 1st centuries BC to 4th centuries AD (Koulikova, Bokovenko, B. van Geel, Dergachev, Dirksen, J. van der Plicht, Zaitseva 2003). In more later time, part of the armed groups Hsiung-nu – Huns and Turks in East Europe - is also attested by archaeological and written sources (Werner 1956; Gumilev 1967; Zaseckaja, Bokovenko 1994; etc.)(Fig.6).

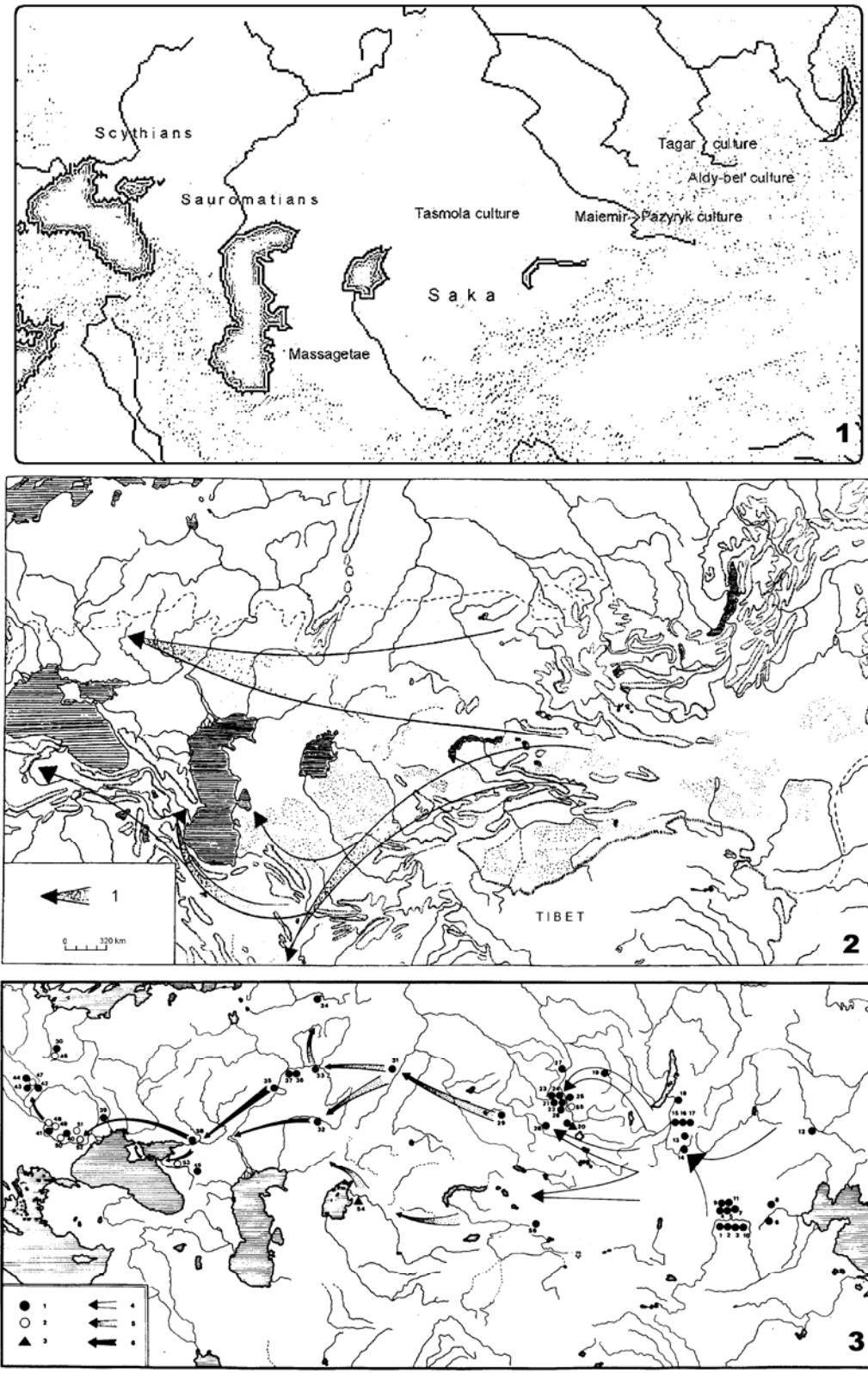


Fig.6. Maps of the Central Asian tribes in the 1st mill. BC (1) and reconstruction of migrations trajectories of ancient nomads: 2 – Scythians (Bokovenko 1996), 3 - Hsiung-nu – Huns (Zaseckaja, Bokovenko 1994).

Significant raise of humidity and some temperature rise in the steppe (growth of the biomass production) about the 1st millennium BC probably became global. This has been

well traced from the western Central Asia to the western Siberia (Levina, Orlova 1993). In the Europe a warm climate is replaced by more cold and wet at this time (Kilian et al., 1995; van Geel et al., 1996, 1998), which probably stimulated movement of a part of nomads on the large distances.

CONCLUSION

Thus, from the beginning of the 1st millennium BC, periodical migrations of a part of the population of Asian nomads (Saka-Scythians and Sarmatians in the 9th-3rd centuries BC, Hsiung-nu - Huns in the 1st-4th centuries AD, Turks in the 6th century AD, Mongols in 13th century AD) to the west towards Europe is traced in archaeological and written sources. This correlates with periods of humidity rise in the steppes. The origin of these migrations is not yet clear. They may be caused by political ambitions. But there are no doubts that climatic changes played an essential role by stimulating the move of numerous nomads on far distances.

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