
A HORSE IN A BURIAL-MEMORIAL CEREMONY OF ANCIENT NOMADS IN KAZAKH ALTAY REGION

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Abstract

The paper describes the role of a horse in a burial-memorial rite of the Kazakh Altay ancient population. The study of the archaeological collection has allowed to state anew the problem of reconstruction of the ritual, which was giving the deceased person a saddle-horse. Having analyzed the field materials and other sources, the authors concluded that the territory of the Kazakh Altay in the ancient nomads era was a highly developed cultural community centre, where the role of a horse was essential not only in the economic activity, but also in the spiritual culture. The paper also describes an archeologically found horse paraphernalia by means of interpretation and analogy. The data were attained by means of paleozoology and palynology.

Keywords: horse, Berel, mound, burial, Kazakh Altay

1. Introduction

The custom of burying a horse or its part, together with the deceased man was widely used in the I century BC by Kazakhstan steppe tribes. In this era, the role of a horse in the tribes' lives became even greater. It is only since the first millennium BC when in the steppes, semi-deserts and mountains of Kazakhstan semi-nomadic and nomadic cattle breeding became a principal, dominant way of household living. Nomadic herders could not imagine either the earthly or the 'otherworld' life without a horse. Since then a horse becomes an attribute of the funeral and memorial rites of the tribes living on the territory of Kazakhstan and later — of the Kazakh people.

From 1999 onwards there has been an integrated research conducted on the Berel burial ground, located in Katonkaragajsky district of East Kazakhstan province in Kazakhstan Republic. As a result, new unique data on the culture of the Kazakh Altay population in the second half — late I century BC was obtained. The burial ground is formed by four groups of objects, now numbering

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more than 70 mounds with stone mounds of various sizes. Most of the mounds belong to ancient nomads' epoch. There are also funerary constructions of the early Turks.

For over 15 years, we have investigated more than 20 burial mounds from the era of the early Iron Age. The results of the study have given the scientists the unique pieces of ancient masters, demonstrating high technological level of materials processing and creation of artificial permafrost, knowledge in the field of Medicine and Biology. They have marked new directions and trends of the international scientific integration and an integrated approach in the development of acute problems of cultural-historical processes of the ancient times.

Due to the fact that the artificial permafrost conditions were created in the burial chamber, now we have preserved objects that accompanied the burials of nobles in Berel Kurgan: clothes, horse harness and decoration made of wood, saddles and fabric, wooden dishes, things made of leather and felt. To date, Berel is the only monument on Kazakhstan territory, which preserved organic treasures. Especially valuable for us are the remains of 13 riding, saddle horses in ammunition, found in Kurgan #11. They accompanied the deceased person to a different world. Not only horses' decorations were preserved, but also their skin, which allowed to determine the horses' colour; as well as the internal organs and the contents of the stomach. Based on their genetics analyses, veterinarians, paleozoologists and scientists of other specialties have revealed many facts of ancient Berel tribes' life, some of which are represented in our article.

The main goal of our article is defining the role of a horse and studying the horse's main system of decoration as a specific 'visual text' left from the times of ancient nomads of Kazakhstan Altay.

2. Description of the horses buried in burial mounds

To identify a number of trends that can help to understand many aspects of a horse's role in ancient Berel tribes, we shall consider the data obtained during the research of burial-memorial complexes. Starting from the year 1999 up to the present we have excavated 20 tombs and found more than 80 remains of horses. According to the quantity and composition of horses' harness, mounds with burials can be divided into several groups. The first group includes the mounds containing 8 or more horses, the so-called 'Royal' burial. These are Mounds # 10, 11, 16 and Big Berel Kurgan excavated in the 19th century. The first horse in the funeral rite of the early nomads on the territory of the Kazakh Altay was recorded in the Berel cemetery in the second half of the 19th century exactly in this mound. Barrow #1, which is located on the edge of a triangular river terrace-platform, is the largest object in the burial ground. V.V. Radlov excavated it in 1865. The 'king', buried under a large mound, was accompanied, according to the reports, by 17 horses. The northern wall of the burial chamber was hiding sixteen animals laid in four rows (four horses in each row). One

horse was buried inside the chamber, near the deck [1]. The horses were saddled and equipped. It was noted that the horses, lying on the eastern side, had a more complicated decoration. Some of those findings are preserved and stored in the Museum of Russian History, but the information about the horses' bone remains of the is missing.



Figure 1. Barrow # 11, 13 stallions of light suit, co-buried with the King (reconstruction)



Figure 2. Barrow #10, the chamber and its compartment with 10 horses.

Kurgan #11, where one of the 'Kings' of the nomadic state foundation and a female character were buried, thirteen horses' remains were found. The animals were stacked in two tiers: in the lower tier seven horses were located, in

the upper — six. They were lying on their abdomen and on their side with the bent legs, heads oriented to the North-North-East (Figure 1). It is noteworthy that the long lines with horses are clearly separated from each other by several alternating layers of birch bark and Kurile tea. The horses were saddled and equipped. The heads of some of them were decorated with masks, topped by wooden models of mountain goat horns. The two-level location of the horses, co-buried with people in Barrow #11, is interesting both from the perspective of ritual and pragmatic point of view. Some time ago the specialists expressed their opinion about the man and the woman being buried at a different time in the deck-sarcophagus, hollowed from a single barrel of a 250-260-year-old larch, diameter 90-95 cm, length 350 cm [2]. The deck was clearly intended only for one person. On this basis, it might be assumed, that the second tier of six horses was connected with the woman's later burial. It is possible that the odd and even number of the horses in the tiers can also be associated with the male and female symbols of numeric order. Of course, other principles of deciphering the meaning of such a burial are not excluded.

The signs a two-tier burial of eight horses was observed in Barrow #16. In the centre of the mound there was a grave pit sized 3.5×5.5 m and depth of 5 m. The pair burial of a man and a woman was found there. The burial was done in a wooden construction. This construction and the two tier burial of horses were separated by a wall built of large stone blocks. How rich a parade horse decorations could be, is demonstrated by the fact that while robbing, the heads of all eight horses were taken away and left in the robbers' pass.

In another 'royal' barrow (#10), situated nearby, horses were lying in three rows on their abdomen with the legs bent, head to the North-East (Figure 2). They had been saddled and equipped. The first horse's head was bent behind the northern angle of the frame and covered with a mask, topped with a wooden model of mountain goat horns — symbolizing the divine inhabitants of the Altai Mountains heavenly peaks in a ternary vertical classification of the Universe in the myth-poetical mind.

The second group of burial mounds (# 9, 75, 30 and 41) with the burial of horses, includes the burial of the middle social class representatives. The first two discovered five specimens, and the remaining two — four horses. The barrow burial chamber #9 was a rectangular pit 3.5 m deep with the remains of the blockhouse and its wooden ceiling made of logs. Several layers of stones and slabs blocked the north-western half of the pit with the burial of horses. In the animals' feet there was a vertically installed stele. The burial of five horses was partially covered by pieces of birch bark. In the burial pit, mound # 75, the North wall of the blockhouse with a deck hid five horses lying in two rows, heads oriented to the North-East (Figure 3). In the front row there were two horses and three in the second. They all were equipped and saddled. In addition to iron parts, there were piercing parts, spring-loaded bone buckles, fragments of gold foil, etc.



Figure 3. Barrow # 75, remains of the blockhouse with a deck at the bottom of the grave pit and five buried horses.



Figure 4. Barrow # 71, burial of two horses and human remains.

The third group of burial mounds is conditionally denoted as a dumping of ordinary society members. These contained from one to three horses (mounds # 4, 41, 8, 71, 31, 34, 15, 36, 72, 74, 32, 40, 42). In the burial pit of two barrows (#

4, 41) there were three horses discovered in each. Horses in Barrow #4 were lying along the wall of the grave pit. One of them had a mask on the face with horns of mountain goats and another had preserved horse stable elements of truck suspensions in the form of fish, which also allows to associate it with the idea of transformation or, more likely, the magical transfer of idiomorphic properties to the horse (and the person) which would let them overcome water obstacles while travelling to another world. Barrow #41 is 7 m northwest from Mound #40. Along the north-western wall of the grave pit in a narrow space 0.45-0.6 m wide there was a burying of three horses lying on their left side with their legs under the abdomen one after another in the same row.

In the burial mounds # 8, 71, 31, 34.15 two horses were buried. Mound #8 at 3.06 m depth, in front of the chamber there were two horses, but they appeared to be in a strongly damaged condition. On the bottom of grave pit #71 there was a burial mound of a man in a frame of poles, covered with four boards. Along the north-western wall of the grave pit two horses were buried. They were lying next to each other in the same row with their legs preloaded under the abdomen (Figure 4).

The person buried in Mound # 31 was accompanied by two horses, lying next to each other, along the western wall of the grave pit, heads to the east. The horses were separated with a large stone of oblong shape (Figure 5). At the bottom of the grave pit in Mound #15, along its northern wall the skeletons of two horses were lying their heads oriented to the east. Horse corpses were leaning against the wall of the grave pit. The horses' skulls, cervical vertebrae and the back had many pieces of silver foil, in which the wooden jewellery of the horse equipment were apparently wrapped.

In the rest of the barrels of this group one horse accompanying the deceased per mound were found. If describing the funeral rites including the horse, Mound #36 is quite interesting. Here, especially for a horse, a stone building was erected that was located between the north wall of the main grave pit and the burial chamber, designed for humans. The construction for the horse is also a kind of box, marked on the key areas with vertical stones and blocks, which are dug in and strengthened hard. Its bottom, covered with flat slabs, was at the level of the transverse overlapping blocks of the above chambers for the deceased man. The horse's body was squeezed into a narrow space, according to the general principle — it was put on the bent legs, as in most of the mounds of the time. The horse's head and neck oriented to the east were elevated in comparison with body position and rested on a stone base (Figure 6). Then the horse compartment was immured with the medium size stones and slabs. That's why probably, the burglars who broke into the burial chamber with crib and deck, and destroyed it completely, did not notice the richly decorated horse immured behind the northern wall. This horse's parade-funerary equipment is made of deer antlers. It is a unique work of ancient Berel inhabitants' art and today it is the richest collection of artefacts made of Scythian and Sarmatian time horns in Eurasia.



Figure 5. Barrow #31, in the chamber there is a man and his stuff, and near the north wall of the pit there are two horses.



Figure 6. Barrow #36, the remains of the ransacked construction and dumping of the horse.

3. Archeological and patho-morphological research of horses remains

Paleozoological studies of horses bone remains from Berel mounds were conducted in different years by T.N. Nurumov, L.A. Makarova, P.A. Kosintsev and K.A. Kashkinbaev. Due to the permafrost lens, the degree of horses' remains safety in some burial mounds allows to determine their colour. Especially favourable in this regard were the conditions in Kurgan #11. There is

a version that the animals were shot in the forehead and the decorated body was placed into the tomb, but at the same time, it is observed that the corpses had undergone some procedures before the burial. In addition, some horses had preserved soft tissues and the stomachs contents.

Osteometric study of the horses found in burial mounds #11 and #18 helped give the provisional description of the animals [3]. Comparison of measurements of the single skull from Mound #18 (standard length: 490 mm) with skulls from burial mounds in neighbouring districts of Altai shows that the Berel skull length was greater than the average skulls length of the horses from the Ak-Allah -1 memorials (475 mm), Ulandryk (468 mm), Pazyryk (485 mm). The same situation is with the average length of metacarpal and metatarsal bones: Pazyryk horses appear to be smaller. The anatomic condition of upper and lower jaws teeth of all the thirteen horses from Mound #11 are more heavily worn than the teeth of animals from Mound #18. Most of the horses' upper jaw teeth have a short protokon that may be due to the worn teeth or they might represent the Asian breed, which is characterized exactly by a short protokon. The latter proposition can be true because of a pointy mesoscale.

K.A. Kashkinbaev conducted morphological, ultrastructural and pathomorphological research of the preserved organs and tissues of horses from Mound 11. He studied the hematological, cytological blood components and ultrastructural changes of form elements, thus having discovered the phenomenon of their transformation into a bone tissue. The inspection of the dead horses' exterior showed that they had been of good fatness. The abdominal cavity organs, thick and thin sections of the intestine, gland and parietal fat 6-7 cm thick, blood vessels in the soft tissues, skin partly, hair, manes were very well preserved. At autopsy, the microscopy of blood smears of venous and arterial vessels of the discovered horses found red blood cells and white blood cells which showed little morphological or tinctorial difference from healthy animals of local breeds. In accordance with the classification, the bulk of the red blood cells were normocytes 7.0-8.0 μm . In addition, there were a few megalocytes. The large intestine contained, along with well-preserved green forage mass, the eggs of horses' parasitic diseases pathogen [4].

A long and intensive use of a horse as a means of riding and draft power in mountain conditions can be proven by numerous traces of injuries identified in the Berel horses' bone remains: linear fractures of the intervertebral discs, articular surfaces, bone growths and severe pathology, ankiloziring-destructive changes of thoracolumbar spine and other diseases [4, p. 341].

Unique conditions of keeping horses in Barrow #11 enabled the palynological analysis of their digestive tract contents [5] and stating the season of burial procedure. When washing the contents of digestive tract, no fruits and seeds suitable for definition were found, but the remains of needles, fragments of cereals stems, fibre bast were found. Two palino-complexes were studied. Palino-complex A showed a small number of pollen grains. Basically it was the pollen of *Pinus sibirica*, *Larix* sp., *Betula* sp., *Betula rotundifolia* Spach., *Alnus* sp., *Berberis* sp., *Artemisia sericea* Web, pollen, *Chenopodiaceae* *Poaceae*

family representatives, as well as ferns spores, moss, club-moss. Palino-complex B has lots of pollen. It is well preserved and demonstrates a notable increase in species diversity. There are some dust elements, fragments of the leaf cuticle. Individual pollen grain of conifers (*Pinus* sp., *Larix* sp., *Abies* sp.) and amentaceous elements (*Betula* sp.) were defined. The complex basis is made of herbaceous plants pollen of the family Poaceae, Asteraceae (representatives of the genera *Serratula* sp., *Sonchus* sp., *Taraxacum* sp., *Artemisia* sp.), Chenopodiaceae, Convolvulaceae, Geraniaceae, Caryophyllaceae, Saxifragaaceae (*Saxifraga* SP.), Rosaceae.

Timing of Altay plants blossom, whose pollen is represented in palino-complexes, is in June-July. According to pre-trial palynologist' conclusion, the burial took place at that period. The difference in palino-complexes compositions is possibly related to differences in forage land of mountain pastures, which are caused by vertical zoning of vegetation. At the same time, we do not rule out that the change in the composition of the vegetation component of the horses' digestive tract is explained by the conditions of preservation (the lower tier of animals survived better than the upper one). Birch bark and Kuril tea, found in the grave, were probably used for sealing and conservation of burials, due to their antiseptic properties and the presence of tannins.

4. Horse equipment

The term 'horse equipment' has multiple designations [6]. We use it meaning a horse harness for horse-riding, consisting of a headband, a saddle and its periphery — the chest and under-tail belts and a bridle (with or without a buckle). The bridle set of Berel horses is traditional and includes sub-head, head and face thongs. It is lavishly decorated with various pendants made in the form of zoomorphic images augmented with plant motifs. The bits are mostly forged out of iron and quite simple, the bronze ones are few. The horse mask, the main cover, the crest cover, case for the tail and curly mane or tail haircut are irrational, from the perspective of pragmatics, categories of things, used only for ritual and ceremonial activities. Today the scientists know a variety of instructional techniques of studying the rear nomadic horse equipment as a set of material objects, developed in a particular ethno-cultural environment [7].

The largest number of findings is related to horse graves in Berel mounds # 11, 10, 9, 36, etc. Look at some examples. Today, the horse equipment of Mound #36 can be reconstructed with the highest reliability as it was preserved in pristine condition. We performed reconstruction of the decoration (Figure 7).

In two Berel barrows (# 10 and 11), more than ten remnants of saddles are so far found, but most of them are under processing and restoration, so it is still early to talk about their specifics. The design features of Berel samples, of course, belong to the classical pazyryk saddles type: they had the periphery, i.e. under-tail and chest belt and a felt hubcap with different pendants, often decorated with magnificent appliqués, depicting scenes of anguish or procession

of fantastic creatures. They were fastened with one tight, which was secured with a bone (or horny) buckle or a simple node. The bone buckles of the saddle-girths differ in form and location of functional details, according to Marsadolov, it was a spout-top [8], according to Stepanova, a top-button, [9] or a bent hook, which defined the manner of fastening. Some Berel saddles have wooden (sometimes horny) arcs of front and back bows design.



Figure 7. Reconstruction of a riding horse equipment, Barrow #36.

In the area of Pazyryk culture, fundamental structural differences between the saddles are not noticed. They differ among themselves mainly in artistic design of composite parts and elements. Therefore, experts so far state only two types [10]. Component parts and technology of these seats production, as well as the decor of their tires, are described in detail in the works of S.I. Rudenko [11] and other authors [12].

A saddle that is close (but not identical) to the Pazyryk design, comes from the Subashy burial in Sintsyan [13]. This allows, in the context of the numerous findings of ‘pazyryk style’ with mummified human remains in the deserts of the Tarim and Turfan, to raise the question about the enlargement of the eastern area of Pazyryk culture (but that’s another issue).

Exactly the same as from Subashi, nomadic saddles (more narrowly, pazyryk ones), judging by the terracotta figures, were used in the cavalry of Qin Shi Huandi [14]. At the same time, it is possible that these clay models could generally depict a body of warriors-mercenaries from nomadic society, serving during the unification wars of 228-210 BC in the Qin Shi army with their horse, weapons and ammunition. Rudenko suggested that pazyryk saddles belong to the widespread type of Scythian saddles [11, p. 161]. However, the documentary

evidence about the Scythian saddles of the Western Eurasia are few, so it's hard to create an opinion on the details of their designs.

Apparently, there is reason to assume that the original form of soft saddles was invented by the Pazyryk archaeological culture creators in Altai Republic not later than the 5th century BC and spread throughout the Eurasian steppe, of course, undergoing modifications. So the original type of soft saddles could be called pazyryk (rather than Scythian in general) if separating the eastern 'subashinskiy' and the western 'chertomlyk' variants. However one need to keep in mind that the series of articles on the construction of soft 'Scythian' saddles made by E.V. Stepanova [15] and others [16] showed the need for harmonization of basic notions and development of common description and study principles.

It is crucial that, as evidenced by the traces observation, all the items of horse decoration obtained from Berel mounds were made solely for the sake of accompanying the burial and do not contain traces of their usage in real life. All of these products - plates, psaliyas, pendants, belts delimiters and others - were decorated with carved patterns and covered with golden foil, sometimes with tin and vermilion. These highly artistic things are made in a special manner, typical of the art of the early nomads in the so-called animalistic style. A feature of this style is that using images of certain animals — cat predators, deer, horses, eagles, fish, wolves, camels, boars, mountain goats and sheep, hares, fantastic animals and scenes of anguish — the world view was demonstrated. By means of these images, according to the pagan beliefs, the depicted animals' qualities were transferred to a man, a horse, to the weapon and the dishes.

5. Discussion

As a result of many years of stationary excavations in the Berel cemetery, we got one of the largest collection in the world of horses bone remains from 'Scythian and Sarmatian' times. Naturally, a horse was playing a special role in the system of life and sustenance, as well as in burial-memorial practice and, accordingly, in the myth-ritual complex of ancient Berel inhabitants thanks to its particular biological characteristics. Horses, buried together in elite barrows, with a set of equipment, saddles and their peripheries; masks, crowned with mountain goat horn models; mane decorations and other elements were in many cases decorated with high art plaques and various pendants. The presence of such a rich source allows to set and solve a number of pressing issues both of biological and historical-cultural nature, in particular, questions related to the ancient horse breeding and the horse's role in religious and mythological system of early nomads in Eurasian steppe areas.

Berel horses placed in the grave with the legs bent under the abdomen have their heads oriented to the East. The process of killing animals was deeply symbolic, perhaps comparable to the blow of the beak of the fantastic prey bird — Griffin, whose beak was the model for creating striking surface of combat weapon — 'chekan'. On Berel horses' skulls there are holes hit by this kind of

weapon. It is possible that this action can be seen as obeying the requirement that ensured some kind of reincarnation [17]. Thus, the animals did not experience any other injuries, thus their body integrity was maintained, since horses were supposed to deliver the souls of the dead to the other world. To achieve this goal successfully, the animals were camouflaged as various animalistic images of ancient nomads' bestiary, which existed in their complex system of religious and mythological ideas. Horses' heads wore masks with horns of mountain goats, the animal that inhabits the mountain tops, symbolizing the upper world. The horns of various animals, including deer, mountain goat and sheep, etc., have diverse semantic value. This sign marks such qualities as power, might, strength. Mountain goats' horns on the head mask emphasized the divinity and uniqueness of the earthly ruler, making him equal to the heavenly heights — the highest sphere of the Universe, inhabited by the ancestors' spirits. We shall note that deer antlers as well as the horns of mountain goats, elk's, bull's, argali's, etc. have their own sense content, holding a special place in the religion and mythology of the various peoples. Animal horns are associated with the idea of rebirth of life, the Tree of life [18].

Any mask is a representative of an image; its usage, therefore, is related to the implementation, integration of another image, by means of forming [19]. In our case, there is a double concealment or strengthening of the horse image because one mask has the images of a mountain goat and a feline predator. The horns themselves have, as noted above, the maximum degree of significance and their relationship with the head mask and the general 'visual text' of the horse's parade (or ritual) decoration (it is not 'sacrificial' or 'dedicated' like some people think), gives them a greater conceptual mythological entity. In addition, for the burial with the representatives of highest social classes certain suit stallions were chosen. The mythological consciousness of ancient nomads associated orange, close to red, with the colour of the Sun and the sunshine [20]. For example, all thirteen sacrificed horses from Berel barrows #11 wear of the same suit. From the ethnographic research by L.P. Potapov, who studied the Altai shamanism, it is known that a particular deity demanded the horses of a particular suit. For example, for the deity of 'Earth and water' was supposed to be sacrificed red horses [21]. The heavenly essence of personalities, who was escorted to another world by fire-style (red) and fastest animals, was emphasized by ancient authors too [22]. All the animals buried with a man from Berel mounds were stallions. This ritual norm can indicate a specific cast of a herd of horses considering that a cant of stallions could consist of 30-40 animals [23].

Thus, the main component of Berel economic-cultural type was extensive animal breeding with a clear predominance of horse, due to the site-specific ecosystem of the region. The cult of a horse, which appeared in the ash of ancient times, is associated above all with the special role of this animal in the life support and functioning systems, that's why complex and multistage rituals and ceremonies (including the transient cycle) were being developed for several millennia and occupied a significant place in the religious-mythological system of nomadic peoples, up to the present ethnographic moment.

6. Conclusion

The huge number of buried horses in Berel cemetery reveals the polysemantic meaning of a horse image in religious-mythological representations of ancient nomads. The heavenly horses had to help achieving eternal resting place in another world. As noted above, all the burial horses were placed in the north side of the inside grave construction with their heads to the east. It is possible to assume that the heads orientation in one or another direction pointed out the route that ancient nomads considered to be 'the road to the world of the dead'. Ritual procedures of burying the horses were associated with more than one specified rules. The selected horses were killed beside the grave pit by 'chekans', all the Berel horses have this trauma trace in the skull.

Thus, the analysis of the available sources, suggests that ancient nomadic Kazakh Altai tradition of human burial with a horse in a burial chamber, as well as the formation of the corresponding mythological and philosophical views, are explained by the following two circumstances. First, in the nomads' culture from the studied region, the horse played a leading role in the social and economic life of the society. Secondly, the important role of the horse in the social life of any ancient nomad promoted the further development of religious and mythological system involving a horse. In short, the dedication of a horse to the dead person was associated with the cult of the dead and the belief of ancient Berel people about the need to transport the deceased to the underworld.

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References

- [1] S. Sorokin, *The works of the State Hermitage*, Vol. 10, Soviet Artist, Leningrad, 1969, 219.
- [2] Z. Samashev and V. Mylnikov, *Woodworking in ancient cattle-breeders of the Kazakh Altay*, SF 'Berel', Almaty, 2004, 204.
- [3] L. Makarova, *Biometrics of two Berel mounds horses*, LLC 'Agroizdat', Astana, 2007.
- [4] K. Kashkinbaev, *Berel horses. Paleopathologic aspect of the study*, Institute of archaeology in the name A.H. Margulan, Astana, 2013.
- [5] S. Nigmatova, *Kazakh steppe nomads: ethno-cultural processes and contacts in the Scythian-Saka Era. Reconstruction of the climate and the characteristics of economic-cultural type of ancient nomadic Kazakh Altai according to palinology data*, Presidential Center of Culture, Astana, 2008, 347-349.
- [6] A. Tishkin, *A riding horse equipment in the Altai Mountains in the early iron age and the middle ages. Finds some elements of horse equipment the Scythian epoch in the foothills of the Altai Mountains*, Altai State University, Barnaul, 1998, 78-90.
- [7] A. Tishkin, V. Gorbunov and T. Gorbunova, *Archeological remains in the Valley of the Bijke (mountain Altai)*, Altai State University, Barnaul, 2005, 9-10.

- [8] L. Marsadolov, *A riding horse equipment in the Altai Mountains in the early iron age and the middle ages. The main trends in the forms of fish, horse buckles and psali in Altai in VIII-V centuries*, Altai State University, Barnaul, 1998, 22.
- [9] E. Stepanova, *Equipment of the nomads of Eurasia. Evolution of supporting closure of the Altai kurgans of Scythian times*, Altai State University, Barnaul, 2005, 110.
- [10] B. Kubarev and P. Shulha, *Pazyryk culture (mounds of Chewie and Ursula)*, Altai State University, Barnaul, 2007, 123-125.
- [11] S. Rudenko, *Culture of Central Altai in Scythian times*, Nauka, Moscow, 1960.
- [12] N. Polosmak and L. Barkova, *Costume and textiles in the Altai (IV-III centuries BC)*, Infolio, Novosibirsk, 2005.
- [13] L. Enguo, *Archaeological Treasures of the Silk Road in Xinjiang Uygur autonomus region. Harness*, Shanghai Translation Publishing House, Shanghai, 1998, 255.
- [14] J. Portal, *The Terracotta Warrior*, The British Museum Press, London, 2007, 76-77.
- [15] E. Stepanova, *Archaeological Guide*, **13** (2006) 103-150.
- [16] A. Simonenko, *Sarmatian horsemen of the northern Black Sea coast*, Nestor-history, St. Petersburg, 2010, 221-222.
- [17] Y. Mikhailov, *"Rites of passage" in the cultural traditions of the ancient people of southern Siberia*, Proc. of the 3rd annual session of the Institute of Archeology and Ethnography of the Russian Academy of Sciences, Institute of Archeology and Ethnography, Novosibirsk, 1995, 84-86.
- [18] A. Martynov, *Scythian and Siberian world. Art and ideology. On the ideological basis of the art of the Scythian and Siberian world*, Nauka, Novosibirsk, 1987, 20-22.
- [19] L. Novikova, *Reconstruction of ancient beliefs: sources, method, target the phenomenon masks in culture (the technique of reconstruction of ancient views on intercultural level)*, GMIR, Leningrad, 1990, 15-17.
- [20] A. Akishev, *Art and mythology of Saks*, Science, Almaty, 1984, 143.
- [21] L. Potapov, *Folklore and ethnography. A horse in the beliefs and the epic of Sayano-Altai*, Nauka, Leningrad, 1977, 167-168.
- [22] Herodotus, *History in nine books*, G. Stratanovskij (ed.), Nauka, Moscow, 1972, 203.
- [23] L. Baskin, *The behavior of ungulates*, Nauka, Moscow, 1976, 26.