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Grave Goods of an Elite Saka Burial at Kyrykoba in the Context of Cultural Ties Between the Nomads of Kazakhstan and Siberia

This article describes the findings of excavations of an Early Saka kurgan at Kyrykoba, Eastern Kazakhstan. The kurgan had been looted; human remains, according to physical anthropologists, belonged to a mature woman. Her cranium exhibited trepanation. Some 200 artifacts were found, mostly gold and stone ornaments (belt clips, gold seed beads, and simple beads). The most interesting find is a bimetallic pin made of iron. Its rod is missing; the tiny head, less the 1 cm in diameter, is covered with gold foil. On its surface, there is a figure of an ungulate with a curved antler, its body twisted 180°. This stylistic device in the depiction of ungulates and predators is typical of the Scythian-Siberian art of Kazakhstan and Western Siberia in 700–300 BC. Other rare finds include ornaments made from a cretaceous layer of oyster shells, such as pendants shaped as oval plates imitating tusks, or figurines of predatory animals—20 pieces, ranging in size from 0.4 × 0.4 to 2.5 × 2.5 cm. Oyster shells with thick cretaceous layers had been procured from the coasts of the Indian Ocean and the Persian Gulf. The beads and the animal figurine made from cretaceous layers of oyster shells are paralleled by those from an Early Scythian era burial at Gilevo-10, Altai. These artifacts indicate regional and intracontinental trade and cultural ties in Eastern Kazakhstan and Western Siberia, evidenced by similar technological traditions, images, compositions, and decorative motifs.

Keywords: Early Iron Age, Kazakhstan, Altai-Sayan, Scythian animal style, trepanation, ornaments from cretaceous layer of oyster shells.

Introduction

One of the long-term objectives for studying steppe areas of Kazakhstan and Siberia is a search for relationships between the intensity of intercultural contacts and the development of societies in the Early Iron Age. The clearest manifestations of interregional ties in Western Siberia have been

found among the carriers of the Sargatka culture. According to N.P. Matveeva, by the second half of the 1st millennium BC, these people had formed diversified trade relations with the population of Central Asia (Bactria, Fergana, Semirechye, the interfluvium of the Syr Darya and Amu Darya), Iran, India, and the Black Sea region. A massive influx of imported goods into the Sargatka area occurred from the 4th century BC; from

the 3rd century BC, it became a factor determining the outlook of their material culture. Imported items constituted 80–90 % of the grave goods of burials belonging to the representatives of the hereditary aristocratic stratum, which was at the top of the military hierarchy (Matveeva, 2000: 68, 286–298).

In the territory of Kazakhstan, the trade relations of the local population with sedentary agricultural centers fostered the emergence of nobility. The upper class consisted of tribal chiefs, tribal aristocracy, and heads of families and clans. Just as in the entire space of the Scythian-Siberian world, burials of tribal and clan aristocracy in Kazakhstan differed from burials of the middle and lower strata by specific features of the funeral rite, as well as the structure and size of the mound. An important social marker is the presence, in the grave goods, of a large number of distinctive highly artistic items made of rare raw materials (Grach, 1975).

During the excavations at the Kyrykoba cemetery in East Kazakhstan, a disturbed adult burial was discovered. The structure and size of the stone mound, the burial practices, which included craniotomy, and grave goods with peculiar pieces of art make it possible to consider Kyrykoba as an elite necropolis of the highest nobility of the Saka society. The high social status of the buried person is also indicated by adornments found in the grave, which were made of rare and therefore prestigious organic material procured on the coasts of southern seas and distributed along the intracontinental trade routes to the north, to Kazakhstan, and further, to the steppe regions of Western Siberia.

General information about the site

The cemetery of Kyrykoba is located near the village of Akshatau, Ayaguzsky District, East Kazakhstan Region (Fig. 1). It was discovered in 2012 by the employees of the Chair of Archaeology and Ethnology at the Department of History of the Gumilyov Eurasian National University. In the summer of 2018, in the area of the necropolis, kurgan 7 was explored by the archaeological team from that university.

The burial site was a flattened stone-and-soil mound rounded in plan view, with a diameter of about 28 m and height of 1.7 m. One of the structural features of the mound was a crepidoma along the perimeter of the kurgan, made of vertically set stone slabs (maximum size of $0.3 \times 0.5 \times 0.10$ m). According to stratigraphic observations, the central part of the mound consisted of large blocks, while the peripheral part included smaller stones laid in several layers (Fig. 2, 1). The stratigraphic cross-section clearly reveals the robbers' entrance, which led from the top of the mound to the burial.



Fig. 1. Location of the Kyrykoba cemetery.

The grave-pit was round in shape and slightly exceeded 3 m in diameter. A structure of a rectangular stone box measuring $3.0 \times 1.3 \times 0.5$ m, oriented with its long sides along west–east, was found at a depth of 2 m. The ceiling, which was made of long flat slabs and laid across the box, has survived only partially (Fig. 2, 2, 3). The anatomical integrity of the skeleton had been violated. Anthropological analysis of the remains has shown that the skeleton belonged to a mature woman. A hole remaining from craniotomy was located in the right lower part of the occipital bone (Fig. 2, 4).

The samples of bones were analyzed in the laboratory of the Center for Climate, the Environment, and Chronology ($^{14}\text{CHRONO}$ Centre) at Queen's University Belfast. On the basis of AMS dating, the radiocarbon age of the site was established as 2579 ± 41 years. The calibrated indicators cover the calendar time interval of 273 years (821–548 BC).

Description of the grave goods and discussion

The collection of finds includes about two hundred artifacts, mainly personal ornaments (simple beads, gold seed beads, belt clips, plaques, and cone-shaped caps) (Fig. 3, 4; 5, 1, 3–7). The scope of this article does not allow for a detailed description of the entire collection; only a miniature bimetallic hairpin and adornments made of seashells are described. In our opinion, these artifacts expand our ideas about the socially prestigious artistic ornaments of the cattle-breeders from Kazakhstan, and serve as evidence of their contacts with the population of the remote coasts of the Indian Ocean and the Persian Gulf.

The Bimetallic hairpin is made of iron; its ellipsoidal head is covered with gold foil. The total length of the item is 2.4 cm. A small part of the hairpin's needle has



Fig. 2. Kurgan 7 at the Kyrykoba cemetery.

1 – mound; 2 – filling of the grave-pit; 3 – stone box with traces of robbery; 4 – cranium with traces of craniotomy.

survived. The fracture area was flattened and corroded, thus making it impossible to establish the reason for the damage (the needle might have been pressed down by stones during the collapse of the ceiling). The diameter of the head is 0.8 cm vertically and 0.5 cm horizontally (Fig. 5, 2).

Iron pins decorated with gold have often been discovered in female burials at Scythian sites in Tuva (Savinov, 2002: 123–124). The head of the pin from kurgan 7 was decorated with embossed low-relief in ornamental style, typical of stamped relief

representations and for gold appliques on flat surfaces. A full image of an animal with a twisted body was placed in a small area. Notably, this artistically sophisticated representation was made on the spherical surface. The figure, with quite carefully elaborated details, occupied the entire space, thanks to which the composition looks complete and resembles well-known bronze plaques in the form of curled up predators. The distinctiveness of the Kyrykoba find is in a frontal, but not horizontal, view of the head in the figure on the pin. According to S.I. Rudenko, such an artistic technique was not a

“decisive point”, since ancient artisans “knew how to fit animal figures into any geometric shape” (1953: 315).

Judging by individual elements of the animal’s body, this was an ungulate animal (elk, deer, ram?), with an unusually curved antler having a leaf-shaped end. However, its tail, rendered as three separate strands, is more consistent with a horse. The combination of features belonging to different animals into a single image makes it possible to consider this image as an example of zoomorphic transformation. According to A.R. Kantorovich, such a stylistic technique was most often used for depicting ungulates in the 7th–4th centuries BC (2002: 118). However, according to K.A. Akishev, realistic images of deer, goat, and argali (ancient tribal Saka totems-ancestors) had already become a relic of the past in the 5th–4th centuries BC. In the Issyk time, their symbol—deer-antlers and goat-horns, or horses’ heads with imitation of goat-horns—were more commonly represented (Akishev, 1978: 56–57, pl. 9). Masked horses, such as those found at the Berel cemetery, are also well known (Samashev, 2011: 57, 61, 65, 170, fig. 38–40, 109, 405). D.V. Cheremisin observed that masking sacrificial horses with horns was accompanied by reproducing the plot of their torment, which corresponded to the context of the funeral rite among the Indo-Iranian peoples (2005: 138).

Expressive depictions of animals with bodies twisted 180° were common in the Scythian-Siberian art of the eastern part of the steppe belt. The main



Fig. 3. Golden beads from the burial of kurgan 7.



Fig. 4. Necklace and beads from the burial of kurgan 7.

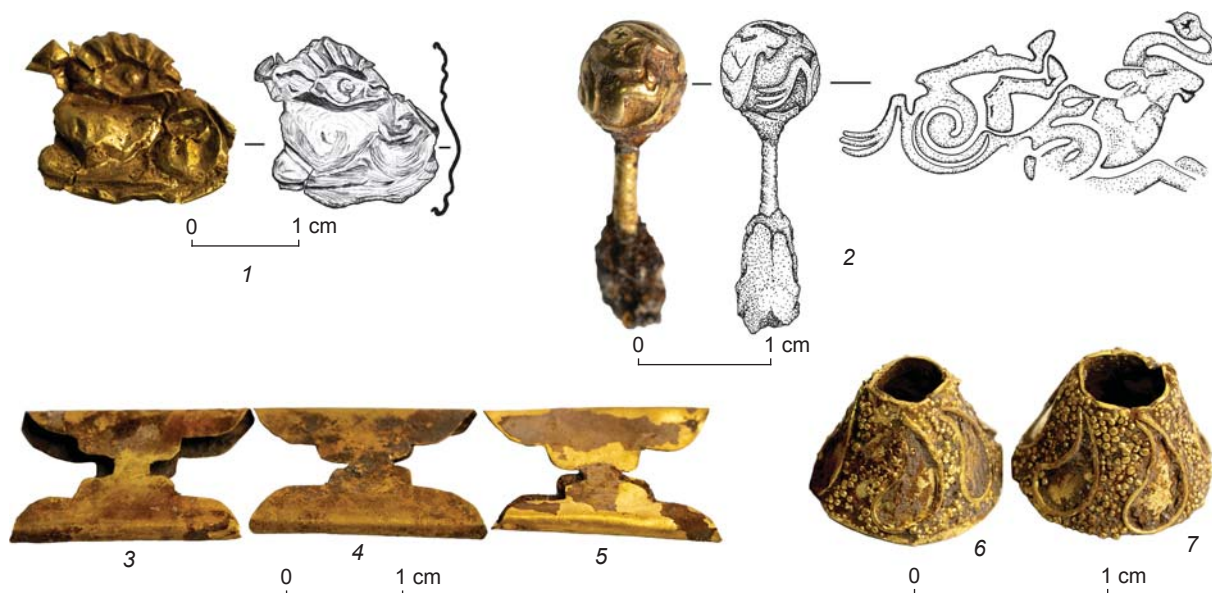


Fig. 5. Grave goods from the burial of kurgan 7.

1 – fragment of gold foil with embossing; 2 – bimetallic pin with image of an animal; 3–5 – onlays on a waist belt; 6, 7 – conical caps.

characters were hoofed and predatory animals. Individual figures and compositions representing the scenes of torment appear on the pieces of dermatoglyphics, weaponry, carpet products, horn and metal adornments of horse-harness, and in rock art. In Kazakhstan, similar figures and compositions have been found on the items of grave goods at the Issyk and Berel necropolises, and in rock representations of the goat tormented by wolves, with a modified rear part of the goat's body (Akishev, 1978: Pl. 25; Samashev, 2011: Fig. 30, 36, 403; Maryashev, 1984: 46). This artistic device was also common in the Altai foothills and mountains, Minusinsk Depression, Tuva and Xinjiang, and was typical of the Scythian culture (Mogilnikov, 1997: Fig. 41, 5; Borodovsky, Telegin, 2007: Fig. 2, 34, 10, 11; Korolkova, 2006: Pl. 16, 13, 20; 18, 1; Bogdanov, 2006: Pl. XXXIX, 1, 9; Moor, 2014: Fig. 6, 6a; Devlet E.G., Devlet M.A., 2005: Fig. 100, 1; Sovetova, 2005: Pl. 9, 7–9; Rusakova, 2003: 96, fig. 1, 1, 3; Grach, 1980: 178, fig. 40; Mandelshtam, 1992: Pl. 78, 16; Rudenko, 1953: Fig. 157–161, 181–184, pl. CXI; Barkova, Pankova, 2005: Fig. 2, 1, 2, 5, 6, 12; Molodin, 2000: 117–118; Polosmak, 2001: Fig. 151; Barkova, 1984: Fig. 1, 6, b; Kubarev, 1998; 1999: Pl. IV, 13; Cheremisin, 1990: 164).

In Scythian art, a kind of artistic “template”, which was a part of the theme of “good torment”, was created using the stylistic device of turning the back of the body in relation to the front. This device has been discussed in scholarly literature many times. Rudenko interpreted the graphic style of the Pazyryk tattoos, representing an animal with hind limbs thrown behind its back, as a device for depicting a sacrifice and regarded it as “a very ancient Sumerian style” (1953: 315). In a detailed interpretation, this technique illustrates ancient sacrifice. In ethnographic descriptions, such posture (with the broken spine) was typical of animals at the time of death (Devlet E.G., Devlet M.A., 2005: 108; Rusakova, 2003: 98; Sovetova, 2005: 43, 45). In the context of “good torment”, the fight between an ungulate and predator was considered as a version of presenting the basic mythologeme, which reflected the cosmological ideas of the Iranian-speaking population of Eurasia (Kuzmina, 1976; Cheremisin, 2008b).

Another group of interpretations of the “pictorial text”, which we can call “ethological”, is based on a pragmatic approach to explaining the artistic features of the Scythian animal style. According to the warfare-and-hunting hypothesis proposed by V.A. Korenyako, the emergence of “expressive deformations”, including “torsion” and “twisting” of animal's body, was associated with observations of its habits (2002: 146, 169–175). Following the hypothesis of Korenyako, Z.S. Samashev (2011: 167) clarified that the motive of “twisting” the body reflected the experience of watching the state of a wounded animal. He also suggested that expressive

deformations made it possible to show moments of animal's natural behavior in its native habitat (Borodovsky, Telegin, 2007: 55). In this case, the deformity rendered the volume of the animal's body and helped the artisan to represent it from different angles (Umansky, Shamshin, Shulga, 2005: 65).

The “hunting” hypothesis is also consistent with the suggestion of S.S. Sorokin, who observed that hunters carried the game—animal carcasses and skins—on the withers of a riding horse, and in this way they demonstrated good luck and personal prowess. Later, the substitute images of animals killed during the hunt were placed on the covers of saddles and served as a kind of insignia (Sorokin, 1973: 182). Developing the thesis about the proximity of the compositions with scenes of torment and the items on which they were represented, E.S. Bogdanov observed that saddle decorations were semantically more connected with the rider than with his horse. In accordance with principles of sympathetic magic, images of specific animals and fantastic creatures could have been believed to enhance the speed and fighting qualities of a horse (Bogdanov, 2006: 44–45).

It follows from the above that the relief miniature on the head of a pin from the Saka kurgan 7 at Kyrykoba enriches the set of images that are extremely indicative of Scythian art, and also expands the range of items on which they were applied.

Personal ornaments made of raw materials that were exotic for the steppe belt of Asia are outstanding finds from the burial mound under discussion. These include two pendants in the form of an oval plate with holes drilled at the ends ($1.8 \times 1.5 \times 0.2\text{--}0.3$ cm in size) (Fig. 6, 1, 2), six pendants in the form of a curved tusk of an animal with holes drilled at the ends and in the middle part ($1.5\text{--}4.0$ cm long and up to 1 cm wide) (Fig. 6, 3–8), and twenty plaques in the form of similar but differently directed figurines of a predatory animal (minimum size of 0.4×0.4 cm; maximum size of 2.5×2.2 cm) (Fig. 7). According to the conclusion made by I.N. Kosenko from the Laboratory of Paleontology and Stratigraphy of the Mesozoic and Cenozoic at the Trofimuk Institute of Petroleum Geology and Geophysics SB RAS, all of these were made from cretaceous layers of subfossil (non-petrified) oyster shells.

The mollusks were small in size, so the signs that would make it possible to establish their species precisely were not available. The walls of bivalve shells, for example of the species *Ostrea edulis*, consist of several layers (Fig. 8, 1). The outer layer (*periostracum*) is composed of organic horn-like substance; the next layer (cretaceous) is composed of calcite and is followed by a layer similar in microstructure to the previous one. The last (inner) layer (mother-of-pearl) is formed by lamellar crystals, with a distinctive luster or matte appearance.

The cretaceous layer has a typical porous structure, which can be seen on the surface of the finds (Fig. 8, 2, 3). One tusk-shaped pendant retained a part of the inner mother-of-pearl layer of the shell (Fig. 8, 4). The microstructure of the cretaceous material is especially well seen on the inner side of the onlays of animal shapes (Fig. 8, 5).

Mollusk shells and adornments made thereof have often been discovered at archaeological sites in the steppe belt of Eurasia. From the mid-4th millennium BC, ornaments made of shells of river mollusks *Colletopterum* were a part of grave goods at the Neolithic and Chalcolithic sites in the Ob and Angara basins (Molodin, 2001: 22, 37). According to some scholars, the tradition of making personal ornaments of mollusk shells was brought to Western Siberia by the migrants from Central Asia or East Kazakhstan. In Siberia, shells of mollusks from local rivers were probably used as raw material (Kiryushin et al., 2011: 37, 44–45).

A variety of items, such as beads, pendants, plates with sophisticated outlines, and eye-shields, have been found in the Saka necropolises of the Eastern Pamir. According to B.A. Litvinsky, these items, which are not typical of Central Asia, might have been made of the Paleogene marine deposits. However, it is most likely that *Turbinella pyrum* shells were specially brought to this region from the sea coast of India: here, they have been discovered in megalithic structures (Litvinsky, 1972: 72, 141, 142, pl. 25, 26, 47). The system of trade relations did not change in the Xiongnu-Sarmatian



Fig. 6. Pendants from cretaceous layers of oyster shells.
1, 2 – flat; 3–8 – in the form of animal tusk.

Period. The *Turbinella pyrum* shells continued to arrive from India to Kazakhstan and steppe regions of Western Siberia (Mershchiev, 1970: Fig. 7, 1, 2; Egorov, 1993: Fig. 2, 2).

The biomineral used for manufacturing the adornments mentioned above possesses such qualities as high density accompanied by low hardness. This made it possible to process the raw material using the simplest tools—a knife and small abrasives. Judging by the shape and size of pendants and onlays (Fig. 8, 4, 5), the cretaceous layer was quite thick, which is typical only of those mollusks from the southern seas. The properties of the material made it possible to produce very small onlays with careful treatment of all details

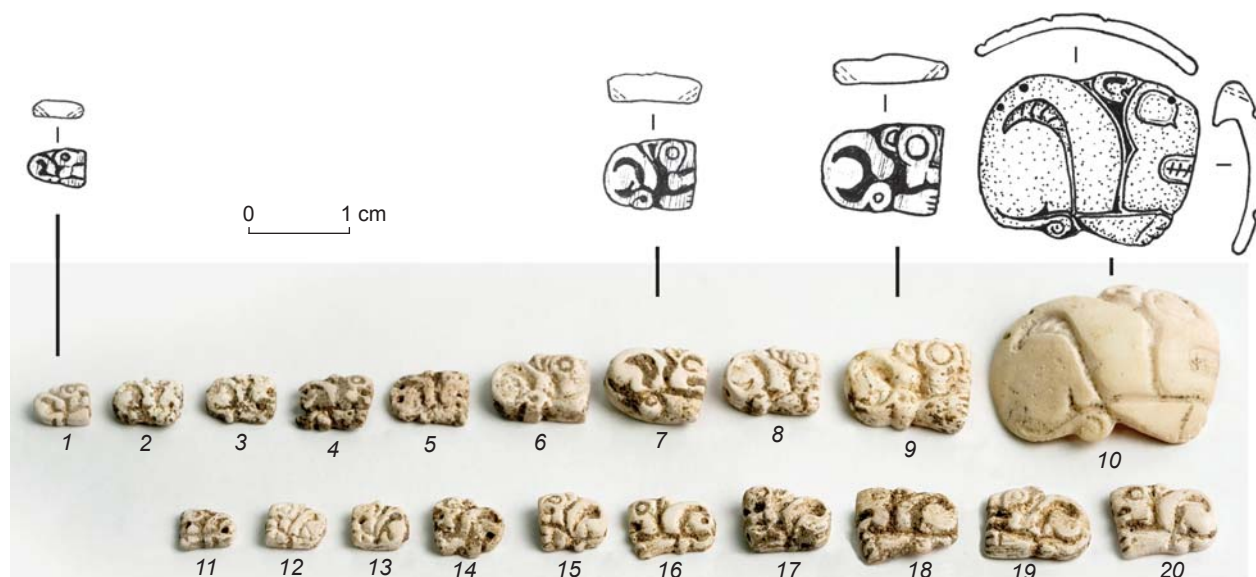


Fig. 7. Plaques in the form of animal figurines from cretaceous layer of oyster shells.

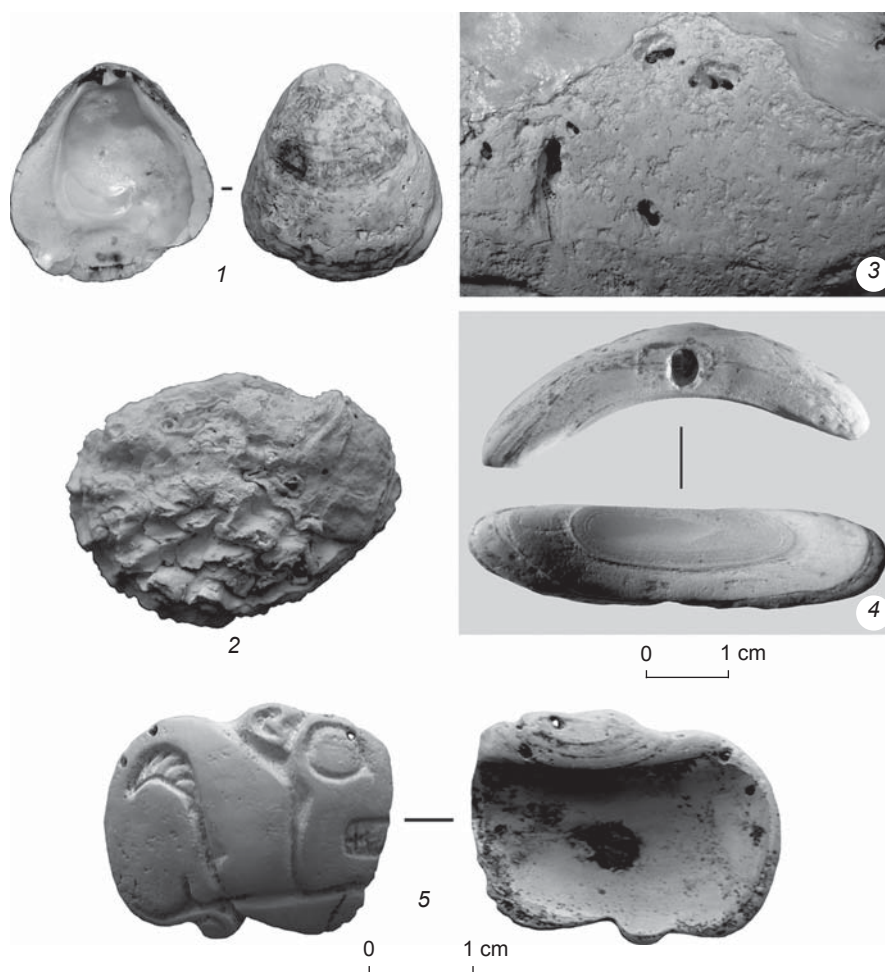


Fig. 8. Oyster shell (*Ostrea edulis*).

1 – oyster shell; 2, 3 – cretaceous layer; 4 – pendant in the form of animal tusk; 5 – plaque in the form of animal figure.

while applying techniques used in carving bone, horn, and wood. A specific feature is the presence of traces of oblique drilling of holes on side faces, which was carried out in order to hide the system of fastening the onlays to the base (Fig. 8, 5). Traces of using such a technique have been observed on flat rectangular ornaments of turquoise and on beads of chrysoprase at Scythian burial grounds (Ak-Dag, Sausken-3, and Dogee Baary-2 in Tuva) and on jade items from the burial sites of the Staroaleiskoye culture of the 5th–4th centuries BC (Obskiye Plesy-2 cemetery) (Volkov et al., 2019: Fig. 1–4).

The images of animals are stylized, so it is impossible to establish their species reliably. A rounded eye, oval ear, and open mouth with pointed teeth are emphasized. The position of the tail corresponds to the posture of the “resting animal”. According to Y.B. Polidovich, noteworthy is the location of the tail below, as if protecting the lying animal. Bronze plaques from the Aral Sea region show a similar stylistic feature (Polidovich, 2002: 187, fig. 2, 4). An independent semantic reading could have had a linear arrangement of plaques organized into two

oppositely oriented groups, following the principle of proportional reduction of figures along with a pictorial posture of the “resting animal.”

Plaques depicting animals from the Saka kurgan at Kyrykoba are unique, but they are not the only items made from cretaceous layers of subfossil shells. A “bead” in the form of a “cat predator” made “of white soft stone” was found in grave 6 at the Gilevo-10 cemetery of the Early Scythian period in the Altai, along with beads of various shapes (about 60 items) (Shulga, 2016: 29, fig. 10, 4 a–e; 47, 5 a–e).

The technique for making pendants in the form of animal tusks is not difficult, especially if their shape corresponds to geometric outlines of shells (see Fig. 6; 8, 4). Wild boars’ tusks were one of the most common ornaments in the Early Iron Age. Scythian kurgans contain large sets of natural boar tusks, some of which were framed with gold leaf ornamented in relief (Rudenko, 1960: 73–75, pl. XLIX, 5–8; Gryaznov, 1980). They were used as decoration for chest straps of stallions and as double clips. Such tusks performed an

aesthetic function and possibly served as amulets and indicators of a certain social status (Bokovenko, 2017: 23–24, fig. 13, 4; 14, 10–11). M.P. Zavitukhina noted that the tradition of decorating horse-harness with boar tusks became widespread in the Achaemenid period in Iran; it was also typical of the early nomads of the Altai. In this case, both natural boar tusks and their imitations made of wood, bronze, horn, or gold were used (Zavitukhina, 1961: 103). Imitations made of wood were especially numerous. According to Cheremisin, at individual sites, up to several hundred such imitations have been discovered. For example, at Tuekta I, over 370 wooden replicas of tusks in the sets of eight horses were found. In ordinary Pazyryk burials at Yustyd XII, there were up to 50 wooden imitations in a set per one riding-horse (Cheremisin, 2008a: 28).

Personal ornaments with natural boar tusks were typical of the initial stage of the early nomadic period. Later, their imitations made of various raw materials emerged. Wooden pendants were painted white or light yellow in accordance with the appearance of real prototypes (Borodovsky, Cheremisin, 1989: 129–130). Obviously, imported mollusk shells should be included into the range of raw materials of which the imitations were made. They could have been more affordable than real boar tusks.

Conclusions

The data from radiocarbon analysis and the assemblage of items suggest the attribution of kurgan 7 at Kyrykoba to the Early Saka period. In terms of creation time, it is close to such sites as Arzhan-2, Shilikty, Taldy II, and Zhalauly. The female buried in the kurgan belonged to the elite of Saka society. We believe that in her social status, she was similar to those buried in the northwestern foothills of the Altai (kurgan 1 at the Bugry cemetery, kurgan 9 at the Lokot-4a cemetery) (Chugunov, 2014; Shulga, 2003).

The adornments discussed above clearly reflect the connection between the assemblages from East Kazakhstan and Western Siberia. This is manifested primarily by the unity of the artistic traditions, revealed by the similarity of images, compositions, and decorative motifs. At the same time, a series of items made of raw materials atypical of the steppe belt raises the issue of intracontinental trade and cultural transmission carried out in the N-S direction. Subfossil oyster shells with fairly thick cretaceous layers could only be procured on the coast of the Indian Ocean and the Persian Gulf. From the shores of the southern seas, they found their way to the workshops of Northern India and Khwarazm, where personal ornaments of precious metals and ornamental minerals were mass-produced for the nomadic populations of the Asian steppes.

In the Kazakh steppe, long-distance trade emerged as early as the Late Bronze Age. In the Early Iron Age, it became an important factor that ensured consolidation of power among the chiefdom rulers. The distribution of rare and exotic goods within the society allowed them to increase their prestige and influence on the subjects (Kradin, 2001: 138).

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References

- Akishev K.A. 1978**
Kurgan Issyk. Iskusstvo sakov Kazakhstana. Moscow: Iskusstvo.
- Barkova L.L. 1984**
Rezniye izobrazheniya zhyvotnykh na sarkofage iz 2-go Bashadarskogo kurgana. *ASGE*, iss. 25: 83–89.
- Barkova L.L., Pankova S.V. 2005**
Tattooed mummies from the large Pazyryk mounds: New findings. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 2: 48–59.
- Bogdanov E.S. 2006**
Obraz khishchnika v plasticheskom iskusstve kochevykh narodov Tsentralnoy Azii (skifo-sibirskaya khudozhestvennaya traditsiya). Novosibirsk: Izd. IAET SO RAN.
- Bokovenko N.A. 2017**
Formirovaniye konskogo snaryazheniya rannikh kochevnikov Tsentralnoy Azii. *Ylken Altai alemi*, No. 3 (4): 8–42.
- Borodovsky A.P., Cheremisin D.V. 1989**
K izucheniyu ukrasheniya iz kabanykh klykov i ikh imitatsiy (sotsialno-tekhnologicheskii aspekt). In *Skifo-sibirskiy mir. Problemy arkheologii skifo-sibirskogo mira (sotsialnaya struktura i obshchestvenniye otnosheniya)*, pt. II. Kemerovo: Kem. Gos. Univ., pp. 128–131.
- Borodovsky A.P., Telegin A.N. 2007**
Horn saddle ornaments dating to the Scythian period from the Ob plateau. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 2: 52–62.
- Cheremisin D.V. 1990**
Petroglify ustya r. Chui. In *Problemy izucheniya naskalnykh izobrazheniy v SSSR*. Moscow: Nauka, pp. 162–165.

Cheremisin D.V. 2005

On the semantics of the masked, horned horses from Pazyryk mounds. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 2: 129–140.

Cheremisin D.V. 2008a

Iskusstvo zverinogo stilya v pogrebalnykh kompleksakh ryadovogo naseleniya pazyrykskoy kultury: Semantika zverinykh obrazov v kontekste pogrebalnogo obryada. Novosibirsk: Izd. IAET SO RAN.

Cheremisin D.V. 2008b

K semantike obraza klyuvogolovogo oleny v pazyrykskom iskusstve. In *Tropoyu tysyacheletiy: K yubileyu M.A. Devlet*. Kemerovo: Kuzbassvuzizdat, pp. 99–105.

Chugunov K.V. 2014

Zakhoroneniye “zolotykh lyudey” v traditsii nomadov Yevrazii (noviye materialy i nekotorye aspekty issledovaniy). In *Dialog kultur Yevrazii v arkheologii Kazakhstana*. Astana: Syryarka, pp. 714–725.

Devlet E.G., Devlet M.A. 2005

Mify v kamne: Mir naskalnogo iskusstva Rossii. Moscow: Aletey.

Egorov Y.V. 1993

Novoye issledovaniye voina epokhi Velikogo pereseleniya narodov na Altaye. In *Kultura drevnikh narodov Yuzhnoy Sibiri*. Barnaul: Alt. Gos. Univ., pp. 77–80.

Grach A.D. 1975

Printsipy i metodika istoriko-arkheologicheskoy rekonstruktsii form sotsialnogo stroya po kurgannym materialam skifskogo vremeni Kazakhstana, Sibiri i Tsentralnoy Azii. In *Sotsialnaya istoriya narodov Azii*. Moscow: Nauka, pp. 158–182.

Grach A.D. 1980

Drevniye kochevniki v tsentre Azii. Moscow: Nauka.

Gryaznov M.P. 1980

Arzhan. Tsarskiy kurgan skifskogo vremeni. Leningrad: Nauka.

Kantorovich A.R. 2002

Klassifikatsiya i tipologiya elementov “zoomorfnykh prevrashcheniy” v zverinom stile stepnoy Skifii. In *Strukturno-semioticheskiye issledovaniya v arkheologii*, vol. 1. Donetsk: Don. Nats. Univ., pp. 77–130.

Kiryushin Y.F., Kiryushin K.Y., Shmidt A.V.,**Kuzmenkin D.V., Abdulganev M.T. 2011**

Mollusk shells from burials of Tuzovskiy Bugry-1 as indicators of ethno-cultural processes in Southern Siberia and Western Central Asia in the 3rd millennium BC. *Archaeology, Ethnology and Anthropology of Eurasia*, vol. 46 (2): 37–45.

Korenyako V.A. 2002

Proiskhozhdeniye skifo-sibirskogo zverinogo stilya (pragmaticheskkiye aspekty semiotiki). In *Strukturno-semioticheskiye issledovaniya v arkheologii*, vol. 1. Donetsk: Don. Nats. Univ., pp. 131–188.

Korolkova E.F. 2006

Zveriniy stil Yevrazii: Iskusstvo plemen Nizhnego i Yuzhnogo Povolzhya v skifskuyu epokhu (VII–IV vv. do n.e.). St. Petersburg: Peterburg. vostokovedeniye.

Kradin N.N. 2001

Politicheskaya antropologiya. Moscow: Ladomir.

Kubarev V.D. 1998

Portativniy “altar” iz Chichkeshi. In *Drevnosti Altaya*. Gorno-Altaysk: Izd. Gorno-Alt. Gos. Univ., pp. 55–58. (Izv. laboratorii arkheologii; No. 3).

Kubarev V.D. 1999

Pazyrykskiye syuzhety v petroglifakh Altaya. In *Itogi izucheniya skifskoy epokhi Altaya i sopredelnykh territoriy*. Barnaul: Izd. Alt. Gos. Univ., pp. 84–92.

Kuzmina E.E. 1976

Skifskoye iskusstvo kak otrazheniye mirovozzreniya odnoy iz grupp indoirantsev. In *Skifo-sibirskiy zveriniy stil v iskusstve narodov Yevrazii*. Moscow: Nauka, pp. 52–65.

Litvinsky B.A. 1972

Drevniye kochevniki “Kryshi mira”. Moscow: Nauka.

Mandelshtam A.M. 1992

Ranniye kochevniki skifskogo perioda na territorii Tuvy. In *Stepnaya poloska Aziatskoy chasti SSSR v skifo-sarmatskoye vremya*. Moscow: Nauka. (Arkheologiya SSSR; vol. 10).

Maryashev A.N. 1984

Pamyatniki epokhi bronzy i rannego zheleza v doline reki Koks. In *Skifo-sibirskiy mir (iskusstvo i ideologiya): Tezisy dokl. 2-y Arkheol. konf.* Kemerovo, pp. 45–46.

Matveeva N.P. 2000

Sotsialno-ekonomicheskkiye struktury naseleniya Zapadnoy Sibiri v rannem zheleznom veke (lesostepnaya i podtayechnaya zony). Novosibirsk: Nauka.

Mershchiev M.S. 1970

Poseleniye Kzyl-Kainar-Tobe I–IV vv. i zakhoroneniye na nem voina IV–V vv. In *Po sledam drevnikh kultur Kazakhstana*. Alma-Ata: Nauka KazSSR, pp. 79–92.

Mogilnikov V.A. 1997

Naseleniye Verkhnego Priobya v seredine – vtoroy polovine I tysyacheletiya do. n.e. Moscow: Pushch. nauch. tsentr RAN.

Molodin V.I. 2000

Kulturno-istoricheskaya kharakteristika pogrebalnogo kompleksa kurgana No. 3 pamyatnika Verkh-Kalzhin II. In *Fenomen altaiskikh mumi*. Novosibirsk: Izd. IAET SO RAN, pp. 86–119.

Molodin V.I. 2001

Pamyatnik Sopka-2 na reke Omi (kulturno-khronologicheskii analiz pogrebalnykh kompleksov epokhi neolita i rannego metalla), vol. 1. Novosibirsk: Izd. IAET SO RAN.

Moor N.N. 2014

Kopytniye v nekharakternykh dlya zverinogo stilya tagarskoy kultury pozakh (po materialam tagarskoy melkoy plastiki). In *Arkhaicheskoye i traditsionnoye iskusstvo: Problemy nauchnoy i khudozhestvennoy interpretatsii: Materialy Vseros. (s mezhdunarodnym uchastiyem) nauch. konf.* Novosibirsk: pp. 51–53.

Polidovich Y.B. 2002

Prirodnoye i mifologicheskoye v skifskikh izobrazheniyakh (na primere pozitsii khvosta khishchnikov). In *Strukturno-semioticheskiye issledovaniya v arkheologii*, vol. 1. Donetsk: Don. Nats. Univ., pp. 181–198.

Polosmak N.V. 2001

Vsadniki Ukoka. Novosibirsk: INFOLIO-press.

Rudenko S.I. 1953

Kultura naseleniya Gornogo Altaya v skifskoye vremya. Moscow, Leningrad: Izd. AN SSSR.

Rudenko S.I. 1960

Kultura naseleniya Tsentralnogo Altaya v skifskoye vremya. Moscow, Leningrad: AN SSSR.

Rusakova I.D. 2003

K voprosu o mifologicheskikh predstavleniyakh rannikh kochevnikov. In *Arkheologiya Yuzhnoy Sibiri: Sbornik nauch.*

tr., posvyash. 70-letiyu so dnya rozhdeniya A.I. Martynova.
Novosibirsk: Izd. IAET SO RAN, pp. 96–99.

Samashev Z.S. 2011

Berel. Almaty: Taims.

Savinov D.G. 2002

Ranniye kochevniki Verkhnego Yeniseya. Arkheologicheskiye kultury i kulturogenez. St. Petersburg: SPb. Gos. Univ.

Shulga P.I. 2003

Mogilnik skifskogo vremeni Lokot-4a. Barnaul: Izd. Alt. Gos. Univ.

Shulga P.I. 2016

Mogilnik ranneskifskogo vremeni Gilevo-10 v predgoryakh Altaya. Novosibirsk: Red.-izdat. tsentr Novosib. Gos. Univ.

Sorokin S.S. 1973

Bolshiye sedelniye podveski iz Pazyryka i Bashadara i ikh paralleli. *SGE*, iss. 36: 47–51.

Sovetova O.S. 2005

Petroglify tagarskoy epokhi na Yenisee (syuzhety i obrazy). Novosibirsk: Izd. IAET SO RAN.

Umansky A.P., Shamshin A.B., Shulga P.I. 2005

Mogilnik skifskogo vremeni Rogozikha-1 na levoberezhye Obi. Barnaul: Izd. Alt. Gos. Univ.

Volkov P.V., Mitko O.A., Gubar Y.S., Davydov R.V., Polovnikov I.S. 2019

Tekhnologicheskiy analiz ukrasheniy iz biryuzy (po materialam nakhodok iz mogilnika skifskogo vremeni Ak-Dag I v Tyve). *Vestnik Novosibirskogo gosudarstvennogo universiteta*. Ser.: Istoriya, filologiya, vol. 18. No. 7: Arkheologiya i etnografiya: 74–86.

Zavitukhina M.P. 1961

Mogilnik vremeni rannikh kochevnikov bliz g. Biyska. *ASGE*, iss. 3: 89–108.

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