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HOLOCENE SEAL IMAGERY IN THE LAKE BAIKAL REGION OF EASTERN SIBERIA*

For over 9000 years, seals were a major food source for many groups of foragers living in the Lake Baikal region of Eastern Siberia, as evidenced by the frequency of seal bones in the Holocene sites of that area. This article introduces new representations of seals and summarizes previously known seal depictions. Seal images were rather common in rock art and portable sculpture. Also, Neolithic and Bronze Age foragers used seal bones in manufacturing implements and ornaments and placed parts of seal carcasses in burials. From the Iron Age on, seals featured in pastoralist sacrificial rites, along with other animals.

Keywords: Lake Baikal, Eastern Siberia, seal, animal images, perception, Holocene.

Introduction

The Baikal seal (*Phoca sibirica* Gmelin) is the only pinniped species that inhabits freshwater Lake Baikal, which is situated over 1000 km from the nearest other populations of pinnipeds. This animal is unique in its archaeological history. It was one of major food

sources for Baikal foragers over more than 9000 years (calibrated). Abundant remains of seal recovered from Neolithic settlement sites (Goriunova, Ovodov, Novikov, 2007; Nomokonova, Losey, 2013; Weber et al., 1998) as well as results of stable isotope analysis of Middle Holocene human bones (Katzenberg et al., 2010; Weber et al., 2011) support this supposition. Not only the foragers inhabiting Lake Baikal coasts hunted seals, but also the pastoralists who migrated to this region in the Late Holocene and whose subsistence was mostly based on animal husbandry (Nomokonova et al., 2010). Evenki, Buryats, and Russians living at Baikal also practiced seal

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hunting in the recent past and especially from the 17th to the 20th century, when skins and fat of these animals were sold commercially (Zhambalova, 1984; Levin, 1897; Pastukhov, 1993; Nomokonova et al., 2013).

While being rather rare in rock art and portable sculpture, representation of seals are worthy of description. On the one hand, we use previously known representations of seal to illustrate past knowledge about this animal and its behavioral characteristics. On the other hand, we present new data obtained through zooarchaeological studies in the Baikal region over the recent decade, including that on the presence of seal bones and teeth not only at settlement sites, but also in burials of foragers, stone ritual structures built by pastoralists, and in caves. These images give some idea of how people perceived the seal during various stages of the Holocene.

Description of the materials

Representations of seals. In contrast with images of humans and ungulates (Okladnikov, 1966; Studzitskaya, 1987), representations of seal are rarely encountered among petroglyphs or portable art objects of the Lake Baikal region. Currently, six such occurrences are known: petroglyphs on Shishkino rocks, Malaia Ludarskaia Cave, Idan and Shamanka II cemeteries, Smorodovaia Pad' and Sagan-Zaba II habitation sites (Fig. 1). These sites are attributable to various periods from the Neolithic to

the Iron Age, but are mostly associated with the Middle Holocene. Dating of most images is problematic, as many seal figurines were discovered in chronologically mixed contexts and some of the collections are presently inaccessible for study. However, despite the small number of seal images, they provide interesting information concerning the worldview of the ancient populations inhabiting the Lake Baikal region.

Rock art representations of seal are known only at the Shishkino rock art panel located on the right bank of the Lena River, 225 km northeast of Irkutsk (Fig. 1, 2) (Vetrov, Melnikova, Svinin, 1990; Melnikova, 1992; Melnikova, Nikolaev, Demyanovich, 2012: 92–93, 99). These images, presumably attributable to the Bronze Age, were made by a combined technique (rubbing + polishing + scratching). The animals are shown in the vertical upright position with the head pointing up. The figures are up to 60 cm high and up to 20 cm wide. A spindle-shaped body, small narrow muzzle, eyes, mouth, and flippers are rendered in detail, though in a stylized manner. The ancient artist depicted the seals as showing certain degree of curiosity, possibly when they looked out of the water (Fig. 2, 3). These images are remarkable not only by the subject or style, but also by their location. The Shishkino rock art site is located about 130 km northwest of Lake Baikal, far from where the seals live. Representations of seal are absent in the Baikal or Angara petroglyphs (Okladnikov, 1966, 1974).

A seal is depicted on a phallus-shaped pebble 28 cm long (Fig. 2, 6). The pebble was discovered near the entrance to Malaia Ludarskaia Cave located in northern Baikal, 480 km northeast of Irkutsk (Fig. 1, 1). The pebble was recovered from a Neolithic–Early Iron Age mixed layer in association with stone arrowheads, flakes, and potsherds bearing cord and net impressions (Khlobystin, 1964). The whole figure of seal (4.5 cm long) rendered in profile is carved on the wide end of the pebble with the head oriented to the narrow end (glans phallus). The eyes, whiskers, and flippers are thoroughly depicted. The seal is shown in the pose of observation, when the animal lies on ice or stones and looks round (Fig. 2, 10, 14).

Two small seal figurines were found at the Idan cemetery and at the habitation site of Smorodovaia Pad'. The Idan burial ground is located on the Angara River shore, 39 km northwest of Irkutsk, and approximately 90 km from Lake Baikal (Fig. 1, 7). One of these figurines, 11.3 cm long, carved of bone or horn, was discovered 5 m from a Late Bronze Age burial excavated in 1956 (Rygdylon, Khoroshikh, 1958). The animal is rendered in a side view. The head with the long muzzle and the fore flippers are well depicted (Fig. 2, 2). The round eyes, mouth, and nose are shown. Judging by the leaning position of the head and the general pose of the seal, the animal was depicted sleeping or napping. This pose



Fig. 1. Map showing the location of the archaeological sites discussed in the article.

1 – Malaia Ludarskaia Cave; 2 – Shishkino rock art panel; 3 – Uliarba II, Khuzhir-Nuge VII, XII, and XIV, Sagan-Nuge III, Shrakshura I, Bazarnaia II; 4 – Tonta; 5 – Sagan-Zaba II; 6 – Shumilikha; 7 – Idan; 8 – Lokomotiv; 9 – Smorodovaia Pad'; 10 – Shamanka II.

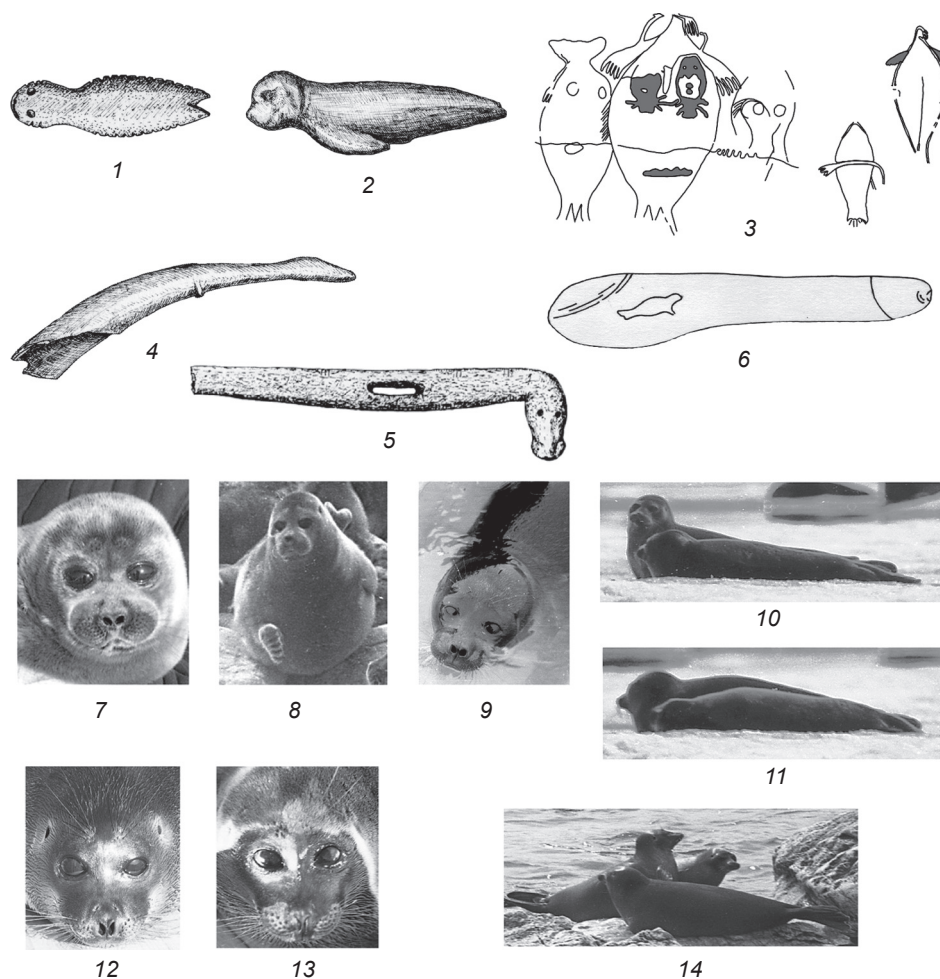


Fig. 2. Ancient representations of seal and the modern animals.

1 – Smorodovaia Pad'; 2 – Idan; 3 – Shishkino rock art panel; 4 – Sagan-Zaba II; 5 – Shamanka II; 6 – Malaia Ludarskaia Cave; 7–14 – photographs of seals from V.V. Pastukhov's archive of the 1960s–1980s.

is typical for a seal rookery, when animals lie on ice in spring or on stones in summer (Fig. 2, 11).

Another figurine was recovered from a mixed Neolithic/Bronze Age layer of trench 1 at Smorodovaia Pad' on the southwestern shore of Lake Baikal, 65 km southeast of Irkutsk (Fig. 1, 9) (Kushnareva, Khlopin, 1992). The black stone figurine (4.6 cm long) was made in schematic manner. The sides and the belly show incisions located obliquely to the main axis (Fig. 2, 1). Based on the general outlines and the position of the eyes, the animal is depicted in the back view (top view) in a stretched pose similar to the position of a swimming seal, when only its head and the upper part of the body are visible (Fig. 2, 9).

Two sculptural representations of seal heads were carved on the ends of handles. One of them was recovered from Neolithic grave 18 at the Shamanka II burial ground located at the southern extremity of Lake Baikal, 75 km southwest of Irkutsk (Fig. 1, 10). The artifact was found in the disturbed burial of a man 20–25 years of age, near

his pelvis bone (Bazaliiskii et al., 2006). The seal head (15 cm long) is perpendicular to the main axis of the handle. It is rendered in a realistic manner with round eyes and dilated nostrils (Fig. 2, 5, 7, 12, 13).

The second seal representation was found in Neolithic layer III of Sagan-Zaba II (excavated by A.P. Okladnikov in 1974) (Okladnikov, 1975; Goriunova, Novikov, 2012). The site is located on the western shore of Lake Baikal, 155 km east–northeast of Irkutsk (Fig. 1, 5). The handle of an antler spoon (9.4 cm long) was modeled as a stretched neck and a head of a seal made in relief (Fig. 2, 4). Small symmetrical protrusions separate the handle from the spoon's bowl. The seal is rendered in a schematic manner; its muzzle is directed forward, as if the seal were swimming (Fig. 2, 9).

Remains of seals in graves of foragers. In the Lake Baikal region, 11 burials (at five cemeteries) are known to contain seal teeth and bones as well as implements made from them (Table 1; Fig. 3, 4). Eight burials are attributable to the Early Neolithic: at the Lokomotiv

Table 1. Seal bones and teeth from graves of Baikal foragers

Cemetery, grave	Date BP*	Sex and age	Seal skeletal remains
Lokomotiv	8000–7000		
No. 30		2♂: 35–40 years	A half of a longitudinally split canine
No. 39		1♀: 20–25 years	Same
Shamanka II	8000–7000		
No. 18		1♂: 20–25 years	»
No. 23		1♂: 25–35 years, 1♀: 20+ years, 3(?): 20+ years	Two complete canines and a half of a longitudinally split canine
No. 46		1♂: 25–29 years	Left ulna, tibia, and fibula from the same individual
No. 71		1♂: 35–45 years	Phalanx
No. 78		1♂: 20–25 years, 3♀: 16–18, 25–35 and 35–50 years	Four halves of longitudinally split canines (two are from one and the same canine)
No. 83		1♂: 20–30 years, 1♀: 20–24 years	Five halves of longitudinally split canines, one complete canine, and a fragment
Shumilikha, No. 25	5300–4000	1♂: 35–50 years	Bacula of two individuals older than 7–10 years (one is modified into a chisel-like tool)
Khuzhir-Nuge XIV, No. 3	4700–4000	1(?): 20+ years	Right mandible and left canine of one individual
Uliarba II, No. 36	4700–4000	1♀: 20 years	Two right radii (one with cut marks) and left ulna from two seals (one adult, the other aged less than one year)

*Calibrated.

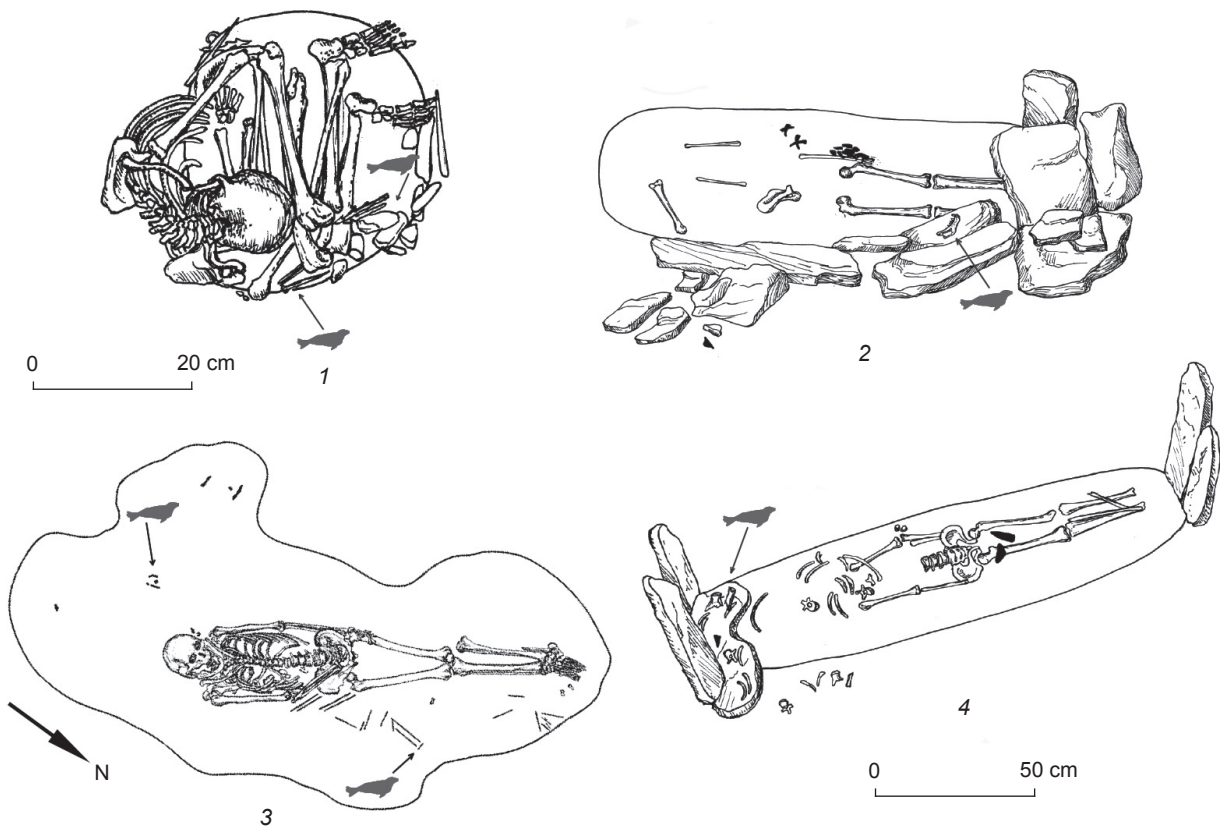


Fig. 3. Arrangement of seal teeth and bones in graves.

1 – Shumilikha, burial 25; 2 – Khuzhir-Nuge XIV, burial 3; 3 – Shamanka II, burial 46; 4 – Uliarba II, burial 36.

burial ground located in Irkutsk, 53 km northwest of Lake Baikal (Fig. 1, 8) and at Shamanka II mentioned above. A male (No. 30) and a female grave (No. 39) at Lokomotiv each contained a half of a longitudinally split seal canine, found among other artifacts clustered behind human crania. At Shamanka II, four burials (Nos. 18, 23, 78, and 83) contained similar finds (Fig. 4, 1–4, 8) and one burial (No. 71) contained a seal phalanx. Regrettably, these burials were disturbed or completely destroyed, so the original position of the seal remains in the graves is unclear. The single exception is burial No. 46, that of a male aged 25–29, containing an ulna and a fibula of a seal near the man's cranium, and a seal tibia to the right of the man's patella (Fig. 3, 3).

The other three burials belong to the Bronze Age. Two of them were partially destroyed in antiquity. They are located at the cemeteries of Khuzhir-Nuge XIV (burial 36) and Uliarba II (burial 3) in the bays of Maloe More (Little Sea) of Lake Baikal (Fig. 1, 3), 193 and 188 km northeast of Irkutsk, respectively (Goriunova et al., 2004; Novikov, Weber, Goriunova, 2010; Khuzhir-Nuge XIV..., 2008). Among the burial items found in Khuzhir-Nuge XIV grave 3 was a partial mandible of a seal with two canines, found on the slabs covering the grave, above the man's right femur (Fig. 3, 2) In burial 36 at Uliarba II, that of a woman aged about 20, two ulnae and a radius of two seals, adult and juvenile, were found in the southwestern part of the grave above the human skeleton (Fig. 3, 4). The radius of the adult seal bears butchering cut marks. The third locality is burial 25 at the Shumilikha burial ground located on the left bank of the Angara, 76 km northwest of Irkutsk and 136 km from Lake Baikal (Fig. 1, 6) (Bronzovyi vek..., 1981). A man aged 35–50 years was buried seated, in a crooked position, and faced the east (towards the river). Grave goods were lying near the right shoulder and the left knee and included two bacula of adult seals (Fig. 3, 1; 4, 11, 12). One of them has an end modified by a straight cut that forms the working edge of a chisel-like tool.

Artifacts made of seal teeth and bones. Several artifacts of this sort (Fig. 4) are known in the Lake Baikal region including 14 split canines from the Neolithic burial grounds of Lokomotiv and Shamanka II and the modified baculum from the Bronze Age burial at Shumilikha. One more artifact made from seal bone was found in Iron Age upper layer III (excavated in 2007) of Sagan-Zaba II (Nomokonova et al., 2010). It resembles a spoon and was cut out from the left scapula, with a hole for suspension drilled in the neck (Fig. 4, 10).

In Tonta Cave situated 160 km east–northeast of Irkutsk and 12 km from Baikal (Fig. 1, 4), a mixed layer attributable to the Neolithic through the recent past contained four seal bones (test pit 1 of 1989) (Goriunova,

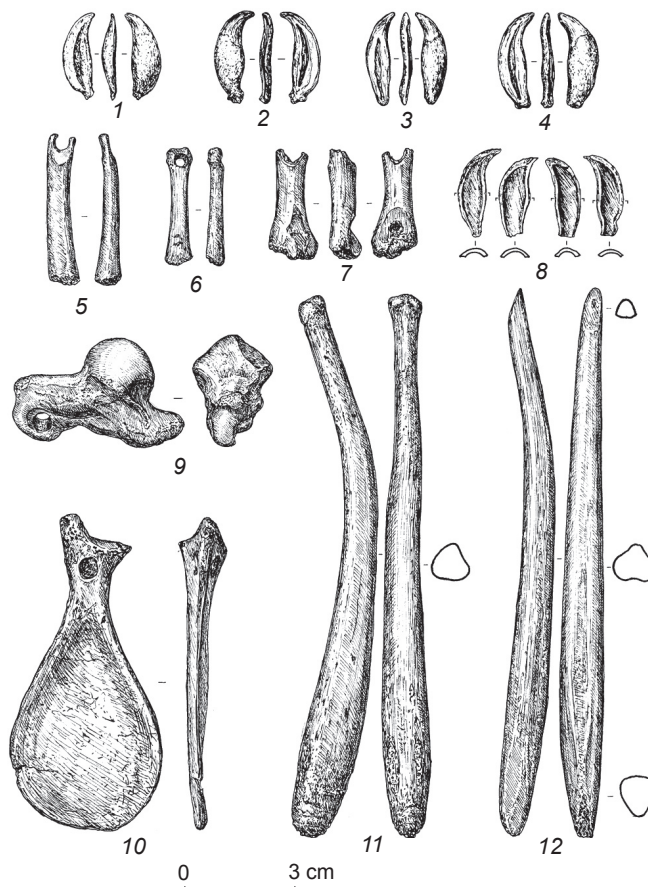


Fig. 4. Artifacts made from seal teeth and bones
1–4, 8 – Shamanka II; 5–7, 9 – Tonta; 10 – Sagan-Zaba II;
11, 12 – Shumilikha.

Cheremisin, 2000): the right astragal, the left fourth metatarsal, and two phalanges of adult individuals. All the bones have drilled holes, except the metatarsal on which drilling was not completed and only a small pit is visible (Fig. 4, 5–7, 9).

Seal bones in pastoralists' sacrificial stone features. At the shore of Maloe More of Lake Baikal (Fig. 1, 3), many stone structures, both flat and of the "conical" type are regarded as Iron Age and as recent sacrificial sites (Dashibalov, 1995; Kharinskii, 2002; Nomokonova, Goriunova, 2013a, b). Conical shaped stone feature No. 2 at Khuzhir-Nuge XII and flat structures Nos. 5 and 6 at Khuzhir-Nuge VII, Nos. 1 and 3 at Sagan-Nuge III, Nos. 1 and 2 at Shrakshura I, and No. 5 at Bazarnaia II all contained seal bones (Table 2), which is unusual for such stone features that normally contain only remains of domestic animals, which were the basis of pastoralist subsistence.

In conical shaped stone feature No. 2 at Khuzhir-Nuge XII (Nomokonova, 2002) dated to the 6th–7th centuries AD, an astragal and a phalanx of the hind limb belonging to an adult seal were found between the slabs and in the ash layer in the northeastern part of the structure.

Table 2. Animal bones and teeth from the animal sacrificed stone features of pastoralists

Site, stone feature	Date, years AD*	Size, orientation	Faunal remains
Khuzhir-Nuge XII, No. 2	540–650	2.6–2.1 m, SWW–NEE	Three animal bones, including an astragal and a phalanx of an adult seal; found among slabs and in the ash layer
Khuzhir-Nuge VII, No. 5	–	2.5 × 2.0 m, N–S	123 animal bones, including a cranial fragment and a radius of an adult seal; found under slabs
Khuzhir-Nuge VII, No. 6	900–1020	2.5 × 2.0 m, N–S	746 animal bones, including cranial fragments, ulna, and two tibiae of two seals; found under slabs in the ash layer
Sagan-Nuge III, No. 1	1290–1400	3.2 × 2.1 m, N–S	585 animal bones including a phalanx of an adult seal; found under slabs
Sagan-Nuge III, No. 3	–	3.4 × 2.9 m, NE–SW	1881 animal bones including a phalange of a seal; found under slabs
Shrakshura I, No. 1	–	3.7 × 2.5 m, NNE–SSW	42 animal bones, seven of which are those of seals (one adult and two aged less than one year: fragments of cranium, femur, tibia, fibula, phalanges); found under slabs
Shrakshura I, No. 2	1480–1650	4.4 × 3.5 m, N–S	59 animal bones including a mandible and an ulna of an adult seal; found in the hearth infill
Bazarnaia II, No. 5	1650–1950s	4.0–3.3 m, NNE–SSW	255 animal bones including fragments of a cranium, mandible, tibia, and a phalanx of an adult seal; found among slabs

*Calibrated.

In the flat oval and circular structures of the 10th–mid-20th centuries, seal bones are present in small quantities: from one to seven specimens (0.05–1.60 % of all fauna remains). The bones were found between the slabs, under them, and sometimes in the hearths and ash layers under the structures. Each structure normally contained bones of one seal. The exception is Khuzhir-Nuge VII structure No. 1 and Shrakshura I structure No. 1, where remains of two and three individuals, respectively, were found. Bones in the latter structure were those of an adult seal and of two individuals aged less than one year. Remains of adult animals prevail in other structures. The bones found in pastoralists' stone features normally belong to the head, extremities, and flippers. The fibula and phalange from Shrakshura I structure No. 1 display traces of firing and cut marks, respectively.

Discussion

Available archaeological data demonstrates that the seal played a certain role in the life of the populations inhabiting the Lake Baikal region throughout the Holocene. It was not only a source of nutrition, but also an animal that was worthy of being depicted and used in burial and sacrificial practices. Apparently, the artists had detailed knowledge of seal anatomy and behavior. The described figurines vary in style, details, and precision of rendition. Representations of seal from Malaia Ludarskaia Cave and Idan cemetery are most realistic. The animals

are shown in profile; the outlines of the body, head, eyes, and flippers are thoroughly rendered. The sculptural image of a seal head from burial 18 of Shamanka II is also realistic. The figurines from Smorodovaia Pad' and Sagan-Zaba II are more schematic, yet they show the main features of what possibly is a swimming seal. These representations are etiologically significant, because they evidence the detailed knowledge of the animal's poses in water, on ice, and on shore in calm condition, sleeping, or in alert observation of its surroundings (Fig. 2, 7–14).

In rock art, features of actual seals such as its spindle-shaped body, small and narrow muzzle, flippers, etc., combine with stylized features, possibly mythological. This especially concerns additional mask-like heads and eyes on the bodies of three seals depicted on the Shishkino rocks (Fig. 2, 3). Such stylization of animal images can primarily be observed in art of Siberian population of the Bronze Age and is considered as one of the characteristic features of art of that period (Studzitskaya, 1987).

Interestingly, some seal figurines were found at a considerable distance from Lake Baikal, the main habitat of the animal. This means that not only the people inhabiting the Baikal shore knew well this animal, but also the people who lived relatively far from the lake. Thus, the Neolithic and Bronze Age populations of the Angara region depicted seal realistically. At the same time, in the Shishkino rock art gallery, the most distant locality from Baikal, the representation of seal lost some of their real features. It is possible that the animals were depicted from memory or according to the existing notion of nature.

In some cases, artifacts made from seal teeth and bones as well as parts of carcasses were used in burial practices with some variations. Split seal canines were often put into graves together with other items close to the head of both men and women, as for example, at the Neolithic cemetery of Lokomotiv. Some parts of seal carcass (flippers, fore and hind limbs) were provided only to men of 25–45 years of age (burials 46 and 71 at Shamanka II), possibly as post-funeral meal.

The situation slightly changed in the Bronze Age. Seal bones were found not near the buried persons, but primarily on slabs covering the graves. One such grave contained the body of a woman aged about 20 (burial 36 at Uliarba II), suggesting that the seal was part of the funerary food for women too. At Shumilikha, the burial of a man aged 35–50 contained two bacula, possibly alluding to masculine qualities. The representation of seal on the pebble modified as a phallus from Malaia Ludarskaia Cave seems to have symbolized the same ideas. Interestingly, this seal representation is found on a penis-like artifact placed near the cave. According to traditional beliefs of the Buriaty, caves represent the habitat of the ancestors, while the entrance to the cave symbolizes the female genital organ. A visit to a cave was both a tribute to ancestors and a fertility rite (Batueva et al., 2002). If so, pendants made from flipper bones of seals might be amulets related to the ancestor cult.

In sum, sculptures and drawings of seals, as well as artifacts made from seal teeth and bones and found in graves, in caves, and at sacrificial stone feature sites, indicate the symbolic meaning of the seal, alluding to its qualities and a means of obtaining them by way of magic. Amulets and apotropaics, which were common in Siberian cultures, were destined to secure health, wealth, and good luck in hunting (Galdanova, 1987; Mazin, 1984; Hill, 2011). Seals might also be used as a sacrifice offered to local spirits and ancestors, as well as post-funeral meals.

Conclusions

Seal representations and seal bones in graves are relevant to the ideas people from the Lake Baikal shores had with regard to this animal, from the Early Neolithic to the recent past. The Neolithic and Bronze Age foragers depicted seals on rocks, carved from antler and stone, used seal teeth and bacula in manufacturing implements, and put some parts of carcasses and figurines into graves. These people had a good knowledge of the behavior of the seals, which is well illustrated by the representations they created. Late Holocene pastoralists continued the traditions of making artifacts from seal bones (for instance, at Sagan-Zaba II). However, they did not put parts of carcasses into graves, but used seal exclusively in the ritual-sacrificial practices along with remains of other animals.

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