

# THE MONGOLIAN DEER STONE-KHIRIGSUUR COMPLEX: DATING AND ORGANIZATION OF A LATE BRONZE AGE MENAGERIE

William W. Fitzhugh

Concentrated along the northern fringe of the Mongolian steppe south of the forested mountains of Tuva in southern Siberia, stone plinths covered with graceful carvings of deer having elongated snouts and swept-back antlers stand as the earliest monumental legacy of Mongolia's ancient past (Fig. 1–3). Often accompanied by stone burial mounds with fenced perimeters and satellite mounds, deer stones and khirigsuurs are interlinked components of a single Late Bronze Age mortuary ceremonial system dating to ca. 1200–700 BC. The deer stone-khirigsuur complex (DSKC) is the earliest appearance in Mongolia of a distinctive mortuary landscape tradition involving burials of humans with subsidiary horse and human burial features that continues until the decline of the Xiongnu ca. 1700 BP. The relationship of this complex, and especially its art, to the development and spread of the Scythian horizon (Rudenko 1970; Sementsov et al. 1997; Molodin 2000) may be investigated more specifically now that firm dates for deer stone art have been established as early as five centuries before the early Scythian Arzhan site (Griaznov 1980; Fitzhugh 2009). Perhaps most important, the deer stone-khirigsuur complex represents for the first time in Mongolia the emergence of a complex hierarchical society that established the foundation for the formation of later nomadic states and empires.

Archaeological interpretation of deer stones has had a long history among Soviet researchers beginning with A. P. Okladnikov (1954), followed by N. N. Dikov (1958), N. L. Chlenova (1962), V. V. Volkov (1981), Volkov and A. E. Novgorodova (1975), V. D. Kubarev (1979), Iu. C. Khudiakov (1987), D. G. Savinov (1994), T. Sanzhmiatav (1995), A. D. Tsybiktarov (1997; 1998; 2002; 2003) and others. E. Jacobson (1993; Jacobson-Tepfer 2001) summarizes this research tradition, which by the 1990s was stagnating due to lack of fresh archaeological data and the limitations of art historical methods. During the last decade, new attention has been given to excavation, dating, and contextual study of deer stone and khirigsuur sites. While it is still difficult to characterize the larger culture of the DSKC because of the continued scarcity of domestic sites, we now have a better understanding of its chronology, setting, relationships, ceremonial activities, functions, and social importance.

This paper is directed primarily at the human-animal relationships of the DSKC as seen both in deer stone art and animal associations with its burials and subsidiary features. More detailed analysis of archaeological finds of horse remains at DSKC sites and ethnographic data on contemporary Mongolian beliefs and practices regarding the curation and disposal of horse remains will be presented in a forthcoming paper.



Fig. 1. Deer stone at Tsagaan Uul Bogt Mountain, Khövsgöl aimag (Photo: W. Fitzhugh).



Fig. 2. Deer stone at Uushgyn Övör Deer Stone 4 (Photo: W. Fitzhugh).

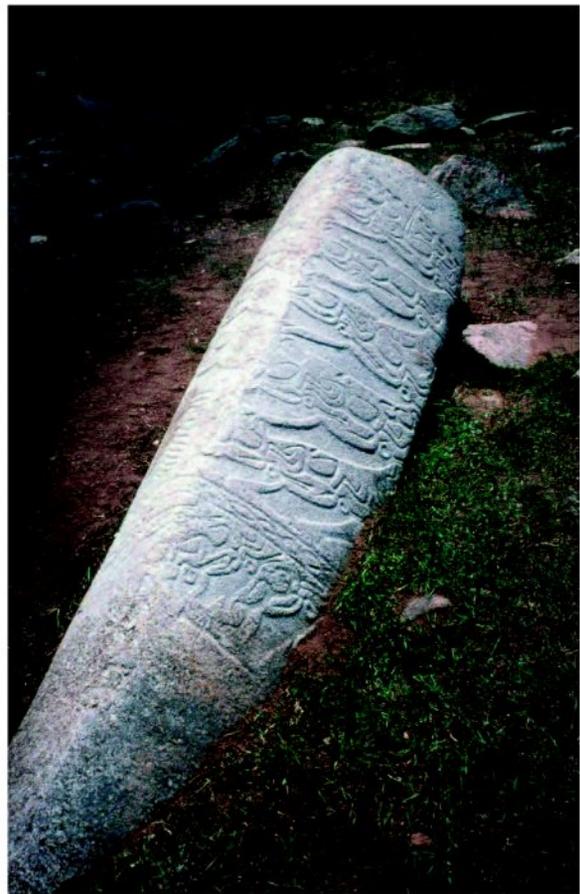


Fig. 3. Deer stone at site KYR 119, Khanui Valley (Photo: W. Fitzhugh).

## THE DEER STONE-KHIRIGSUUR COMPLEX

'Khirigsuur' refers to a specific Mongolian type of 'kurgan' whose central boulder mound is surrounded by a concentric arrangement of stone fences, satellite mounds, and hearth circles. Unlike kurgans of Western Asia with their lavish burial goods, khirigsuurs often yield poorly-preserved human remains and no grave goods, resulting in recent interpretations emphasizing their use for non-mortuary purposes (Jacobson 1993, 146). Deer stones have had a similarly ambiguous status. They were originally believed to be grave monuments, but absence of human remains and artefacts made this hypothesis tenuous. In recent years the assumption of deer stone and khirigsuur contemporaneity came into question as archaeologists considered a possible millennium-scale khirigsuur chronology and the idea that deer stones and khirigsuurs might belong to different cultures and periods. Because these sites are found primarily in the open Mongolian steppe and rarely in forest or desert regions, a nomadic herding economic system for its parent culture was presumed, but few archaeological data other than what could be gleaned from deer stone art have been available to verify this assumption. Hence for many years, deer stones and khirigsuurs drifted in archaeological void, undated manifestations of a complex culture without known qualities, affiliations, origins, or offspring.

Working within these constraints, V. V. Volkov, the leading Soviet deer stone researcher of the 1960–90s, spent years mapping deer stone distributions and documenting their images, but doing little excavation (Volkov 1981 [2002]). From this corpus he defined three geographic-stylistic types. The classic or Mongolian type depicting a belted warrior with stylized flying deer on his torso, which was dominant in north-central Mongolia and included the largest number of stones and greatest number of sites. Significantly, the distribution of the Mongolian type coincides with the most productive grazing land in Central Asia, where spring run-off

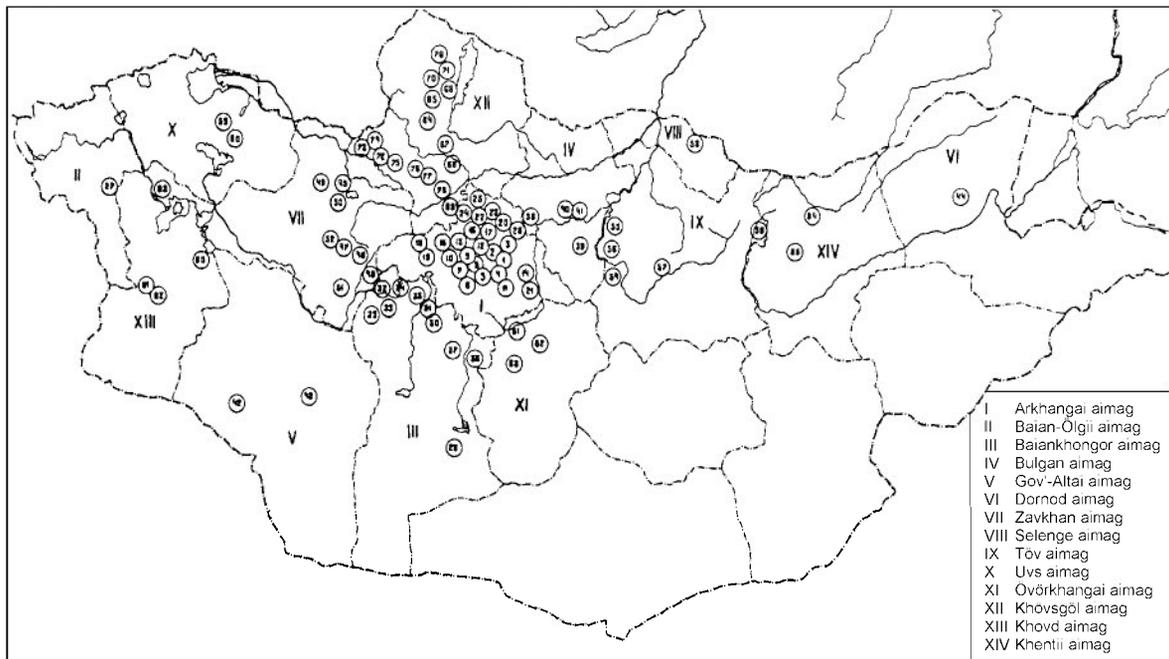


Fig. 4. Deer stone distribution in Mongolia based on Volkov's data.

and summer rainfall is high and open east–west valleys create corridors for rapid travel over a broad geographic area. Similar conditions are found in smaller areas of the Altai foothills and Transbaikalia, where the simpler, more stylized Gorno-Altai type and Saian-Tuva type deer stones are found, though in smaller numbers. The Gorno-Altai type illustrated a simpler rendition of a warrior whose tools often ‘floated’ on the torso and had few or no stylized ‘Mongolian’ deer. The Saian-Tuvan type was similar in overall simplicity but had fewer animal images, no Mongolian deer, and human markings were limited to belt, necklace, ears (rings), and face (double or triple slash marks).

Volkov accounted for 300 deer stones of all types in Mongolia, most concentrated in the north-central region (Fig. 4), with another 300 in surrounding areas of Tuva, Russian Altai, Kazakhstan, and China (Guo Wu 2009). V. D. Kubarev (1979), building on Volkov’s work, reported more than 500 specimens in Mongolia, 30 in Tuva, and 50 in the Russian Altai. Monuments classified as deer stones are also found as far west as the Ural, Crimea, and Georgia, where they are associated with the Scythian cultural horizon (600–300 BC), while a few have even been reported from the Elbe River (Volkov 1995, 326). In actual fact, the number of deer stones is several times higher than the Volkov and Kubarev estimates. Our recent work in Khövsgöl aimag has nearly doubled Volkov’s census for that region. It is likely that Mongolia alone has more than 2,000 extant deer stones, many of which are simple, small-scale versions or are partially or completely buried. The largest deer stones are found in secondary burial contexts, re-purposed in the “slab” or “square” burial culture that immediately follows the deer stone period, ca. 800–500 BC.

## ANATOMY AND ICONOGRAPHY

West Eurasian deer stones and Altai deer stones and khirigsuurs differ in style from classic deer stones and burial mounds of northern Mongolia and Tuva. In his most recent treatment, V. Volkov (1995) re-classified deer stones to take into account West Eurasian examples and similarities between his previous Altai and Saian types, resulting in three geographical-stylistic types that differ from his initial typology: (1) Eurasian deer stones (Fig. 5a) display minimal marks of the essential deer stone ‘code,’ limited to simple belt lines with hanging weapons, necklace lines, ‘faces’ consisting of parallel slashes, and circular rings at either side of the ‘head’ area of the stone. (2) Saian-Altai stones (Fig. 5b) have these essential markings as well as ‘floating’ more-or-less ‘realistic’ representations of pig, moose, elk, horse, ibex, goat, or other animals, usually shown with their legs extended rather than folded. (3) Mongolian deer stones (Fig. 6) have highly stylized images of a great antlered deer and a distinct anthropomorphic tableau which frequently wraps around the four sides of the monument and includes textured or ornamented belts; tools and weapons including knives, swords, axes, quivers, bows, whetstones, fire-strikers, and chariot rein hooks; more explicit earring hoops and beaded necklaces; and sometimes human faces (Fig. 7). For many years the typology of these tool forms was the only means for dating the monuments, ca. 500 BC. The torso area is covered with negative relief engravings of crouched or flying elk (the Asian maral, *Cervus elaphus sibiricus*), identified by the peaked withers and large swept-back antlers with diminutive legs folded beneath it, and a bird-like head with a large round eye and a bird-like beak whose bulbous end is slightly

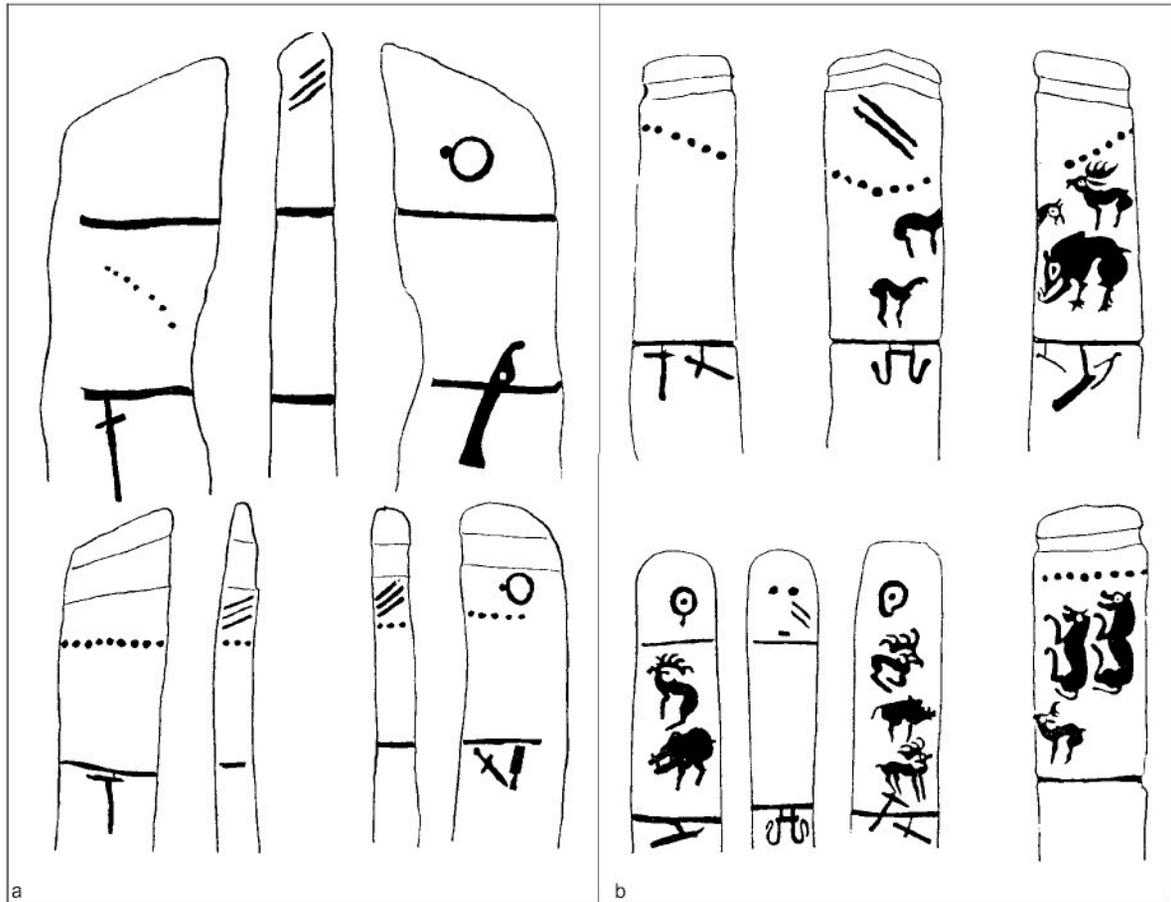


Fig. 5. Deer stone types proposed by Volkov (1995): a West Eurasian; b Saian-Altai. For Mongolian type, see Fig. 6.

open. Also present in the torso area are solar discs, pentagonal chevron-shaped ‘badges,’ and rarely peripheral images of a feline, goat, mountain sheep, gazelle, or horse. In addition to human anatomical organization, the head, torso, and waist panels have also been interpreted as representing, respectively, heaven, earth, and underworld. In fact, deer stones images can be interpreted in multiple ways and may have intentionally had dual or multiple meanings.

While the treatment of the belt shows attention to specific implement forms, the torso and head register ambiguity. Grooved earring hoops imply ears and are often associated with smaller ring-shaped grooves, making them appear like the sun and moon; faces are implied but are rarely shown; and the stylized deer icon shares deer and bird features. Often the torso panel is packed with deer images, while other miniature but identical deer motifs or other images are carved into any tiny blank spaces that exist. In many cases the stones are so packed with deer motifs that they suggest horror vacui, as though any unprotected space might prove vulnerable. Chevron motifs have been interpreted as military shields, shamanistic skeleton emblems, or badges of military rank. Rarely are deer stones of such great detail and artistic merit found outside Mongolia.

Since the earliest interpretations by N. N. Dikov (1958), A. E. Novgorodova (Volkov/Novgorodova 1975), and A. P. Okladnikov (1954), deer stones have been seen as stylized warriors. Following the discovery of tattooed bodies at Pazyryk (Rudenko 1970; Polos'mak 2000;

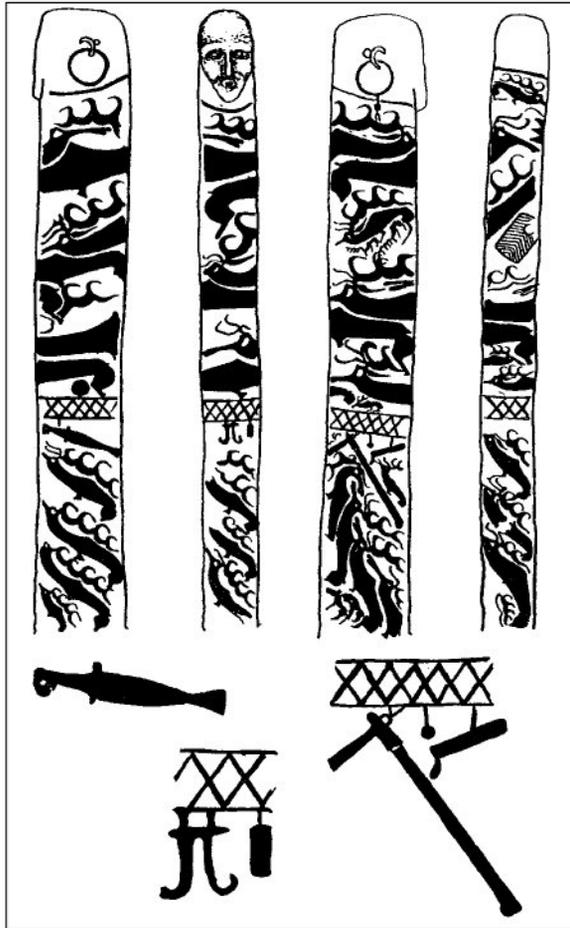


Fig. 6. Uushgyn Övör. Deer stone 14  
(after Volkov 2002, Fig. 79).

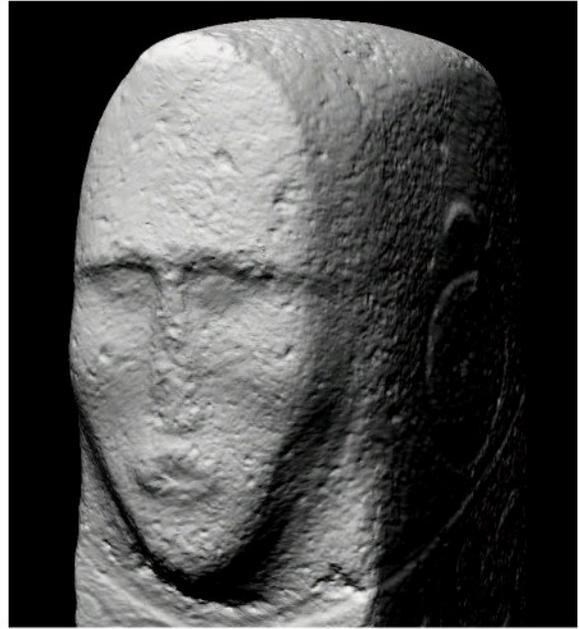


Fig. 7. Uushgyn Övör. Deer stone 14 detail,  
showing a singing or chanting, possibly shamanic,  
visage (MCI laser scan image, B.V. Karas  
and R. Beaubien).

Griaznov 1984) K. Jettmar (1994) proposed that the deer images might represent tattoos. Magail (2005) suggests clothing designs. I would go a step further and suggest the detailed rendering of belts, weapons, and tools reveal the artist's intent to carve deer stones as representations of specific individuals. The depictions seem to represent unique assemblages of tools, weapons, and body tattoos. One never finds deer stones with identical kinds, shapes, and sizes of implements, as would be the normal case in living individuals.

In like fashion, the images of deer also vary from stone to stone. While the shape of the deer icon is very rigidly standardized, their number, sizes, and placement varies in every case, as probably also occurred with tattoos on a person's body according to wealth, social status, prowess, or other attributes, including an artist's skills and the desires of the subject. It is likely that these tattoos protected the wearer from harm or injury by malevolent spirits in the same way as designs on the clothing of historic Ainu, Nivkh, and other East Asian groups. Patterns on the clothing of Jomon ceramic figurines may have had the same purpose. While serving as protective devices in life, the deer spirit may also have assisted the warrior's departed soul on its journey to heaven, with the help of shamanic ritual.

## DEER STONE AND KHIRIGSUUR SITES

Deer stones occur singly or in groups, and when in multiple-stone settings, as at sites like Uushgyn Övör and Ulaan Tolgoi, they are frequently aligned north–south with the deer stone’s ‘face’ oriented east. They are often associated with khirigsuur mounds containing human burials in shallow centrally placed pits or stone slab crypts. Shallow burial has resulted in poor preservation of human remains, and artefact recoveries are equally rare, usually consisting of small items like bronze buttons or belt buckles. In this regard Mongolian khirigsuur burials have little in common with the much more deeply buried Pazyryk frozen log tombs or the Mongolian slab burial culture.

In 2003 we began excavating deer stone sites in Khövsgöl aimag in northern Mongolia to seek dating materials to better understand deer stone chronology, ritual and context (Fitzhugh 2005; 2009). We soon discovered that central Mongolian deer stones are usually associated with sacrificial offerings of horses whose heads, cervical vertebrae, and hooves are buried in a tight package with the horse head facing east in shallow pits or stone features beneath small circular rock mounds (Fig. 8). At Ulaan Tolgoi and other deer stone sites in Khövsgöl aimag such east-facing horse head burials are found around the base of deer stones (Fig. 9). Outside the circle of horse head features were small oval hearths containing charcoal, ceramics, and calcined remains of caprids and larger mammals, which we believe are the remains of feasts, associated with deer stone dedication ceremonies. Presumably the horses were sacrificed as offerings to the deer stone personage by followers or relatives. Since 2002 we have dated more than twenty individual horse heads associated with deer stones, and almost all date (two-sigma) to ca. 1200–700 BC.

Khirigsuurs at Ulaan Tolgoi display some architectural features that are also found in deer stone settings (Fig. 10). Every central boulder khirigsuur mound and its stone-paved plaza are surrounded by a square or round fence of small stones (Allard/Erdenebaatar 2005; Frohlich/Bazarsad 2005). Along the east side of the fence one usually finds rows of satellite mounds 2–3 m in diameter. In the centre of these mounds a single horse head is buried in a shallow depression facing east, usually accompanied by cervical vertebrae and hooves, but without



Fig. 8. Southeast-facing horse skull, vertebrae, and hooves in Feature 3, Khuushuutiin Gol, Khövsgöl aimag.



Fig. 9. Excavated horse head sacrificial features surrounding DS4 at Ulaan Tolgoi, Khövsgöl aimag.

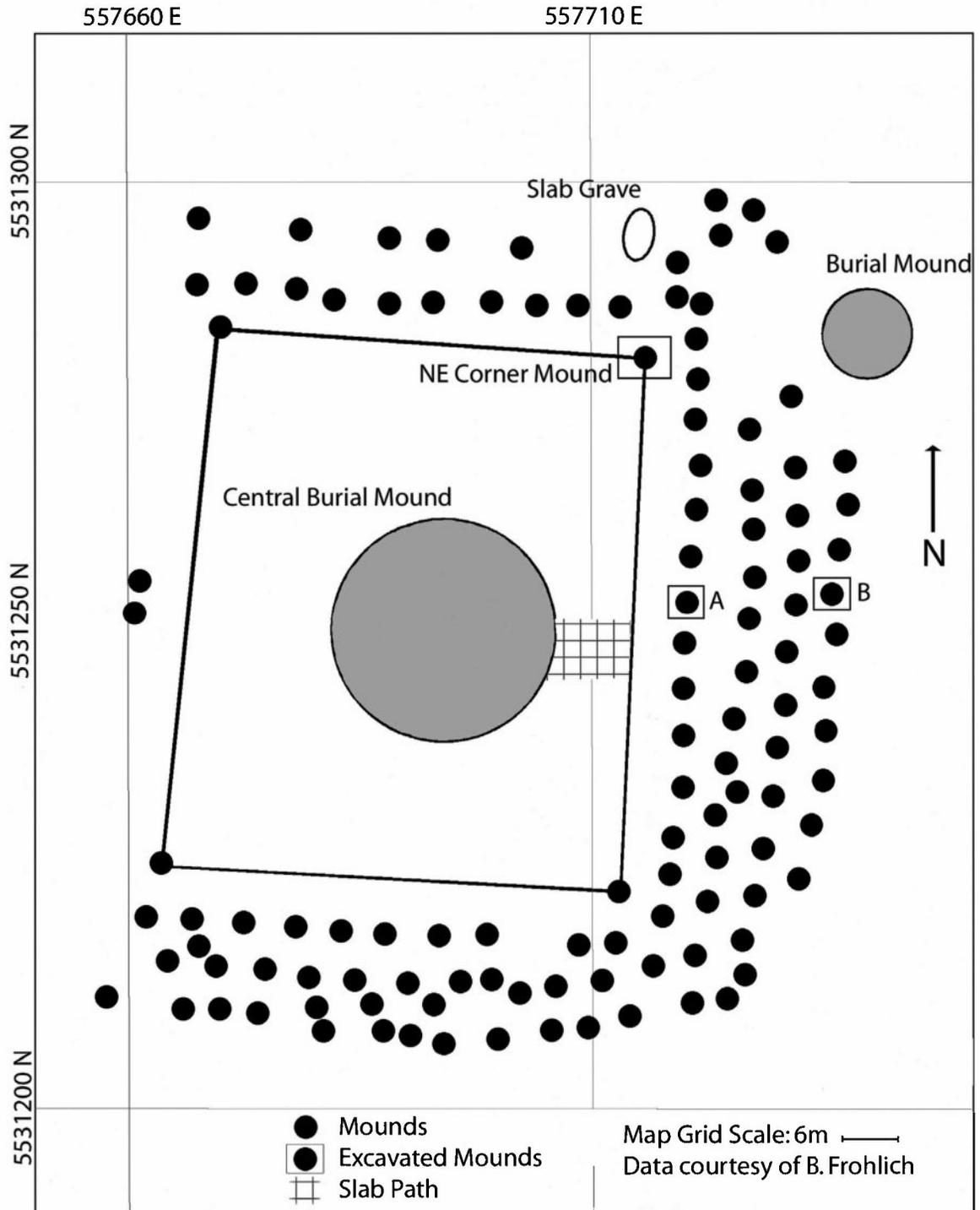


Fig. 10. Ulaan Tolgoi Khirigsuur 1 diagram (Courtesy B. Frohlich).

artefacts, exactly as in deer stone horse head burial features. Some larger khirigsuurs have scores or even hundreds of horse mounds; Urt Bulagyn, located in the heartland of deer stone and khiriguur site distribution (also the modern centre of Mongolian horse-rearing), 1,700 horse features are associated with a single huge mound (Fig. 11). Outside the horse mounds are



Fig. 11. Outer tier horse burial mound at Urt Bulagyn Khirigsuur mound in Khanui River Valley. View to north (Photo: W. Fitzhugh).

small feasting hearths with calcined bone and occasional ceramic fragments identical to those at deer stone sites.

A Smithsonian-Mongolian project led by B. Frohlich has investigated the archaeology of khirigsuur mounds in more detail, including their spatial distribution and architecture (Frohlich/Bazarsad 2005; see Frohlich's article in this volume). Mounds are distributed unevenly across the landscape and are most frequently clustered around east-facing slopes of hills, especially hills that stand out as isolated topographic features in the middle of valleys, as in the case of Ulaan Tolgoi in the Erkhel Nur Valley. The largest mounds (Frohlich Class A types) are found on valley floors, and

progressively smaller mounds are found along the eastern flanks of hillsides (Class B), or their upper slopes (Class C), becoming smaller and simpler with increased elevation. The hillside khirigsuurs (Class B and C) often have no satellite mound features, but they always have a central mound or pavement and a circular or square fence boundary. Frohlich's surveys and excavations reveal a consistent pattern in mound construction. Square and circular fences occur in nearly equal numbers (50/50%) over a given region. Excavation of nearly 25 mounds produced human remains in nearly all cases, generally as extended burials in shallow sub-mound pits or stone box crypts beneath the centres of the mounds, rarely with associated artefacts.

The structural similarity between deer stones and khirigsuurs can hardly be coincidental. Khirigsuurs have mounds over central human burials and are surrounded by horse head burials and feasting hearths, while deer stones are anthropomorphic stelae without human remains surrounded by identically constructed horse sacrifices and feasting hearths. Together the two constitute elements of a single ceremonial complex that most researchers have interpreted as honoring departed leaders, one in flesh and bone and the other represented symbolically by an anthropomorphic deer stone, with ceremonial sacrifices and feasting occurring at each location.

## THE DEER STONE MENAGERIE

Deer stones present the viewer with a remarkable menagerie of creatures seen through the eyes of Late Bronze Age residents of the Mongolian steppe. The dominant image is a high stylization of the Asian maral (red deer). A stylistically close representation of this animal (but lacking the bird's head and beak) was recovered as a headdress ornament found at the Arzhan site dating to ca. 700 BC (Zaitseva et al. 2004). Deer ceremonialism was also an important feature among the Pazyryk people, judging from an elaborate deer antler headdress found in one of its graves (Rudenko 1970). As E. Jacobson (1993) argued in her treatise "Deer Goddess of Ancient Siberia", this animal must



Fig. 12. A large Mongolian deer on a large rock panel north of the Shishged Gol, Khövsgöl aimag, northern Mongolia (Photo: W. Fitzhugh)

have held a special iconic place in the ritual and iconography of deer stone peoples. This icon was not limited to deer stones and personal objects; it is also seen in prominent positions on rock art panels ranging from the Altai Mountains to Central Mongolia (Jacobson 2002; Kortum et al. 2005). Mongolian deer are also seen, singly or with other animals, in rock art panels along the Shishged Gol in the Darkhad Valley of northern Mongolia (Fig. 12).

A stylistic feature of deer stone animal art is the iconic rendition of the master deer, head raised and mouth extended with antlers along its back in the posture of the rutting call. Its diminutive legs are tucked

below its body as though leaping or flying and the withers are always peaked. However, the shape of the head and eye is that of a bird with its long bill outstretched and open at its bulbous end. This creature appears to represent a spirit transformation figure – part elk, part bird – a form familiar to the world of Siberian and circumpolar shamans. The frequent illustration on deer stones of pentagonal panels with chevron- or skeletal-like patterns, occasionally also shown on knife sheaths and animal bodies, reinforces the idea of shamanistic skeletal symbolism and suggests shamanistic language may have been a component of deer stone art (Bayarsaikhan 2005). Shamanic ritual is perhaps most dramatically seen on Deer Stone 14 at Uushgyn Övör on which a human face is shown with its mouth pursed and round as though singing, blowing, or sucking, as is common in circumpolar shamanic ritual (Fig. 7). The combination of deer-bird transformation and the singing posture of the human face strongly evoke shamanistic performance and the calling forth of earth-sky spirit masters.



Fig. 13. Precursors of Scythian art styles found on Mongolian deer stones. a felines attacking a horse, Uushgyn Övör DS 15, Khövsgöl aimag (Volkov 1981 [2002], Fig. 78); b mountain goat with twisted body from Mykhar Askhat, Khovd aimag (Volkov 1981 [2002], Fig. 130.2).



Fig. 14. Coiled felines on Khyadag East deer stone, Khövsgöl aimag (Photo: W. Fitzhugh).

Other animals are also represented in deer stone art, but they are always shown in naturalistic rather than stylized form, and in less prominent positions on the stones. If deer stones represent specific human individuals, these minor departures from the deer stone graphic formula may be significant aspects of the individual histories of the persons represented. If so, they were illustrating totemic animals of special importance, incidents in the person's lives, or personal helping spirits. Among these animals are horse, boar, moose, mountain sheep, leopard, tiger, and, rarely, fish. In the core region of deer stone art in north-central Mongolia these animals seem incidental to the main tableau and are tucked into free spaces around the deer images, while on Altai stones they assume more central positions, often in the absence of the deer image completely. In some instances one sees a foreshadowing of Scythian style art: for instance, the confrontation between two feline predators and a horse (Fig. 13a) or the twisted body of a mountain goat (Fig. 13b).

In this regard it is also interesting that the deer and most other animals depicted are wild creatures, mostly of the forest, whereas deer stones are found only in the grassy steppe where deer stone-makers tended sheep, goat, horse, cattle, and camel, and certainly must also have hunted wild game. With the exception of the horse, domestic animals are not illustrated on deer stones. Deer stone art features wild animals – not owned or tended cattle – animals that still retained spiritual independence and to one degree or another were spiritually equivalent to humans, who also never appear as subjects in deer stone art. Probably it is for this reason that dogs also are not shown, despite their importance in Late Bronze Age herding and hunting economy.

One of the most important animal representations is the feline that, while rare, is found on deer stones throughout Mongolia. The cat is seen in the form of a tiger, represented with stripes, and the snow leopard, shown with spots. In ethnographic art of East Asia, the feline usually has a shamanistic association and is principally illustrated on shaman drums and robes among the Nivkh and other peoples around the mouth of the Amur River. In Scythian art, the feline is almost always depicted catching prey, and the coiled feline found on some Mongolian deer stones also anticipates Scythian style (Fig. 14). On Mongolian deer stones it is associated with the deer-bird spirit and is rarely seen as a predator, suggesting that in this context it serves as an image of personal empowerment or shamanic function rather than a hunter's helping spirit.

V. V. Volkov and others have pointed out that animals depicted in Mongolian-type deer stones have their legs tucked beneath as though leaping or flying, while Eurasian and Saian-Altai deer stones often depict animals with their legs extended, thus appearing as real animals,

striding or walking the earth. Generalizing, one can say that Mongolian-style deer stones have strong shamanic, cosmological, and spiritual connotation, whereas Saian-Altai and Eurasian deer stones and later Scythian art illustrate living creatures as they exist in the natural world.

Some have claimed that deer stones illustrate reindeer (Vitebsky 2005, 6), but I have yet to see a convincing reindeer among the corpus of deer stone art, even in rock art. When reindeer appear in Scythian art they appear in a secondary role of prey, and in one famous case a reindeer being attacked by a predator has a collar around its neck (Rudenko 1970, Fig. 110). Such 'tethering' is found also in the ethnographic art of the Yup'ik Eskimo of south-west Alaska together with images of nets (Fitzhugh/Kaplan 1982, Fig. 145). The Scythian image suggests an attack on a collared or tethered reindeer. If so, it provides an early depiction of domestication one thousand years before we have sound pictorial evidence of reindeer domestication in northern Eurasia.

### INTERSECTING WORLDS

In the absence of associated human burials, deer stones present a contradiction. The stones appear to represent warriors, chiefs, or heroic persons shown with their personal weapons, belts, and body tattoos. The presence of shamanic elements, celestial images, and iconic deer-bird master spirits shown, generally, in ascendant flight, suggests individuals whose souls are being sent off to the upper world in large organized public ceremonies involving shamanistic ritual and horse sacrifice. The deer-bird master spirit that protected these individuals in life, and which assisted their final journeys, are charismatic wild creatures of the northern forests that would have been found in the mountain forests lying along the fringe of LBA (Late Bronze Age) herding societies of the steppe lands. On the other hand the animals that most directly figure in khirigsuur burials and deer stone settings are not wild forest creatures; they are domesticated horses – the life-blood of herding economy and the engines of war that dominated the intensely competitive social life of Late Bronze Age.

It is tempting to view the juxtaposition of the elk-bird master spirit and the horse in LBA ceremonial ritual as either a clash or an intersection of colliding worlds – the unpredictable and uncontrollable world that was the domain of shamanistic ritual and ceremony, from which hunters and warriors protected themselves with protective deer spirit 'armor,' and the practical world of the herders who must deal with the day-to-day life of rearing and protecting animals, families, and communities. While animal spirits assisted the hunter or warrior, it was the act of offering a horse at a deer stone or khirigsuur ceremony that legitimized one's social position in Bronze Age society. Judging from the adherence to prescribed deer stone and khirigsuur ritual and ceremony, the social world of LBA Mongolia was rigorously hierarchical. The death of a chief called for sacrificing a man's most precious material possession.

One can imagine the scene at dawn on the morning of the event: followers and their families gathered at deer stones or khirigsuurs awaiting the rising sun to begin killing their prized horses, stripping them of meat and burying the head, neck, and hooves in precisely-positioned mounds on the east side of the khirigsuur, at locations that must have been precisely determined and regulated according to one's social rank and standing, followed by feasts of the sacrificed horse accompanied by other lesser animals at similarly-designated oval hearth sites.



Fig. 15. On Khot khirigsuur, Baian-Ölgii aimag, a rare khirigsuur in Western Mongolia having horse sacrifice mounds (Photo: W. Fitzhugh).

Khirigsuurs – one hundred times more numerous than deer stones – were the common form of social departure. By contrast, the creation and setting of deer stones was a rare event, almost certainly commemorating individuals of the highest social position. The fact that human bodies are not associated with deer stones and that deer stones do not have a one-to-one correlation with nearby khirigsuurs suggest that they may represent rites for individuals whose bodies were lost to their societies during war or other circumstances. Yet horse sacrifice was a fundamental instrument in both commemorations.

Horse ritual, so central to northern Mongolia LBA ceremonial life, seems to have been much less important in western Mongolia. While khirigsuurs and deer stones are present in Mongolian Altai, they occur in a different architectural form. West Mongolian khirigsuurs often have wide cobblestone fence walls and four cardinaly-oriented stone radial lines that connect the fence to the central mound like spokes of a wheel. Few west Mongolian khirigsuurs have external satellite mounds. In 2008 among hundreds of mounds inspected in the Baian-Ölgii Altai Mountain region of western Mongolia we found only one khirigsuur with horse burial satellite mounds, and this khirigsuur at On Khot near Khoton Nuur (Fig. 15) had features of a Central Mongolian khirigsuur rather than those typical of western Mongolia and the Altai. The rarity of horse mounds in western Mongolia may be a function of ecology as much as belief, as western Mongolia has less capacity for supporting large horse populations than central Mongolia, which receives more summer rainfall and has less severe winters.

While the master deer spirits were a standard cosmological icon, horse remains from khirigsuurs and deer stone settings tell a more human story. Sexing and ageing of horse remains excavated at our sites in the Khövsgöl aimag region reveal that sacrifices include a wide range of horse demographics. Although the samples are small, horse skulls range from young adults to old horses, with both sexes represented. Young horses are sometimes also sacrificed and are found in smaller mounds adjacent to larger mounds containing adult females, probably their mothers (Allard/Erdenebataar 2005). Samples excavated to date indicate that fewer horses in their prime were sacrificed than young or old animals. In some cases the remains are partial, with incomplete sets of hooves and vertebrae, or sometimes lacking hooves and vertebrae altogether. We also have instances in which a skull was buried without a mandible, or with only a part of a mandible. Usually the remains seem to have been buried fresh after having been defleshed and bundled tightly together. In one instance we have found horse remains that were heavily weathered when they were buried, suggesting these horse bones were re-cycled long after death – perhaps to keep up appearances when a live horse was not available or could not be spared, or because the dead horse had been highly regarded.

F. Allard (personal comment 2006) has researched the east-facing orientation of horse heads and the ritual and practices of horse-rearing by modern Mongolians. His results suggest surprising continuities with practices observed in the Late Bronze Age. It is common today to

find horse heads perched in trees and or between rocks at the tops of high hills and eminences. Herders say these practices show respect for the horse and speak of placing remains of favored horses on high hills to the east of their camps.

## DEER STONES AND THE WESTERN SCYTHIAN TRADITION

Current data suggest deer stone art originated in north-central Mongolia around 3,300–3,500 years ago from an earlier tradition in Karasuk-related cultures that has not been preserved or discovered archaeologically. Earlier traditions of human-figure stelae may present in the western steppe pit-grave cultures dating to the 2nd–1st millennia BC (Chizhevskii 2009), but the direct antecedents of Mongolian deer stones remains unknown. Deer stone art and *khirigsuur* mound burials appears suddenly around 3200 BP and flourished for several hundred years in northern Mongolia, neighbouring Tuva, and the Altai regions adjacent to western Mongolia. To date there is no stylistic or chronological evidence suggesting a developmental sequence for either the simpler Saian-Altai or the classic Mongolian deer stone types. Given this rapid development it seems likely that deer stones and their art were transferred from an earlier medium, like wood, as suggested by K. Jettmar (1994), concurrent with introduction of metal tools. Although the Saian-Altai stones are numerically more common in Tuva and the Altai than the classic form, both frequently appear at the same sites and probably date to the same time. In Khövsgöl, some Saian-Altai stones are among the earliest dated deer stones, ca. 1300 BC, and at one site we recently excavated in Khövsgöl – Khyadag East – both types are associated with copper slag.

Unlike Khövsgöl, which now has numerous dated deer stones at sites that include Saian-Altai and Eurasian types, no deer stones have been directly dated in western Mongolia (where deer stone ritual does not include horse sacrifice), or other Tuva or Altai regions. In the latter areas, classic deer stones generally lack the artistic merit of central Mongolian stones, and they display a looser approach to classic deer stone style, as though the rigorous linguistic and organizational code that controlled style in central Mongolia relaxed, de-emphasizing the iconic deer and elaborate detailing of warrior belts and weapons. While the core elements (circle-earrings, slashes for the face, and necklace lines or pits) continue, images of animals on the main body of deer stone art begin to look more like the art found at petroglyphic sites occurring in these highland regions (Jacobson 1998; 2002; Jacobson et al. 2001; Kortum et al. 2005). Floating and free-standing images of animals replace the master deer spirit image, and weapons are shown unsheathed and ‘in action’ rather than sheathed and belted. *Khirigsuurs* also change, becoming more architecturally diverse, often being made in the form of four- or eight-spoked ‘chariot wheels’ (Savinov 1994; Kubarev 1979).

Although the date of the Saian-Altai deer stones has not yet been determined, radiocarbon dates from 2008 excavations at spoked and un-spoked *khirigsuurs* in the Khoton Nuur area of Baian-Ölgii, western Mongolia, both from mounds with and without horse burials, produced results of ca. 1000–700 BC, which is within the central range of central Mongolian *khirigsuurs*. It seems likely, however, that the Saian-Altai deer stones may last 200–300 years later than the deer stones of north-central Mongolia, and some of the Eurasian stones may date even later, during the West Asian Scythian period. While these western stones probably continue to mark the passing of powerful warrior-chiefs, they seem to have served a more secular purpose than the classic Mon-

golian deer stones, for most stones lack the deer icon and shamanistic elements, and quite a few of these stones are incorporated into the eastern sides of Khirigsuur mounds. One may speculate that these shifts are linked to changes in the role of tattooed body decoration as personal protective shields and to the development of more secular beliefs and greater attention to possession and burial of material wealth seen in the Pazyryk and later Scythian burials. Nevertheless, the spread of deer stone ceremonialism across more than half the Eurasian continent suggests it accompanied a rapid population movement involving conquest and cultural transfer, a scenario that was to be repeated during the later Turkic and Mongol incursions into western Eurasia.

### Acknowledgments

Early versions of this paper were given at a symposium on animals in archaeology organized by Rob Losey at the 2007 Society for American Archaeology meetings in Austin, Texas, and symposium on Mongolian archaeology organized by Jan Bemmann and Ernst Pohl of the Institute for Pre- and Early Historical Archaeology of the Friedrich-Wilhelms-University Bonn held in August 2007 in Ulaanbaatar. J. Baiarsaikhan, T. Sanzhmiatav, Bruno Frohlich, and Francis Allard have made various field data contributions to this presentation. Marcia Bakry and Abigail McDermott assisted in preparing some of the figures.

### REFERENCES

#### ALLARD / ERDENEBAATAR 2005

F. Allard / D. Erdenebaatar, Khirigsuurs, Ritual, and Nomadic Pastoralism in the Bronze Age of Mongolia. *Antiquity* 79, 2005, 547–563.

#### BAYARSAIKHAN 2005

J. Bayarsaikhan, Shamanistic Elements in Mongolian Deer Stone Art. In: Fitzhugh et al. 2005 41–45.

#### CHIZHEVSKII 2009

A.A. Chizhevskii, The Genesis and Chronology of Anan'ino (Post-Maklashevka) Stelae. *Anthropology and Archaeology of Eurasia* 48, 2, 2009 (forthcoming). Translation by J. E. Walker of: *Noviie Materialii po Arkeologii Tatarstana* 2009, 1, 81–90.

#### CHLENOVA 1962

N.L. Chlenova, Ob olennykh kamniakh Mongolii i Sibiri. In: S. V. Kiselev (otv. red.), *Mongol'skii arkheologicheskii sbornik* (Moskva 1962) 27–35.

#### DIKOV 1958

N.N. Dikov, *Bronzovyi vek Zabaikal'ia* (Ulan-Ude 1958).

#### ENKHTUVSHIN / SANJMYATAV 2007

B. Enkhtuvshin / T. Sanjmyatav, Nomadic Civilization and Mongolian Bronze Age Monuments. *International Institute for the Study of Nomadic Civilizations* (Ulaanbaatar 2007).

#### FITZHUGH 2005

W.W. Fitzhugh, The Deer Stone Project: Exploring Northern Mongolia and its Arctic Connections. In: Fitzhugh et al. 2005, 3–31.

#### FITZHUGH 2009

W. Fitzhugh, Deer stones and khirigsuurs: pre-Scythian Bronze Age ceremonialism and art in northern Mongolia. In: B. Hanks / K. Linduff (eds.), *Social Complexity in Prehistoric Eurasia. Monuments, Metals and Mobility* (Cambridge 2009) 378–411.

#### FITZHUGH / KAPLAN 1982

W. Fitzhugh / S.A. Kaplan, *Inua: spirit world of the Bering Sea Eskimo* (Washington, D.C. 1982).

#### FITZHUGH ET AL. 2005

W. Fitzhugh / J. Bayarsaikhan / P.K. Marsh (eds.), *The Deer Stone Project. Anthropological*

- Studies in Mongolia 2002–2004 (Washington, Ulaanbaatar 2005).
- FROHLICH / BAZARSAD 2005  
B. Frohlich / N. Bazarsad, Burial Mounds in Hovsgol Aimag, Northern Mongolia: Preliminary Results from 2003 and 2004. In: Fitzhugh et al. 2005, 57–88.
- GRIAZNOV 1980  
M. P. Griaznov, Arzhan. Tsarstkii kurgan ranneskijskogo vremeni (Leningrad 1980).
- GRJAZNOV 1984  
M. P. Grjaznov, Der Großkurgan von Aržan in Tuva, Südsibirien. Materialien zur Allgemeinen und Vergleichenden Archäologie 23 (München 1984).
- GUO WU 2009  
Guo Wu, Early Pasturage-Nomadic Societies in the Eastern Eurasian Steppes and their Historical Significance. Paper presented at a workshop, Social Complexity in the Centers and Frontiers in Northern China, February 20, 2009. Center for Asian and Pacific Studies. University of Oregon. <http://caps.uoregon.edu/socialcomplexities.php>
- JACOBSON 1993  
E. Jacobson, The Deer Goddess of Ancient Siberia. A study in the ecology of belief. Studies in the history of religions 55 (Leiden 1993).
- JACOBSON 1998  
E. Jacobson, The Recreation of Landscape Settings in Petroglyphs of Northern Central Asia (and reflections, again, on the sources of Chinese landscape representation). International Journal of Central Asian Studies 3, 1998, 192–214.
- JACOBSON 2002  
E. Jacobson, Petroglyphs and the Qualification of Bronze Age Mortuary Archaeology. Archaeology, Ethnology and Anthropology of Eurasia 2002, 3, 32–47.
- JACOBSON ET AL. 2001  
E. Jacobson / V. D. Kubarev / D. Tseveendorj, Mongolie du Nord-Ouest: Tsagaan Salaa / Baga Oigor. Répertoire des Pétroglyphes d'Asie centrale, Fasc. 6. Mémoires de la Mission Archéologique Française en Asie Centrale 5,6 (Paris 2001).
- JACOBSON-TEPFER 2001  
E. Jacobson-Tepfer, Cultural Riddles: Stylized Deer and Deer Stones of the Mongolian Altai. Bulletin of the Asia Institute 15, 2001, 31–56.
- JETTMAR 1994  
K. Jettmar, Body-Painting and the Roots of the Scytho-Siberian Animal Style. In: B. Genito (ed.), The Archaeology of the Steppes: Methods and Strategies. Papers from the international symposium held in Naples 9–12 november 1992. Istituto Universitario Orientale, Dipartimento di Studi Asiatici, Series minor 44 (Napoli 1994) 3–15.
- KHUDIAKOV 1987  
Iu. S. Khudiakov, Khereksury i olennye kamni. In: A. P. Derevianko / Sh. Natsagdorz (otv. red.), Arkheologija, etnografija i antropologija Mongolii (Novosibirsk 1987) 136–162.
- KORTUM ET AL. 2005  
R. Kortum / Z. Batsaikhan / J. Gambrell, Another New Petroglyph Complex in the Altai Mountains, Bayan Olgii Aimag, Mongolia: Biluut 1, 2, and 3. International Newsletter on Rock Art (I.N.O.R.A) 41, 2005, 7–14.
- KUBAREV 1979  
V. D. Kubarev, Drevnie izvaianiia Altaia. Olennye kamni (Novosibirsk 1979).
- MAGAIL 2005  
J. Magail L'art des pierres a cerf de Mongolie. Arts Asiatiques 60, 2005, 172–180.
- MOLODIN 2000  
V. I. Molodin, The Pazyryk Culture: Problems of Origin, Ethnic History, and Historical Destiny. Archaeology, Ethnology, and Anthropology of Eurasia 2000, 4, 131–142.
- OKLADNIKOV 1954  
A. P. Okladnikov, Olenni kamen' s reki Ivolti. Sovetskaia Arkheologija 19, 1954, 207–220.
- POLOS'MAK 2000  
N. V. Polos'mak, Tattoos in the Pazyryk World. Archaeology, Ethnology and Anthropology of Eurasia 2000, 4, 95–102.
- RUDENKO 1970  
S. I. Rudenko, Frozen Tombs of Siberia: the Pazyryk Burials of Iron Age Horsemen (Berkeley 1970).
- SANZHMIATAV 1995  
T. Sanzhmiatav, Mongolyn khadny zurag (Ulaanbaatar 1995).

## SAVINOV 1994

D. G. Savinov, *Olennye kamni v kul'ture kochevnikov Evrazii* (Sankt-Peterburg 1994).

## SEMENTSOV ET AL. 1997

A. A. Sementsov / G. I. Zaitseva / J. Görsdorf / A. Nagler / H. Parzinger / N. A. Bokovenko / K. V. Chugunov / L. M. Lebedeva, *Chronology of the Burial Finds from Scythian Monuments in Southern Siberia and Central Asia*. In: W. G. Mook / J. van der Plicht (eds.), *Proceedings of the 16<sup>th</sup> International Radiocarbon Conference* (June 16–20, 1997, Groningen). *Radiocarbon* 40, 1997, 713–720.

## TSEVEENDORZH ET AL. 1999

D. Tseveendorzh / N. Urtnasan / A. Ochir / L. Dashniam (eds.), *Mongol nutag dakh' tüükh soelyn dursgal* (Ulaanbaatar 1999).

## TSYBIKTAROV 1997

A. D. Tsybiktarov, *Khereksury Buriatii, Severnoi i Tsentral'noi Mongolii*. In: P. B. Konovalov (otv. red.), *Kul'tury i pamiatniki bronzovogo i rannego zheleznogo vekov Zabaikal'ia i Mongolii. Istorii i kul'tura Tsentral'noi Azii* (Ulan-Ude 1997) 37–46.

## TSYBIKTAROV 1998

A. D. Tsybiktarov, *Kul'tura plitochnykh mogil Mongolii i Zabaikal'ia* (Ulan-Ude 1998).

## TSYBIKTAROV 2002

A. D. Tsybiktarov, *Eastern Central Asia at the Dawn of the Bronze Age: Issues in Ethno-Cultural History of Mongolia and the Southern Trans-Baikal Region in the Late Third – Early Second Millennium B. C.* *Archaeology, Ethnology and Anthropology of Eurasia* 2002, 3, 107–123.

## TSYBIKTAROV 2003

A. Tsybiktarov, *Central Asia in the Bronze and Early Iron Ages: problems of ethno-cultural history of Mongolia and the southern Trans-Baikal region in the middle 2nd – early 1st millennia BC.* *Archaeology, Ethnology and Anthropology of Eurasia* 13, 2003, 80–97.

## VITEBSKY 2005

P. Vitebsky, *The Reindeer People: Living with Animals and Spirits in Siberia* (Boston, New York 2005).

## VOLKOV 1981 [2002]

V. V. Volkov, *Olennye kamni Mongolii* (Ulan-Bator 1981). Reprint 2002: *Olennye kamni Mongolii* (Moskva 2002).

## VOLKOV 1995

V. V. Volkov, *Early Nomads of Mongolia*. In: J. Davis-Kimball / V. A. Bashilov / L. T. Yablonski (eds.), *Nomads of the Eurasian Steppes in the early Iron Age* (Berkeley 1995) 319–332.

## VOLKOV / NOVGORODOVA 1975

V. V. Volkov / E. A. Novgorodova, *Olennye kamni Ushkiin-Uvera* (Mongoliia). In: A. M. Mandel'shtam (otv. red.), *Pervobytnaia arkheologiiia Sibiri* (Leningrad 1975) 78–84.

## ZAITSEVA ET AL. 2004

I. G. Zaitseva / K. V. Chugunov / V. A. Dergachev / A. Nagler / H. Parzinger / E. M. Scott / A. A. Sementsov / S. Vasiliev / B. van Geel / J. van der Plicht / I. M. Lebedeva, *Chronological Studies of the Arzhan-2 Scythian Monument in Tuva* (Russia). *Radiocarbon* 46, 2004, 277–284.