

Preliminary Report of the Archaeological Investigations in Ulaan Uushig I (Uushigiin Övör) in Mongolia

Ed. by Takahama Shu, Hayashi Toshio, Kawamata Masanori,
Matsubara Ryuji, D. Erdenebaatar

1. Introduction

Mongolia is one of the key areas for the study of mounted nomads. In the period of early nomads there were people who lived a very similar life to the Scythians of the Black Sea region, the Sakians of Central Asia and so on. From the 3rd century B.C. it was the main territory of Xiongnu empire. Bronze Age sites and artifacts of Mongolia are also considered to have utmost importance for the research of the origin of mounted nomads of Eurasia. However, researches and archaeological excavations in this area have not been conducted enough to elucidate this problem.

When we started the archaeological research in the origin of mounted nomads in 1999, we chose Ulaan Uushig I for our excavation (林 2000a, 2000b). It was because in Ulaan Uushig I two main types of archaeological remains of the Mongolian Bronze Age, *kherekurs* and stag stones, are found side by side, making it most fruitful site for the study in the relationship between the two cultures. In the North Area we found 15 *kherekurs*, while stag stones are located in the South Area, forming two groups. In the North Area even a slab grave, the third type of Bronze Age remains, is found.

This archaeological site was investigated in 1970 and reported by Russian scholars, V. V. Volkov and E. A. Novgorodova, under the name of Uushigiin Övör, and became known very widely, especially by Stag Stone No. 14 with rarely seen human face (Волков и Новгородова 1975, Волков 1981, 2002). However we call this site Ulaan Uushig I, since this site is located not övör, south, but south-east of Ulaan Uushig mountain and is one of the ten sites surrounding Ulaan Uushig.

Although Russian scholars documented the stag stones of the site very minutely, their research here did not cover *kherekurs* and accordingly their map of the site was not correct.

We began the research here in 1999 by making the general map of the site. Then we made research of *Kherekur* No.1, which occupied northernmost place of the site. We did not dig the central mound but excavated the stone heaps constructed on its east and south sides. We dug down to the level on which stands stone heaps, and in some of them found horse skulls, their muzzles being oriented to the east. Neck bones and sometimes hoofs accompanied them. Also we excavated several stone circles in the South Area to find the same ritual of horse sacrifice in them.

In 2003, after four years, we started again the research here to excavate the southern half of the central mound of *Kherekur* No. 1, its stone heaps, and the area around Stag Stone No. 4 in the South Area.

We completed the excavation of *Kherekur* No. 1 in 2004 by the research of the northern half of the central mound of *Kherekur* No. 1.

In 2005 we made investigation at three localities of the site; Khereksur No.12, Slab Grave No. 1 and the area near Stag Stone No. 7.

We continued the excavation of the area near Stag Stone No. 7 in 2006, also by extending the excavation area to find nine stone heaps there.

2. Archaeological Remains around Ulaan Uushig uul

Ulaan Uushig uul is an isolated round mountain (diameter 7-8 km), the height of which is 1728.1 m above sea level, situated on the northern bank of the river Delger moron, about 20 km west of the city Moron (Pl. 1-1). The mountain is formed by red granites. We observed archaeological remains around the mountain and found several features.

1. Archaeological remains are mainly divided into four kinds: 1) khereksur with a square enclosure; 2) khereksur with a round enclosure; 3) small square enclosure with a stele on each corner; 4) stag stone with small stone circles.

2. They are concentrated on the eastern and the southern feet of the mountain, while there are a few remains on the western foot and no remains on the northern foot.

3. Each valley is occupied by one group of remains. We counted ten groups of remains (Ulaan Uushig I-X).

4. In some valleys khereksurs stand in a row.

5. While on the flat plain there are bigger khereksurs, on the slopes of a valley there are smaller khereksurs and enclosures.

6. The biggest khereksur of each group is measured approximately 70-80 m in diameter or side of an enclosure.

3. General Description of Ulaan Uushig I

This site is located to the southeast of Ulaan Uushig. Apart from Khereksur 15 that is about 340 m to the north of Khereksur 2, the site spreads about 600 m from north to south, about 400 m from east to west (Pl. 2). In its southern part there are erected two rows of stag stones, which make this site unique among the khereksur sites around Mt. Ulaan Uushig.

Another peculiar feature of this site is that it is situated as a whole on the plain, unlike many khereksur sites around Mt. Ulaan Uushig which extend from the slope in the valley to the plain, the largest being at the outermost.

Twelve khereksurs of this site are located from north to south, occupying the slightly higher places, while Khereksur 2 stands apart to the west and Khereksurs 3, 9 to the east. Among the twelve khereksurs Khereksur 1 occupies the northernmost position, next comes Khereksur 4, by far the largest khereksur in the site.

Khereksur 4 is furnished with square stone enclosure, stone heaps which surround it from eastern and southern sides, and a stone pavement on the north. It has two horn-like protrusions on the eastern side of the central mound. Khereksurs 5, 6, 7 are constructed very close to Khereksur 4, and it is possible to consider that when Khereksurs 6, 7 were built some of the stone heaps around Khereksur 4 were demolished. Two types of stone enclosures are seen around the central mounds of

kherekurs: square and circular. Here the square type is adopted only by Khrekurs 1 and 4, and the others are of the circular type.

14 stag stones are situated near to the southern kherekurs. V. V. Volkov and E. Novgorodova reported 15 stag stones, one of them now in the possession of the Khovsgul Aimag Museum in Moron. Although the scholars stated that stag stones are erected in three rows, they appear to be in two rows as they stand now: Stag Stones 1, 2, 3 in the east, the other 11 stag stones in the west.

Several species of stone are employed for the stag stones. For the most part they are made of granite which abounds in this area, but some examples like Stag Stone 7, which is made of gray stone, and Stag Stone 14, of white stone, appear to be brought from other area.

There are found many stone circles or some other stone structures around stag stones. It was one of our aims to reconstruct the original condition of this stag stone complex to deduce its ritual.

The map of this area was mainly made by Drs. Usuki Isao and Miyake Toshihiko in the first season.

4. Kherekur No.1

This kherekur is situated at the northernmost place of this site, except Kherekur 15 that stands about 340 m north from this kherekur. It is a typical kherekur with 21 stone heaps and was chosen for excavation for its suitable size (Pl. 3-1, 2).

The central mound has the diameter of 13 m, the height of 1.5 m. On its eastern side it has antennae-like stone construction (protrusions) that is known on several kherekurs in Mongolia. This central mound is surrounded by square stone enclosure with stone heaps at four corners. On northern, eastern and southern sides 21 stone heaps are placed to encircle the eastern half of the enclosure. This kherekur are not accompanied with small stone circles that surround kherekurs often.

The first season we cleaned the eastern protrusions, eastern half of the enclosure and 21 stone heaps down to the level on which they are laid, and opened Stone Heap No.1 and northeastern corner stones of the enclosure.

The layers of this area are basically as follows:

Layer I : surface soil

Layer II : darkish brown soil

Layer III : yellowish brown soil mixed with stone granules

Layer IV : virgin soil often topped with gravel

These five layers are not always all present, as seen typically in the South Section, where Layer I is found directly on Layer IV in most places. The kherekur complex is generally laid on Layer III, but some stone heaps were found also on Layer IV. We do not think this means the difference of time of construction, but consider that the virgin soil was exposed here and there at the time.

4-1. The central mound

We first removed the southern half of the central mound in the second season and then in the next season removed the northern half of the mound to discover the stone cist. In the process we documented the conditions of the mound in three stages: 1. When the soil between surface stones is

removed, 2. When the stones of the slope were removed halfway, 3. When the stones placed on the ground level were exposed. Majority of the stones on the ground were placed directly on the virgin soil, but in some places they were set on the soil layer above the virgin soil, probably according to the surface condition of the construction period. We consider that the mound was constructed in the period when the Layer III was on the surface.

A stag stone was found outside the edge stone of the mound at the south-eastern quarter (Pl.3-3). It has an engraved circle at a corner and a larger circle below it. The sizes are: length 82 cm, width 36 cm and thickness 13 cm. The surface of the stone is crude and not polished. Although it does not have a figure of a stag, it is generally recognized that similar stones constitute a type of stag stones called “common Eurasian type”. Many similar stag stones were found just outside of a kherek-sur in Ukok plateau in Russian Altai (Polos'mak 1993).

Another important discovery is the pottery fragments found in several places on top of the mound and in the mound, mainly in the central part of the mound (Pl.3-4). A bottom fragment was discovered even at the ground level under the mound, at the edge of a hole of an animal (talbagan?). Most of the fragments are gray brown in color and not fired firmly. The body was beaten with a paddle engraved with ornamentation, then attached with two bands with incised decoration at the upper part of the body. The mouth also has incised decoration. They seem to belong to one or two vessel and are similar to the pottery of the “Slab grave culture” of Buryatiya (Цыбиктаров 2001: Рис.29). Their distribution shows that the vessels were placed on the top of the mound and later their fragments moved into the mound, for example, by the activities of small animals. Those fragments are of the same age or later than Kherek-sur No.1. They present an important clue not only for the date of kherek-sur but also for the relationship between those cultures.

Besides the above-mentioned pottery fragments, small fragments of Xiongnu type pottery were also found on the surface or in the mound. They are blackish in color and have no ornamentation. One of them was re-used as a circular tablet probably in later date.

Fragments of animal bones were found on the surface and in the mound, even within the stone cist. We think their distribution was connected with the activities of small animals as in case of pottery fragments, and not related to the people who constructed the mound.

At the third stage of the excavation, we observed large stones were placed on the ground as if in a concentric circle (Pl.4 -2, 3, 4). Near the center of the mound they even appeared as if set lengthwise leaning toward the center. This condition is considered to be connected with its construction process; the mound was formed by putting on the stones around the core part, rather than placing the stones layer by layer from underneath. This idea is supported also by the observation of the East – West cross-section of the mound (Pl.4-1).

We observed near the northwestern edge that comparatively small stones were used to fill the gap between the outer edge and the inner concentric circle. This is because the center core of the inner concentric circle was located a little northeast of the accurate center of the edge circle, meaning that the entire plan of the kherek-sur was already formed at some stage of the construction.

We removed all the stones of the mound except the core part and the edge circle. By taking off outer large stones from the core part, we found the cist, which was filled with earth (Pl.4 – 5). The cist

was constructed of two tiers of large stones, covered with four flat stones. The tier below was consisted with four stones, space within: 141cm × 72cm. We examined within the cist carefully but found only animal bone fragments and small pottery fragments, recovering neither human bones nor funeral inventory. After the examination of the cist, we checked the ground under the stone mound but found nothing but a big hole of talbagans.

4-2. Stone enclosure

The square enclosure is measured 30m on the east side, 26m on the north side and furnished with stone heaps at the four corners. As the result of the investigation, we discovered nothing in three corner stones, only finding in the northeastern corner stones a bone fragment that was not located on the original surface. Their structure did not include the pavement of small stones often seen in the stone heaps to the east of the enclosure. We concluded that they were different from the stone heaps in character and had mainly the decorative purpose.

4-3. Protrusions on the eastern side

The central mound is attached with protrusions on the eastern side. They consist of the antennae-like protrusion on the south and the oval shaped protrusion on the north. When we removed the upper stones of the central mound, we could see the edge circle clearly on the east side where the protrusions touched the mound. The protrusions were obviously attached to the mound after the mound was constructed. However it does not necessarily follow that the protrusion was of later date.

We removed the upper stones of the protrusions to examine the condition of the first layer stones on the ground, and found that the protrusion on the north was to be divided into two parts; short antennae-like protrusion on the north and a circular stone heap at the center. Furthermore we discovered the main part of the south protrusion was arranged regularly using comparatively large stones. The entire protrusions can be divided into four parts.

- A. The north short antennae-like protrusion.
- B. The central stone heap.
- C. The part immediately bordering the edge stones of the central mound.
- D. The south antennae-like protrusion.

It is possible that the part A and the part D originally constituted an oval circle. However the shape of the circle would not be regular and the stone arrangement of the part A is not the same as the part D. The part C is paved with comparatively small stones, a similar condition to the one seen in stone heaps outside the enclosure and stone circles near stag stones. A pottery fragment was found in this part. The part D forms a large encircling arm extending first to the east, curving to the north, then a little to the west. It overlaps the north-south line of the enclosure of the kherek-sur, showing evidently that it was placed after the enclosure line. While it demonstrates regular arrangement at the beginning, the extending part does not have the same arrangement, making it difficult to tell if it was constructed at one time according to a certain plan or not.

We set a cross-shaped trench of 1 m's width across the protrusions. By the excavation it was again attested that the beginning part of the south protrusion was placed on the layer of yellowish

brown soil mixed with stone granules, the layer on which generally stand the khereksur, the enclosure and Stone Heaps. In the space surrounded by the protrusions we found nothing.

The central stone heap, the part B, is about 3 m in diameter. In the process of excavation, we observed that all the stones were put on the darkish brown soil layer. Under the stones we found some animal bone fragments, a bead whose material is yet to examine (Pl.4-6), and four small iron plates (Pl.4-7). Besides these, an almost complete pottery vessel (Pl.4-8) and a fragment of another vessel were uncovered. However we did not find human bones neither between the stones nor under the stones, and no burial trace was discovered.

The most important find is the pottery vessel: 16.6 cm in height and 11.8 cm in diameter of the mouth. It is dark brown in color and not fired firmly. It has a flat bottom and the mouth is executed with incised decoration. Although we do not have close analogies among actual finds, its shape is similar to vessels represented on various stone statues of Old Turkic period in Mongolia and Central Asia (e. g. Сәп-Оджав 2003, зууар 14-16). Probably, this pottery also belongs to the same period.

We tentatively conclude that the stone heap was of later date than the central mound, most probably belonging to the Old Turkic period.

4-4. Stone heaps (Pls. 5 and 6)

Twenty-one stone heaps are placed mainly on the eastern side of the enclosure, including some on northern and southern sides. On the eastern side larger ones occupied central position inside and smaller outside.

The basic structure of the stone heaps seems to be as follows: larger stones form a circle, in which smaller stones are placed flat. Sometimes outer larger stones are almost erected as in Stone Heap No. 1. This structure is typically observed in stone heaps of the smaller size and not so apparent with larger ones, although in some larger ones such as Stone Heap No. 14 is found the same structure.

Most stones used for the stone heaps are red granite that is found in abundance on the hills of the neighborhood. Sometimes white stones are also used: in Stone Heap No. 16 most of the stones, and in Stone Heap No. 17 more than half of the stones.

Horse heads were found from 17 stone heaps except for Stone Heaps Nos.1, 6, 19, and 21. Horse skulls are not always placed at the center, but the muzzles are always directed to the east and the lines of the teeth placed horizontally.

Most of the horse skulls were accompanied by neck bones, which were placed either on south (Nos. 3, 4, 5, 7, 9, 10, 12, 15, 20), or north (Nos. 2, 11, 13, 18) of the skulls. In some heaps hoofs were found together with skull and neck bone. Two hoofs were discovered in Nos.11, 13 and 16, and three hoofs were found in No.15.

Horse skulls from Nos.3, 4, 14, 16 were considered as those of juvenile horses and those from Nos.9, 11, 15 were skulls of male horses.

Stone Heaps Nos.7 and 11 were cut in half in order to make clear the construction process. Their vertical sections show different ways of construction: in No.11 the skull was simply put on the first soil layer above the virgin soil but in case of No.7 the skull was seen as if buried in the soil layer to be placed almost on the virgin soil. Probably, the skull of No.7 was placed in a small pit dug in the soil

layer, the contour of which was not detected at the time of excavation. Also in case of No.11 it should have been necessary to dig a small hole for the mandible, if the line of the teeth was to be placed horizontally.

The construction process of the stone heaps is considered basically as below.

1. Put a horse skull on the ground. Sometimes dig a small hole for the mandible or a small pit for the entire skull and neck bones.
2. Put soil on the skull and neck bones.
3. Spread comparatively small stones on the area.
4. Place large stones in a circle.

5. Khereksur No.12

Khereksur No.12 is one of the smallest khereksurs in Ulaan Uushig I, situated to the east of Stag Stone No. 3. In 2004, we found a stone cist within Khereksur No. 1, but neither human bones nor grave goods were discovered in it. In 2005 we chose this small khereksur for excavation, wishing to confirm again that the khereksurs were constructed as tombs. The central mound of the khereksur before the excavation is 9 m in diameter, surrounded by a circular enclosure of 16 m in diameter (Pl.7-1). To the south of this khereksur is found a small stone heap.

First we removed the soil between stones and confirmed that the khereksur was on the layer of yellowish brown soil. That layer is found on the virgin soil at many places of Ulaan Uushig I, the layer on which also constructed Khereksur No.1 with its stone heaps.

Removing the stones that were scattered outside the original mound, we tried to find the edge of the mound, and then recognized that the edge was defined by rows of stones that were put lengthwise leaning toward the center, instead of encircling large stones which were seen with Khereksur No.1. Not only the stones that were placed at the edge, but all the stones of the first layer were seen more or less leaning toward the center (Pl.7-2, 3). This peculiar condition, which was not found in former excavations, is considered due to the small size of the khereksur, which made it unnecessary to define the edge of the mound with large stones.

At the center of the mound was observed an oval structure consisting of radial long stones (Pl.7-4). Considering it to be the stone cist, we removed the outside stones. The stone cist was oval in shape and composed of 3 or 4 tiers of spiraling long and flat stones. As we removed upper stones and the soil inside, we discovered bones almost at the bottom, the level on which was laid the khereksur (Pl.7-5).

The stone cist was constructed first by placing seven stones in rectangular form, and then attaching with stones on its outside, finally laying radial long and flat stones spirally, so that the opening at the top dwindled.

Most of the bones from the cist are judged by Dr. D. Tümen, Professor of the National University of Mongolia, to be those of human child of 5 or 6 years old. This judgment is very important for it gives yet another support to the theory that the khereksurs are basically burial sites. According to Prof. Erdenebaatar, this is the fourth case of human remains being found inside the cist of khereksur in Mongolia. Several burned bones from the khereksur, fragmentary skull bones and vertebrae, also belong to the child, the fact that needs some explanation.

Fragmentary animal bones were discovered during the excavation, but their relationship to the khereksur is not clear.

In addition, an iron knife was found between stones of upper level. Its length is 16.7 cm and general shape resembles to that of bronze knives of Spring and Autumn – Warring States period, and the end of the handle is bent to form a tube. A similar iron knife was found at Maoqinggou in Inner Mongolia (田広金, 郭素新 p.295, fig 56-4).

On the south side of Kh-12 was placed a stone heap, forming a circle of about 3 m in diameter, and being constructed of red granite, the same as Kh-12. The stone heap was placed on the yellowish brown soil or the virgin soil, on the same layers as Kh-12 stood. By removing some surface stones, the core part was recognized (Pl.7-6). It was square in shape, composed with bigger stones.

Under the most east side of the core part, a sheep jawbone, some bone fragments and six teeth were found in a small pit, which was dug from the upper layer. The jawbone was put left side up and the muzzle oriented to the south. The condition of bones was quite bad. Three front teeth and three molar teeth were found near the jawbone. Except sheep bones and teeth, we did not find any artifacts or animal bones.

This stone heap is different from other stone heaps around Khereksur No.1, both in the buried animal and the structure. Although this stone heap and Khereksur No.12 are constructed very near and on the same layer, it is difficult to tell the relationship between them.

This stone heap was investigated mainly by Tanaka Yuko.

6. Slab Grave No.1

This slab grave is located on the northeast of the Kh-4, the biggest khereksur in Ulaan Uushig I. It was chosen for excavation, since, in addition to the fact that it was the only slab grave in this area, it appeared to have destroyed the eastern part of the northern pavement of Kh-4, providing the clue as to the relationship between khereksurs and the slab graves.

We began the excavation by removing the soil between stones. Slab Grave No.1 is almost square in shape, but with the convex, nearly semicircular, south side (Pl.8-1, 2, 3). Its size: east-west 3.5 m, north-south 4.5 m. Stones are laid within the slab enclosure and small stones are laid outside the southeastern, southern and southwestern slabs. Slabs are set lengthwise, all leaning outward. To the west of the slab grave, four or five slabs are set also lengthwise in a line, but their connection with the slab grave is not clear.

Through the observation of the cross-section of layers, we judged this slab grave was constructed on the yellowish brown soil, the same layer on which khereksurs were also constructed. The slabs were inserted into the virgin soil, leaving V-shaped hollows in cross-section, which were filled with darkish brown soil later. Since V-shape of the hollows is leaned outward, especially those of east and west, we consider slabs were inserted into the hollows from outside, and then set to the upright position. Small stones outside the enclosure were laid also on the layer of yellowish brown soil, confirming the observation by A. D. Tsybiktarov that slab graves and the outside stones are contemporaneous (Цыбиктаров 1998, сс.32-43).

A pit was found inside the enclosure and a skeleton was found at the bottom (Pl.8-2, 4). The pit

was dug into the virgin soil from the yellowish brown soil. We did not succeed in defining its contour clearly because of several holes of small animals. The skeleton was not in a good condition but despite damages given by small animals, its skull, pelvis, leg bones etc. were found *in situ*.

The skeleton is of male of 50 to 55 years old, his height 161 cm (see Appendix 2), and his head oriented to the southeast.

Between his legs was found a pair of bow attachments made of antler (Pl.8-5). Another fragmentary attachment was found in the upper level of the burial pit. This kind of bow attachment is widely distributed among Eurasian nomads, having been used by people of Slab Grave culture, Xiongnu, Xianbei and even in the Medieval Ages. It is difficult to determine the date of this grave precisely by these artifacts.

7. Stag Stone No.4 Area

At the present time there stand 14 stag stones in Ulaan Uushig I, most of which were re-erected and fixed by cement in recent times. Their original positions were probably not much different from the present ones. They stand in two (eastern and western) rows from north to south. Stag Stone No.4 is located at the northernmost of the western row and surrounded by several small stone circles.

We excavated the area near Stag Stone No. 4 about 200 m², in which we could distinguish 8 stone circles (Pl.9-1, 2). But there might have been several more stone circles originally. We looked for the pit in which Stag Stone 4 stood, but we could not find it.

Stone circles are formed by large stones. Their diameter is measured nearly 3 m. In the stone circle there are paved small stones. We often see those small stones not only under big stones but also outside stone circles. Stone circles and stone heaps east of khereksurs are very similar in using of those small stones at the base, as well as the ritual of horse sacrifice mentioned below.

In Stone Circles No.2, 4, 5, 6 and 7 horse skulls were found. Pit No.8, from which also horse bones were found, might have been a stone circle originally. The skulls and bones of Stone Circle No.5 (Pl.9-4) and Pit No.8 were placed in small pits, which were dug in the virgin soil of white lime. The horse bones of Stone Circles No.2 and 6 were buried again because of time limitation. See Appendix 1 concerning the equid burials.

7-1. Stone Circle No.4

This stone circle was found in 1999 to the south of Stag Stone No.4 and excavated in 2003 (Pl.9-3). We investigated the area of 5×4m, dividing the circle in half for an east-west section. We first dug the southern half of the circle. Soil layers were thin. That soil was yellowish brown in color, solid and sandy, including fine grains. Under this layer was the very solid virgin soil that contained a lot of small gravels. An elliptical hole, about the size of 55 cm×35 cm, depth 25 cm, was found in the north side of the circle. It was dug from the layer of yellowish brown soil into the virgin soil. We found a horse skull and neck bones in it. Hoofs were not discovered. The muzzle of the skull was placed toward east, and the neck bones were laid on its north side. The number of neck vertebrae was 6. These bones were in bad condition, being damaged from a lot of grass roots. The top of the skull was crushed flatly.

After taking up horse bones, we removed surrounding big stones. Large stones lay outside the

circle and small stones were spread inside. Some large stones were placed in standing position. Under large stones we did not find pavement of gravels. In this stone circle large stones were set in a circle first and then small stones were spread within.

The research of this stone circle was mainly conducted by Tanaka Yuko and Hatakeyama Tei.

7-2. Stone Circle No.7

In 1999 we found a horse skull in stone circle No.7 but we could not excavate it because of the schedule limit. In 2003 we opened it again and found the skull of an adult horse (Pl.9-5). The large skull was in a complete good condition with the neck bones to the north and accompanied with three hoofs.

8. The area around Stag Stone No.7 (Pls.10 and 11)

8-1. Outline of the research

Stag Stone No.7 appeared to be deeply inserted into the earth, visible only its upper part (Pl.10-3). When V. V. Volkov and E. A. Novgorodova made research here, they could see the entire stag stone and reported it. We wanted to examine it entirely by digging out the lower part from the earth. Removing the soil around the upper part, we soon discovered the lower part, which was broken and lying nearby. The stag stone was broken into two, the upper part above the earth, the lower part lying in the earth.

As we excavated around Stag Stone No.7, it became apparent that it was surrounded by a stone circle of about 4 m in diameter (Pl.10-2, 4). The Stone Circle is placed on the yellowish brown soil, the same layer on which stood Kh-1, Kh-12, and Slab Grave No.1. Under the Stone Circle rectangular stone pavement was found, its contour being lined with small flat stones vertically inserted into the earth (Pl.11-1, 2). A very small fragment of green stone (turquoise?), 5 mm × 6 mm, was found on the stone pavement.

We took the Stag Stone No. 7 out of the place where they stood and lay, with the aim at learning how it was erected originally. We found three holes under the Stag Stone No. 7 and concluded that the one at the south (Pit No. 3) was most probably the hole where it stood (Pl.11-1, 2).

According to the stratigraphical order, the pavement is evidently earlier than Stone Circle, which appears to be later than Stag Stone No. 7. The pavement was partially destroyed by Pit No. 3. Under the pavement was found an older pit (Pit No.4).

Stone Heaps No.1 and No. 2, situated to the east of Stag Stone No. 7, both yielded sets of horse skull, neck bones and hoofs (Pl.10-5, 6).

In Stone Heap No. 1 was discovered another very interesting structure. A flat surface stone of its upper part were found inside of the stone heap, that part going downward in a cylindrical shape, its lower side appearing to be attached with flat stone structure.

In 2005 when we excavated around Stag Stone No.7, we found a gathering of stones on the corner of the excavation area that appeared to extend to the south and the west. In 2006 we extended the excavation area to the southwest (Pl.10-1, 2, Pl.12). The Extended Area is about 8 m from north to south and 9 m from east to west, overlapping the area of the last season. Stag Stone No.8 stood concreted on its northern side, which we took out of the position in the process of the excavation. This Extended Area

turned out to be almost entirely filled with stones of various sizes, the accumulation particularly high in the center.

Assuming that here there was the aggregation of stone heaps, we removed the stones which did not constitute parts of the stone heaps any more. Basically we left the stones that lay directly on the ground. As the result of the work we uncovered in the Extended Area nine circular stone heaps, numbered from No.3 to No.11. We excavated No.9 and No. 11, both yielding horse skulls oriented to the east.

8-2. Stone Heap No. 1

The size of the Stone Heap No. 1 is about 3.5 m in diameter and 1 m in height, basically constructed by large stones. Outside of the stone heap, many small stones were scattered. The process of the excavation was as follows; 1) removing stones of the southern half, we observed the east-west section of the stone heap, 2) removing all stones except the edge circle, we confirmed the plan of the ground level, 3) in order to make clear the construction of the stone heap, we dug a deep trench at the southern part.

At the ground level, large and flat stones were placed on the yellowish brown soil layer. On these stones comparatively small stones are placed and very large stones were on the top of the stone heap. After removing all the stones except those of the edge circle, we found a horse skull and stones like a lid covered with yellowish clay at somewhat west from the center.

The horse skull was found at eastern edge of the stone heap. The upper part of the horse skull was not in excellent state of preservation. Its muzzle was oriented to the east and its tip was under one of the stones of the edge circle. It was accompanied with neck bones, one of the backbones, and hoofs. Neck bones and one of the backbones were to the north of the skull and a hoof was to the south. The other three hoofs were under neck bones.

The horse skull was placed almost on the virgin soil. We assume the process of interring the horse skull as follows; 1) dig the pit within the yellowish brown soil layer above the virgin soil, 2) put a horse skull and others, 3) cover the horse skull with the same soil. Probably for that reason, to recognize the pit was extremely difficult.

By digging the trench at the southern part, it became apparent that the stone lid covered with yellowish clay was just an upper part of the structure which still continued downward. This structure consists of the tall cylindrical part on east side and flat stones like a pavement on west side. The former was constructed of stones and soil piling up alternately. Its size is 0.7 m in diameter and 0.8 m in height. The latter was constructed basically of flat stones. Its size is 1.1 m in length.

In the east-west section of the trench, we could recognize the block of grayish brown soil with small gravels under the yellowish brown soil layer. Similar soil existed east and south of cylindrical part. Therefore, we consider that this grayish brown soil with small gravels was used for covering the structure after construction. By the fact that the covering soil was under the yellowish brown soil layer on which the stone heap was constructed, we tentatively conclude that the cylindrical and pavement-like structure was of earlier date than the stone heap.

Because of the schedule limit of this season, we decided to stop the further excavation. The

solution of the nature of this structure depends on further research in the next season.

8-3. Stone Heap No. 2

The size of Stone Heap No. 2 is about 3 m in diameter and 1 m in height. It is basically constructed by large stones. Outside of the stone heap, especially on the west, many small stones were scattered. The process of the excavation was as follows; 1) removing stones stage by stage from above, we observed the condition of the stone heap, 2) removing all stones except the edge circle, we confirmed the plan of the ground level, 3) in order to make clear the construction process of the stone heap, we took southern half of the edge circle and dug a trench there.

Removing stones on the top of the stone heap, it became apparent that large long stones were placed like a petal at the second and third tiers of the edge circle. This method of construction is very similar to that of the stone cist in Khereksur No. 12. Inside the edge circle, comparatively small stones were placed. Long stones at the second and third tiers of the edge circle were placed obliquely into the inside, being laid on smaller stones inside.

Having removed all the stones except the edge circle, we found a pit at the eastern edge of the stone heap, in which a horse skull, neck bones, and hoofs were found interred. The pit was oval in shape. The horse bones were in excellent state of preservation. Its muzzle was oriented to the east and neck bones were found to the south of the horse skull. One of the hoofs of forelegs was found on the north of the skull, the other was on the south of neck bones. And one of the hoofs of hind legs was found at the back of the skull, the other was under the neck bones.

We found an isolated hoof outside the pit, the meaning of which is unknown.

According to the observation of the cross-section, the pit was dug from the layer of the yellowish brown soil on which the stone heap was constructed, into the virgin soil. And its eastern edge was under one of the stones of the edge circle. Therefore, we consider that construction of the pit for the horse skull preceded that of edge circle.

On the construction process of the stone heap, the above-mentioned observation made us conclude as follows; 1) dig the pit from the yellowish brown soil layer into the virgin soil, 2) put a horse skull, neck bones and hoofs on the bottom of the pit, 3) cover with the soil, 4) place large stones as edge circle, 5) lay relatively small stones, 6) place long stones like a petal and obliquely, 7) put large stones on the top.

The research of Stone Heaps 1 and 2 was conducted by Yagyū Toshiki and Yagi Satoshi.

8-4. Pits Nos.1-3

It was one of the purposes of the works of this area to find the original position of the Stag Stone No.7 and to elucidate how it was erected. The Stag Stone No.7 was placed in the Stone Circle, broken into 2 parts. The upper part stood on the yellowish brown soil and the lower part was lying on the same layer to the south of the upper part. After we removed the stones and cleaned the place, we found there 3 pits, dug into the virgin soil. We numbered each pit as No.1, 2, 3 from north to south.

Pit No.1

This pit was in diameter 138cm, depth 106cm, and was dug from the middle of the yellowish

brown soil. The Stone circle was placed above the pit; its stones were laid on the surface of the yellowish brown soil layer. We found the orange colored clay at the bottom of the pit, but no object was found inside. This pit is thought to be earlier than the Stone Circle.

Pit No.2

This pit was situated near the pit No.1. It was not so deep (diameter 98cm, depth 52cm), and nothing was found inside.

Pit No.3

Pit No.3 was found to the south of Pit No. 2, under the bottom end of the lying part of the stag stone No.7. The diameter was 165 cm, and the depth was 55 cm. The pit was under the Stone Circle and destructed a part of the Stone Pavement. The Stone Circle was constructed on the surface of the yellowish brown soil, and the Pit was dug from the middle of the same layer. So it is thought that this circle was constructed after the Pit was disused. Consequently this pit was dug earlier than the Stone Circle and later than the Stone Pavement. In addition, the Stone Circle was placed on the same layer of the yellowish brown soil as were the kherekurs or stone heaps in Ulaan Uushig I. It is later than Pit No.3, however still belongs to the period of those monuments.

In Pit 3, we found some large stones (more than 30cm in the diameter). It is possible that these stones were used as the supports for the large something which was erected in the pit. In addition, Pit No.3 was placed under the bottom end of the Stag Stone No.7. For these reasons, we consider Pit 3 is the original place of Stag Stone No.7.

Those pits were investigated by Matsubara Ryuji and Tanaka Yuko.

8-5. Stone Pavement and Pit No.4

The Stone Pavement was excavated from direct underneath of the Stone Circle surrounding the Stag Stone No.7. The size of this stone pavement is around 5.6 m from north to south and 1.3 m from east and west. It is almost rectangular in shape although the northern and southern fence is slightly broadened than its center. The stone fences enclosing the Stone Pavement are well arranged in line, using rectangular shaped stones. However, north-western corner of the fence is now detached from the most part of the Stone Pavement and the south-western (SW) corner is destructed by Pit No.3. If the lost SW part was arranged in the same shape as the south-eastern (SE) corner, which is rendered in an acute angle, the original shape would be a plectrum shape broadening toward the south.

The construction of the Stone Pavement is well designed with careful choice of stone materials. The stones employed are mainly red granite, which is generally used in UUI site. In the northern part of the stone pavement, relatively large flat stones are spread. From the centre to the southern part of the stone pavement, small round stones are used between red granite. Under the place, where there was a massive concentration of small round stones, was found Pit No.4 mentioned below. Red granite are also used in the southern part of the stone pavement, which tends to be somewhat disordered in spreading of stone choices and arrangements.

Since the Stone Circle was constructed directly on the Stone Pavement with little space in between, it is evident that the Stone Pavement is a prior construction to the Stone Circle.

It was observed that a certain part in the middle of the Stone Pavement fell down. This

phenomenon was explained by the existence of an old pit, the soil inside being soft, causing the part of the Stone Pavement above to subside. Pit No.4, which was found under the Stone Pavement, is elliptical in shape, the length from north to south around 1.2 m and 0.8 m in depth. The lower part of the pit got a disturbance by animals (probably steppe marmot). This disturbance (6th layer) goes to the east to break a part of the wall of the pit. The stratigraphy shows that the yellowish brown soil layer (2nd layer) covered the Pit No.4 which was dug into the virgin soil, and that the Stone Pavement was set on the second layer.

The Stone Pavement and the Pit NO. 4 were investigated by Soma Takuya.

8-6. Buried Horse skull

We found a horse skull to the southeast of Stone Heap No.1. It was buried in the pit (65×47×26cm), which was dug into the virgin soil, its muzzle being oriented to the east. In the same pit we found neck bones and 4 hooves. 6 pieces of the neck bones were placed at the north side of the skull and 1 piece, the first spine, was placed on the lower jawbone. 1 piece of the hooves was also placed on the lower jawbone, one was found on the top of neck bones and one was on the northwest side of the skull, and last one was under the back of the skull. 2 hooves of the front were a little bigger than back ones.

This horse skull was not accompanied with upper construction. That situation is different from other horse skulls that we have ever excavated under the stone heaps or the stone circles in Ulaan Uushig I. It is also strange that the first neck bone and 1 hoof were found on the lower jawbone. The reason for these uncommon features is not clear.

8-7. Stone Heap No.9

When Stone Heap No.9 was found, there was a flat stone in the center of the stone heap, which was thought as a covering stone. First, the center stone was removed, and then inside of the stone heap was cleaned. Afterward the soil containing many pebbles appeared from the underneath of small stones. And then a lower jaw of a horse, which is oriented toward east, was found with a single hoof and a first piece of neck bones. These horse bones are located just underneath of the covering stone in the center of the stone heap, the bottom of the pit within the virgin soil. The stone heap is placed on the yellowish brown soil layer, which is thought as old ground level.

The horse burial pattern of Stone Heap No. 9 is different from other stone heaps which we excavated in UUI. The hardened soil, which appeared under the covering stone, appeared to be heaped on the horse skull. While burials of horse skull with hoofs and whole neck bones are found in other stone heaps, only a lower jaw, a single hoof and a first piece of neck bones are found in the Stone Heap No.9. Analyses of the size and the number of teeth show that the horse would be identified as a young horse (less than one year old?), although the first piece of neck bones highly likely belongs to a mature horse. Therefore it is possible to assume that these three horse bones might not be from the same horse.

This stone heap was investigated by Kawabata Hayato.

8-8. Stone Heap No. 11

Stone Heap No. 11 is about 2.4 m in diameter, situated at the southwestern corner of the

Extended Area. This stone heap is constructed very regularly and tightly, its preservation also superb. When we removed the stones of the upper layer of the outside circle, we could see several long stones were laid radially with their pointed corner toward the center. This structure bears strong resemblance to that of the stone cist of Khereksur No. 12 and Stone Heap No. 2 of the Stag Stone No.7 Area. Such long stones are also observed in other stone heaps, such as Nos.5, 7, 8 of the Extended Area. Under the layer of the long stones appeared the circle of large stones, which is laid on the yellowish brown soil.

Comparatively small stones were packed tightly inside the stones of the outside circle formed in the above-mentioned process. This stone heap is considered to show the typical construction of this type.

After the removal of small stones a horse skull was found in the southwestern side within the outside stone circle. The muzzle was oriented to the east, neck bones were placed close to the south side of the skull, and three hoofs were found with them. The preservation of the upper part of the skull was not good. The pit for the skull, 85 cm × 50 cm, depth 30 cm, was dug from the surface of the yellowish brown soil layer, its bottom within the virgin soil. The soil within the pit was yellowish brown soil with gravel.

We removed the stones of the southern half of the outside stone circle for the drawing, and after the work reconstructed the stone circle again with the same stone, each one to its original position.

This stone heap was excavated by Matsubara Ryuji and Takahama Shu.

9. The re-discovery of Stag Stone No.15 and newly found stag stones

V. V. Volkov and E. A. Novgorodova reported 15 stag stones when they wrote about this site in 1975 (Волков и Новгородова 1975), and Volkov published the same stag stones in his book (Волков 1981, 2002). However D. Tseveendorj wrote about 14 stag stones later, and when we visited the site in 1997, we also found only 14 stag stones, without seeing Stag Stone No.15 according to the Volkov / Novgorodova's number.

Stag Stone No.15 is described as the finest stag stone in Ulaan Uushig I, decorated with interesting design of two beasts of prey attacking a horse.

In 2005 the curator of the Khövsgöl aimag Museum in Mörön told Erdenebaatar about a stag stone in their possession, and as we went to see it, it turned out to be Stag Stone No.15, which had been missing from the site for years.

The stag stone is not in a perfect condition, the lower part is missing and some parts are also missing in the middle and upper parts. One beast of prey is lost and only the pommel of stag head design is left from the dagger.

It is very regrettable that the stag stone has not been preserved in the same good condition as V. V. Volkov and E. A. Novgorodova found 30 years ago.

Three fragments of stag stone are discovered during our investigations. One is found near Stag Stone No.6, made of red granite, and carved with several stags (Pl. 20-3). Its length is 70 cm. The second is of white gray stone and figures of stag are visible. The sizes are: 61×35×17 cm (Pl. 20-4). The third one is a small fragment (length 39 cm), similar in quality of stone to the second one. It is too small to recognize the design.

10. Documentation of stag stones

In parallel to the excavation, we conducted two kinds of research works on stag stones of Ulaan Uushig I. One is the documentation of figures on stag stones, using the method developed by Matsubara. First we draw a straight line with the special marker pen from the top to the bottom of the stag stone and also draw lines at right angles in every 50 cm from the bottom. Then feeling the engraved lines of figures with fingers, we draw the line on the stone with the marker pen, and then placing the mesh on the stone, we take photographs of the line with digital camera. The mesh is of 50 cm square and on it were drawn alternately yellow and pinkish threads tightly in every 5 cm.

After the work at the site, we make drawings, looking at the pictures on the computer. The special marker pen is originally exploited for the drawing on building materials, and its ink vanishes very soon, or if you wash it with water it disappears at once, giving no damage to the stag stones. As the result of this documentation work, many new details of figures were discovered, partly correcting drawings published by V. V. Volkov. This method will be indispensable for the future study of stag stones.

Plates XIII – XX are the results of our documentation work, in which Tanaka Yuko, Hatakeyama Tei and Isaka Ryoko participated, in addition to Matsubara Ryuji.

Another work is the three-dimensional measurement of the stag stones carried out by Dr. Tsukamoto. This Digital Archive, or three-dimensional documentation of the present condition of stag stones would be important as this site becomes famous and more tourists visit the site, enhancing the possibility of damaging stag stones. Dr. Tsukamoto also measured the horse skull unearthed from the Stone Heap No. 2 near Stag Stone No. 7.

11. Tentative Conclusions

We will mention briefly the results of our research in Ulaan Uushig I.

First it was established by the finds of stone cist in Kherek-sur No.1 and of the child's bones in Kherek-sur No. 12 that kherek-surs are fundamentally tombs. However, in case of Kherek-sur No. 1 we did not find bones, the reasons remains unclear. The Kherek-sur might be a symbolic tomb where human body could not be interred by some reason, or small animals, such as talbagans, have eaten all the bones.

The same ritual of horse sacrifice was conducted in the stone heaps of Kherek-sur on one hand, and stone circles and heaps around stag stones on the other. The muzzles of the horse heads were always placed toward the east, the neck bones on their north or south side, often accompanied by hoofs. This agreement in details cannot be a coincidence and these horse burials from the two different kinds of remains must represent one and the same ritual. That means the kherek-surs and the stag stones were constructed in about the same period by the same people. Very similar ritual of horses was also found at Nizhnii Burgultai in Zabaikal'e (Данилов 1995).

The structure of the stone heaps and circles, constructed near kherek-surs and stag stones, is also very similar each other. Small stones are often seen at the base of these structures.

Our excavation threw much light on the construction process of the kherek-surs. In case of

Khereksur No. 1, they made the stone cist first and then attached stones around it, not placing the stones layer by layer from underneath. We do not think the edge circle of the central mound was first placed, because it would hinder the construction work very much. However the edge circle was probably planned at the beginning and the edge stones were placed at some stage of the construction.

Also in case of Khereksur No. 12, they made the stone cist first and then attached stones around it but they did not place the edge stones specially. This difference is probably because of the small size of the khereksur. We consider that the construction method depended on the size of the khereksur, and other methods would have been used for larger khereksurs.

The discovery of a stag stone at the edge of the central mound of the Khereksur No.1 presented us a problem concerning the classification and the date of stag stones. It belongs to the “common Eurasian type” with only circles on unpolished crude surface, a different type from those located in the South Area of the site, which are of the “Mongol-Zabaikal’e type” with characteristic stags. Since the stag stone found at Khereksur No. 1 undoubtedly accompanied the khereksur, if we follow the above conclusion, the stag stones of different types are to be contemporaneous. This problem is still open to discussion.

Slab Grave No. 1 is located at the place where the eastern part of the stone pavement of Khereksur No. 4 should be extended. It means that the slab grave destructed the part of the pavement or the slab grave was constructed after the part of the pavement was demolished. Pottery fragments of Slab Grave culture were found in the Central mound of the Khereksur No. 1, meaning that they were put on the top of the existing mound. These evidences both seem to support the idea that khereksurs are earlier than the slab grave here. However, since the pottery of Khereksur people is not known yet, we cannot deny the possibility that the pottery fragments might belong to Khereksur people.

We found nine stone heaps in the Extended Area near Stag Stone No. 7. At present many stones or stone circles are seen on the ground at our site, distributed in abundance particularly around the two rows of stag stones (Nos.1-3, 4-14) from north to south. Basing on the result of the excavation of the Extended Area, we surmise that those stones represent the part of stone heaps constructed along the rows of stag stones, as were known at Zhargalant in Arkhangai aimag.

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Appendix 1. Equid burials at Ulaan Uushig I excavated in 1999

By Dr. H. Hongo

Equid remains were found from 5 localities (Stone Heaps 10, 12, 17, 18, and 20) in the North Area and from 5 localities (Stone Circles 3,5,6,7,and Pit 8) in the South Area. Although there are a few other localities, both in the North and the South Areas, where fragments of calcined bones were scattered, this report deals only with the horse burials.

General Observations

Horse bones are placed inside the stone circles. A complete “set” consists of the skull and mandible, a row of cervical vertebrae, and the third phalanges. In one case (Stone Heap No. 12), a caudal vertebra was also found. Only one individual is buried in each stone structure. Usually, however, some of the bones are either broken or missing. In many cases, the skull was broken and only the maxilla was found. In all the burials, the articulated maxilla and mandible are placed with the nose pointing to the east. The atlas is usually found near the occipital, suggesting that the neck was cut between the atlas and axis and the atlas was still articulated to the skull when the head was buried. The axis and 4 or 5 articulated cervical vertebrae are laid on the south side of the head in the east-west direction, with the cranial side pointing to the east. The neck was probably skinned and the meat was taken out before the burial, but the cervical vertebrae were still articulated when they were placed, because the vertebrae row is straight and all the pieces are found on the same level as the mandible. Third phalanges and sesamoids, with the anterior side pointing to the east, are usually found under the vertebrae and the head.

At least three specimens (Stone Heaps Nos. 10,17,20) are juvenile. From the state of eruption of teeth (all the deciduous teeth are present and M1 just erupting), all three were about the same age when they were killed, which suggests that the ritual of burying horse took place at a certain time of the year.

In the stone heaps, horse bones are covered with rocks. In the stone circles I in the South Area, horse bones are covered with smaller stones.

North Area

Stone Heap No. 10

Alveolar part of mandibles, the right maxilla, and a complete upper incisor area of a juvenile horse were found. All the incisors are deciduous teeth. The mandible and the maxilla have deciduous premolars (dp2-dp4). The first molars are formed and just beginning to erupt.

Stone Heap No. 12

Alveolar part of mandibles of an adult horse was found. All the cheek teeth (P2-M3) are present and in wear. Left (permanent) incisors are also present. The atlas was found under the mandible. A row of four articulated cervical vertebrae are placed on the south side of the mandible. Two fragments of the third phalanges and a caudal vertebrae are found near the mandible.

Stone Heap No. 17

Alveolar parts of the mandibles of a juvenile horse are found. Deciduous premolars (dp2-dp4) are present. The M1 are beginning to erupt.

Stone Heap No. 18

Almost complete mandibles, alveolar area of the left maxilla, and the premaxilla of an adult horse are found. All the incisors (both upper and lower), and complete cheek tooth row (P2-M3) are present and in wear.

Cervical vertebrae (Atlas-6th) are placed on the south side of the mandibles. Also, three third phalanges are found.

Stone Heap No. 20

Mandibles and maxilla of a juvenile horse are found. All the incisors and the cheek teeth (dp2-4) are present. M1 is just beginning to erupt. A row of five cervical vertebrae is found on the south side of the mandible, but the atlas and the axis are missing.

South Area

Stone Circle No.5 (Grid S-7, W-5)

A well-preserved skull and mandibles are placed in a shallow pit, with the nose pointing to the east. The brain case of the skull is broken. This is an adult horse, with all the permanent incisors, lower canines, and cheek teeth (P2-M3) are present and in wear. Since the canines are present, it is probably a male. A row of cervical vertebrae (axis-8th) is placed on the south side of the skull, with the cranial side pointing to the east. An atlas is found upside down near the occipital of the skull. Fine, repeated cut marks are found on the ventral side of the atlas near the cranial articular facets. Four third phalanges with sesamoids are placed on the four corners the mandibles (two on both sides of incisor area, and the other two on both sides of the heels). Two of the third phalanges on the right side (south side) of the mandible are placed directly under the cervical vertebrae. The anterior hoofs are placed on the eastern side, and the posterior hoofs on the western side, with the anterior side facing to the east.

This burial thus contains almost complete “set” *in situ*. It looks that a shallow pit (c. 15 centimeters deep) was dug first, then the horse head (the skull and the mandibles articulated), phalanges, and the cervical vertebrae row were placed in the pit. Large stones are placed around the pit, forming a stone circle.

Stone Circle No. 6

A broken skull of horse is exposed in this structure. The articular process of the left mandible is also visible. The anterior half of the skull and mandibles are, however, buried under rocks. It was decided that the bones are not dug out this year and buried again.

Stone Circle No.7

Parietal and nasal area of a horse are exposed. It is probably a juvenile individual. It was decided that the bones are not dug out this year and buried again.

Pit No.8

A row of cervical vertebrae (axis-7th), an atlas, and three third phalanges are found on the western side of the Stone Circle No.5. Two of the third phalanges (an anterior and a posterior) are found under the cervical vertebrae. The atlas is found on the south side of the other cervical vertebrae, and

another third phalanx is found on the eastern side of the atlas. If the atlas was originally articulated to a skull, this burial is exceptional with the vertebrae row placed on the north side of the head.

Appendix 2. Observations on bones from Ulaan Uushig I in 2005

By Dr. D. Tümen

Professor of the National University of Mongolia

Bones from Kherek-sur No. 12

From the stone cist, August 26th

1. Fragment of animal mandible with two teeth
2. Fragment of left ulna of child of 5-6 years old
3. Right radius of child of 5-6 years old
4. Right ulna of child of 5-6 years old
5. Fragment of Glenoid cavity of left scapula of child of 5-6 years old
6. Ilium's fragment of hip bone of child of 5-6 years old
7. Left femur of child of 5-6 years old
8. Right tibia condyles of child of 5-6 years old
9. Left 11th rib of child of 5-6 years old
10. Right femur of child of 5-6 years old
11. Fragment diaphysis of tibial bone and 1st thoracic vertebrae of child of 5-6 years old
12. Left fibula of child of 5-6 years old
13. Small fragment condyles of left tibia of child of 5-6 years old
14. Fragment of left tibia of child of 5-6 years old
15. Burned head of left humerus of child of 5-6 years old
16. Left 8th rib of child of 5-6 years old

From other places between the stones

August 26th

1. Fragment of mandible and rib of sheep or goat
2. Four femurs and a mandible, a tibia (maybe marmot's) and two femurs of very small rodent
3. Fragment of hip bone, vertebrae and two ribs

August 25th

1. 1,2,3 first row or proximal phalanges (toe) of the foot and burned 3rd or 4th thoracic vertebrae of child of 5-6 years old
2. Burned very small bones (probably child's burned head bone pieces)
3. Rib's fragment of sheep
4. Fragments of burned bones (maybe from child's skull)

August 24th

1. Burned lumbar vertebrae body and two pieces of rib or ribs
2. 4 tibia and 1 femur bones of small wild animal (maybe marmot?)
3. Rib's fragment of sheep or goat?
4. Fragment of sheep or goat's glenoid cavity

August 23rd

1. Very small bone pieces, not possible to define

August 19th

1. Mandible (1 piece), tibia 2, femur 3, humer 2 of rodents (2-3 individuals) and fragment of femur or humer bone of animal (not possible to define species)
2. Burned bone pieces (small fragment of skull and glenoid cavity of scapula)
3. Burned bone pieces of skull and burned lumbar vertebrae. body of child of 5-6 years old

August 17th

1. Fragment of right cheek or malar bone of child of 5-6 years old
2. Burned two bones of skull
3. Two femurs and tibia, fibula bone of marmot?

August 16th

1. Long bone fragment of large animal and long bones of two rodent individuals

August 15th

1. Sheep right ankle bone and tibia fragment
2. Right part of mandible of very small rodent
3. Two femurs, two tibia of marmot
4. Long bones (femur, tibia, humerus of 4-5 individuals of rodent)
5. Small fragment of long bone sheep or goat
6. Long bone fragments of large animal
7. Sheep left ankle bone

August 12th

1. Sheep or goat's tooth

August 11th

1. Four teeth of sheep or goat

Undated

1. Fragment of left mandible of sheep or goat
2. Many small fragments of long bones of sheep or goat

Bones from Slab Grave No. 1

There was found uncompleted skeleton of male individual 50-55 years of age.

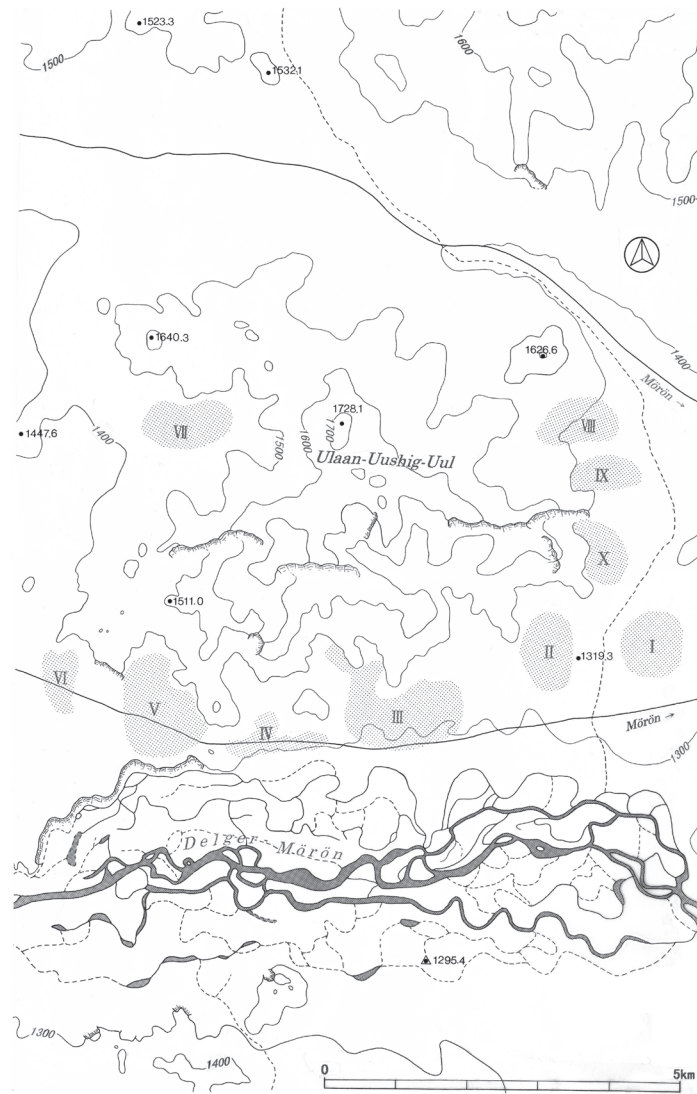
Skull without mandible, all long bones, most of them were uncompleted.

Most of teeth were fallen when the person was alive.

Body height is 161.03 cm (by Trotter and Glaser formula). Very clear

Pathology on the 4th and 5th lumbar vertebrae and promontory's side was defined.

Apart from the human bones, a long bone fragment of a large animal was found on August 22nd.

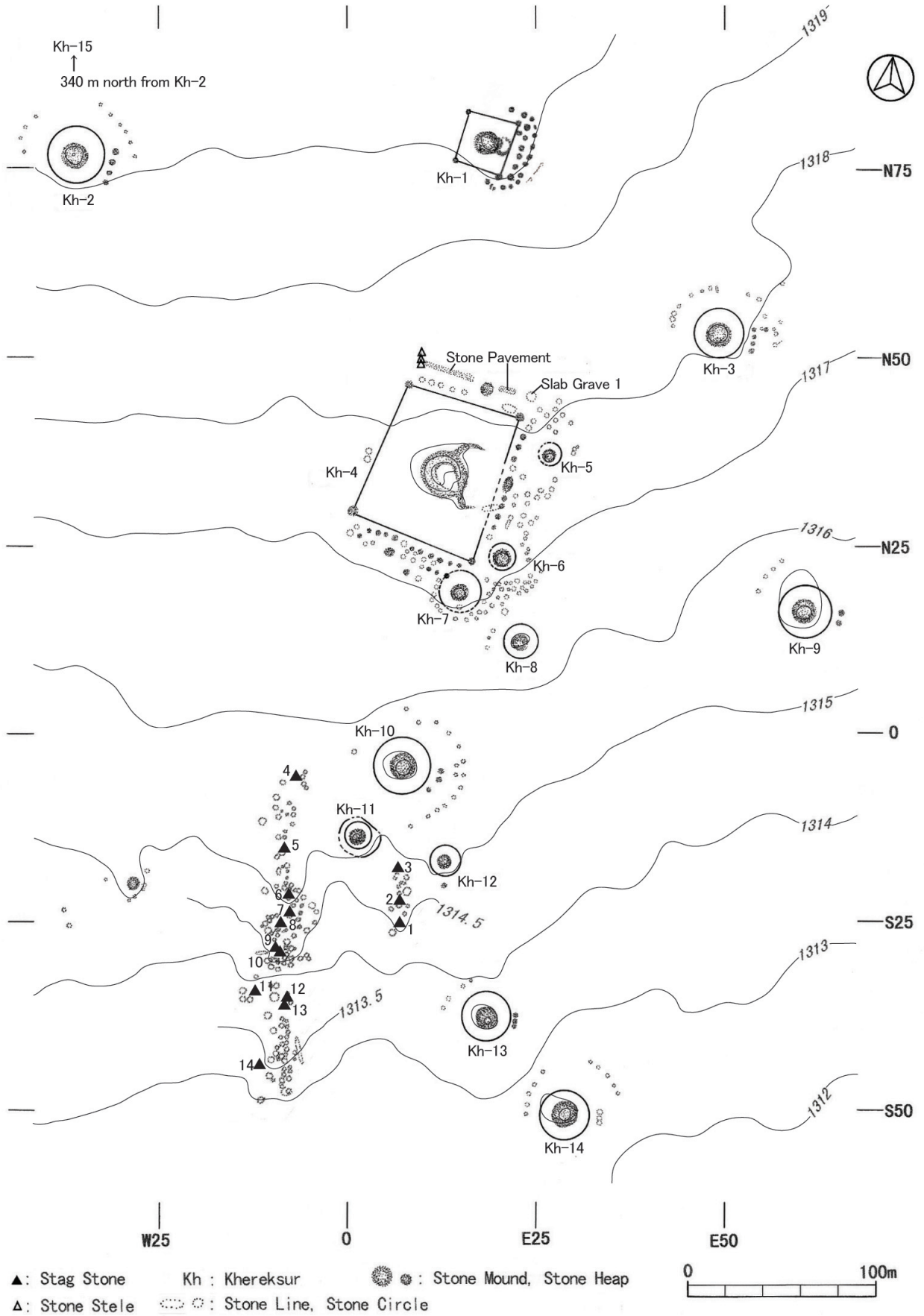


1. Archaeological remains around Mt. Ulaan Uushig



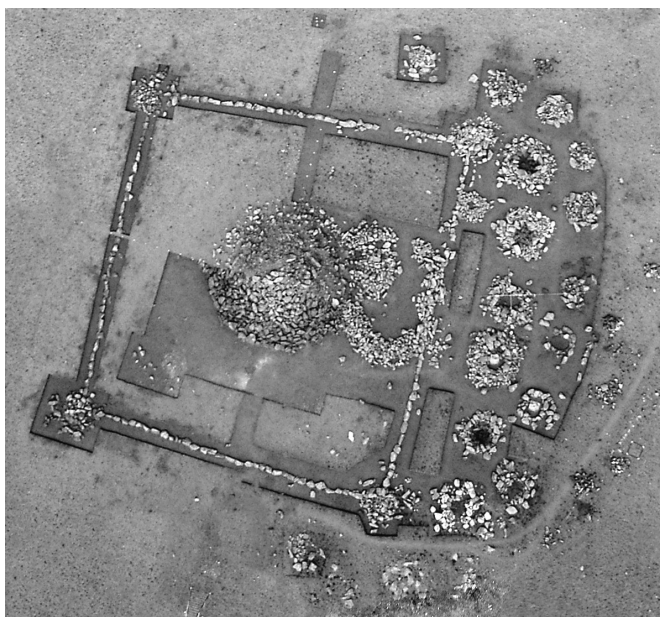
2. Ulaan Uushig I seen from the south

Pl. 1

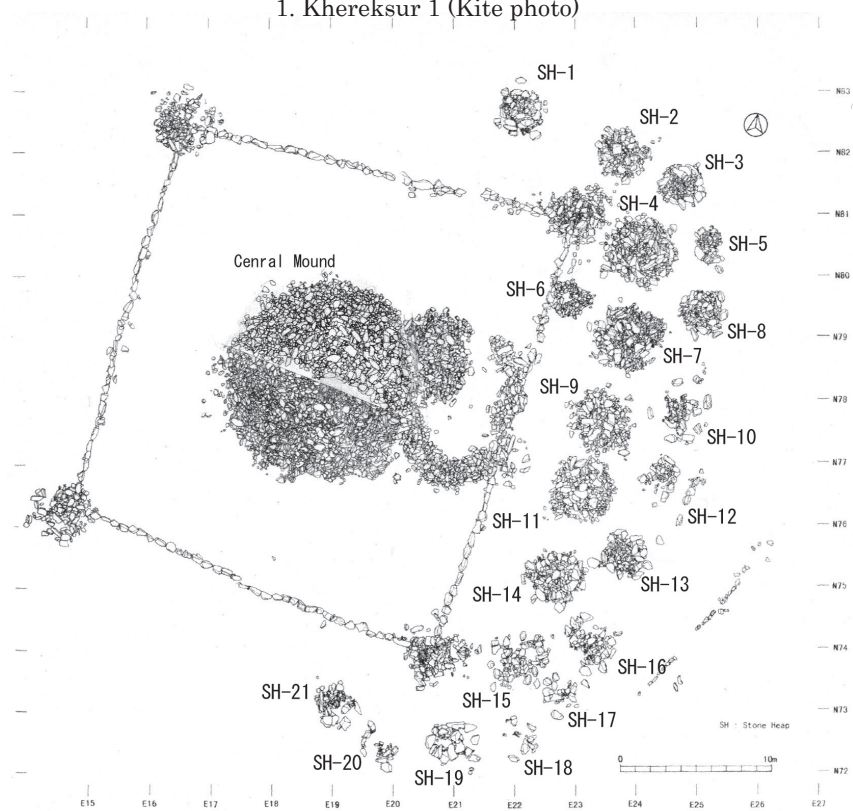


Ulaan Uushig I

PI. 2



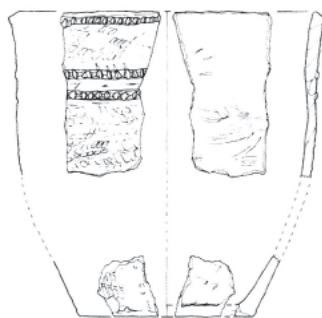
1. Khereksur 1 (Kite photo)



2. Khereksur1



3. Stag stone found at the edge of the central mound

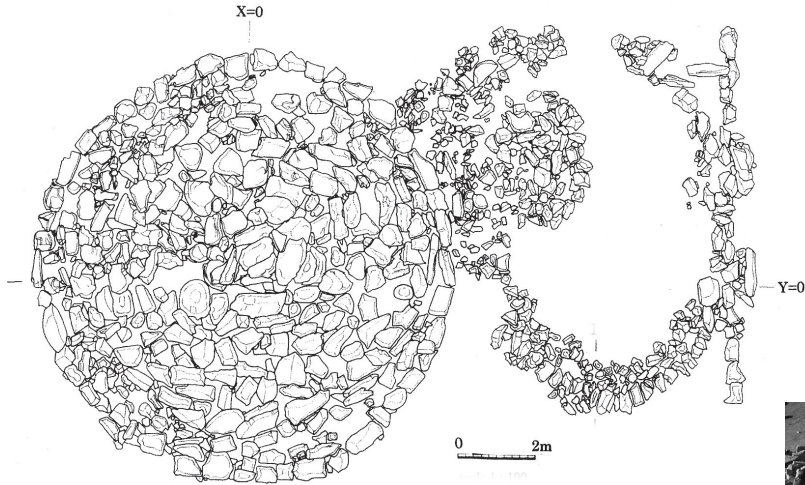


4. Pottery fragments found in the central mound (1/6)

Pl. 3



1. East - West cross section of the central mound



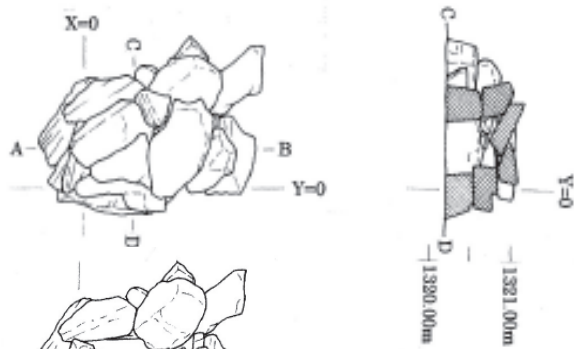
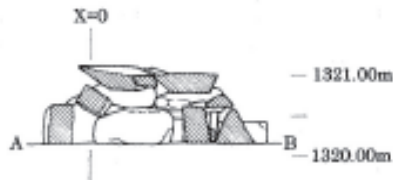
2. Central mound with protrusions



3. First layer stones of the southern part



4. First layer stones of the northern part, with the cist in the center



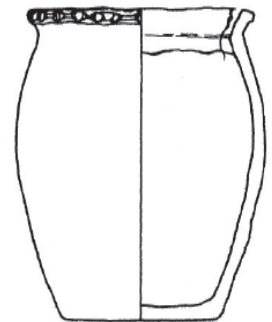
5. Stone cist (1/100)



6. Bead

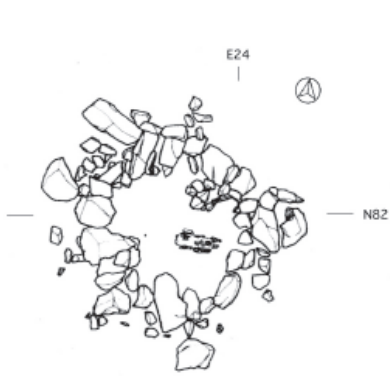


7. Iron plates



8. Pottery vessel (1/4)

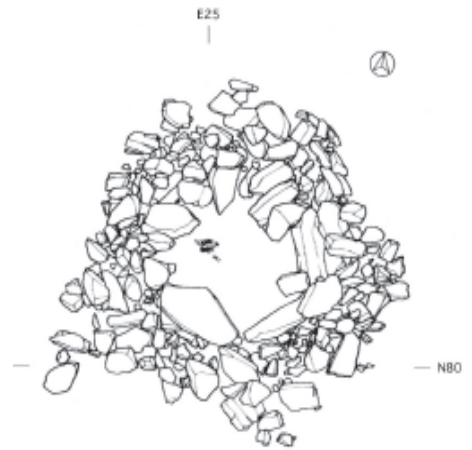
Pl. 4



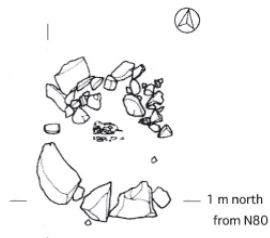
1. Stone Heap No.2



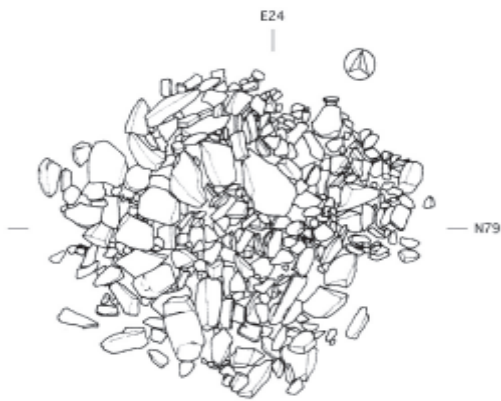
2. Stone Heap No.3



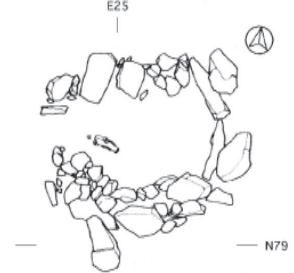
3. Stone Heap No.4



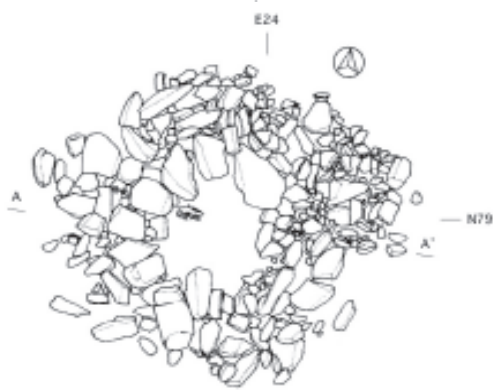
4. Stone Heap No.5



5. Stone Heap No.7



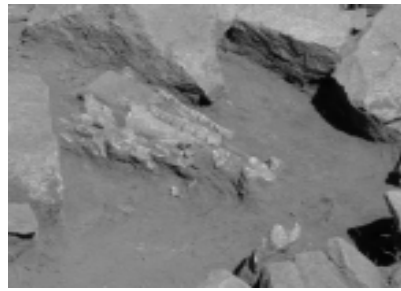
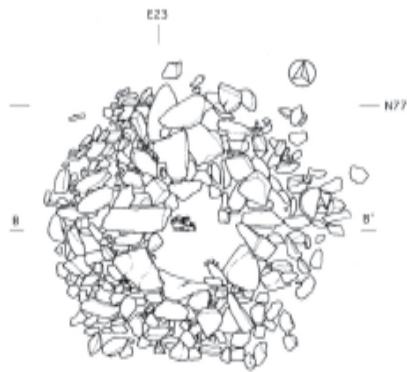
6. Stone Heap No.8



7. Stone Heap No.9



8. Horse skull from Stone Heap No.10 seen from the north



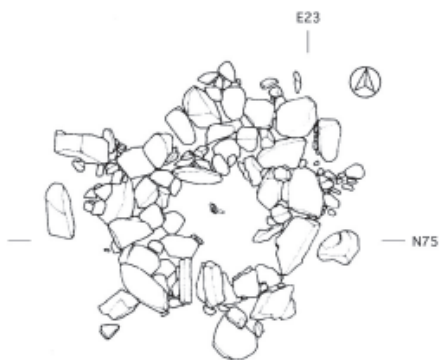
2. Horse skull and neck bones from Stone Heap No.12



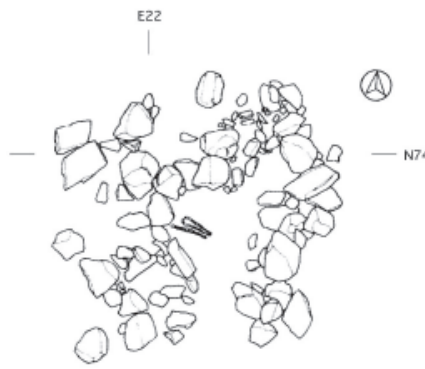
1. Stone Heap No.11



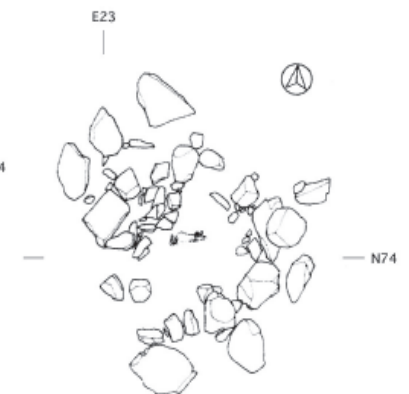
3. Stone Heap No.13



4. Stone Heap No.14



5. Stone Heap No.15



6. Stone Heap No.16



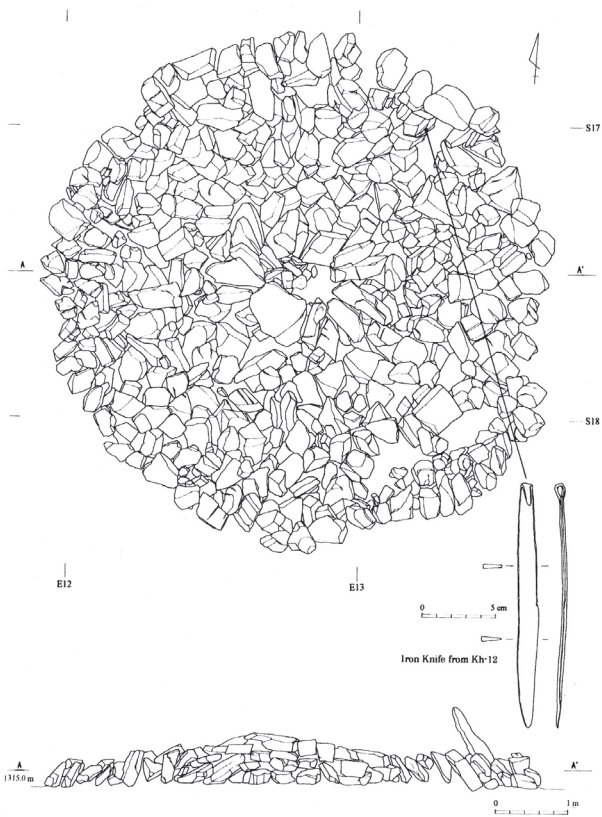
7. Horse skull from Stone Heap No.17 seen from the northeast



8. Horse skull and neck bones from Stone Heap No.18 seen from the south



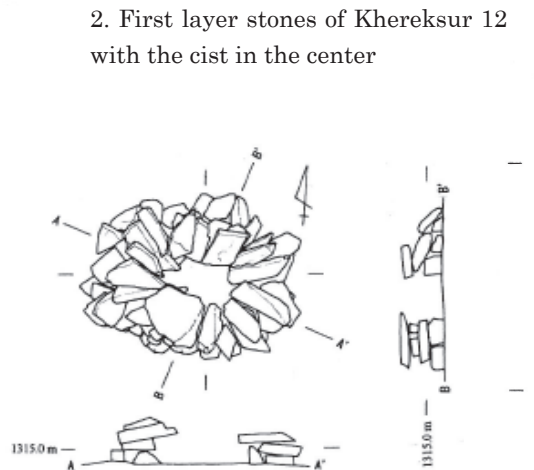
1. Khereksur 12 seen from the north



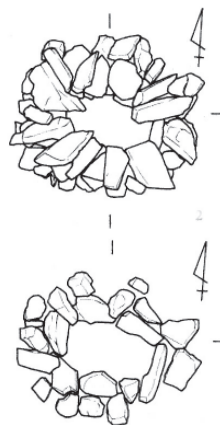
2. First layer stones of Khereksur 12 with the cist in the center



3. First layer stones of Khereksur 12 with the cist in the center



4. Stone cist (1/100)



5. Bones found in the cist



6. Core part of the small stone heap to the south

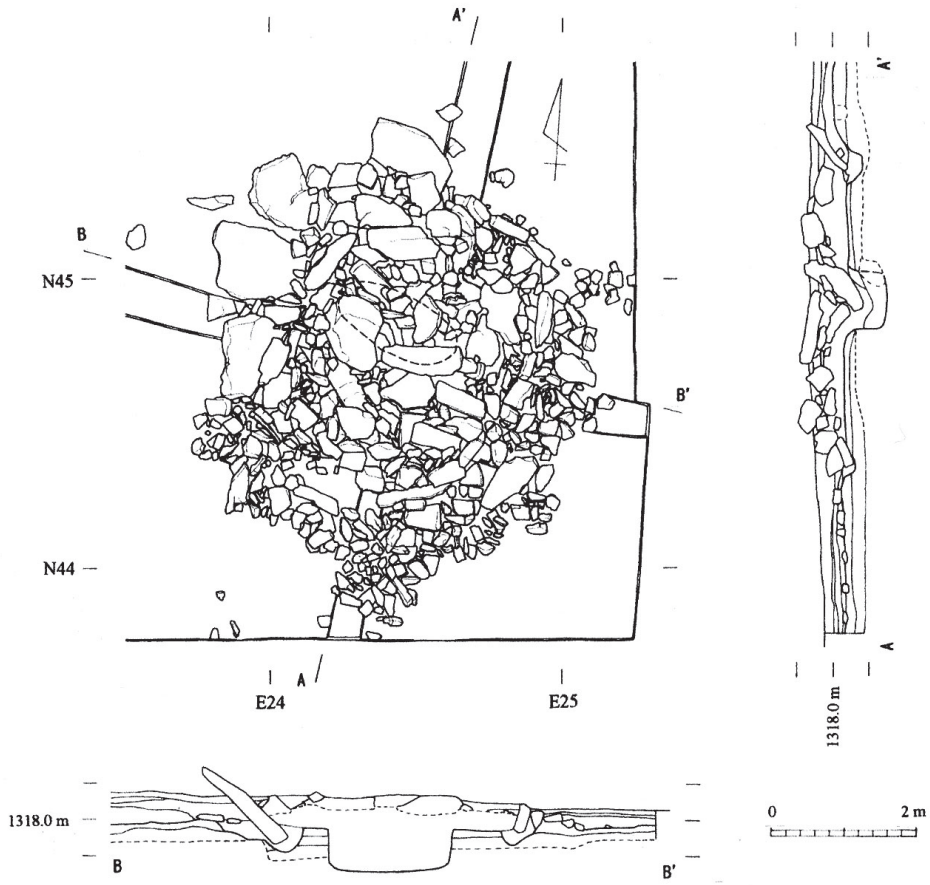
Pl. 7



1. Slab Grave 1 seen from the east



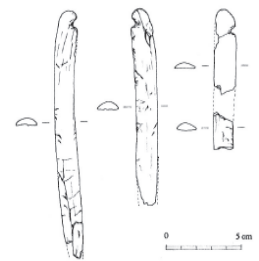
2. Slab Grave 1 seen from the west



3. Slab Grave 1



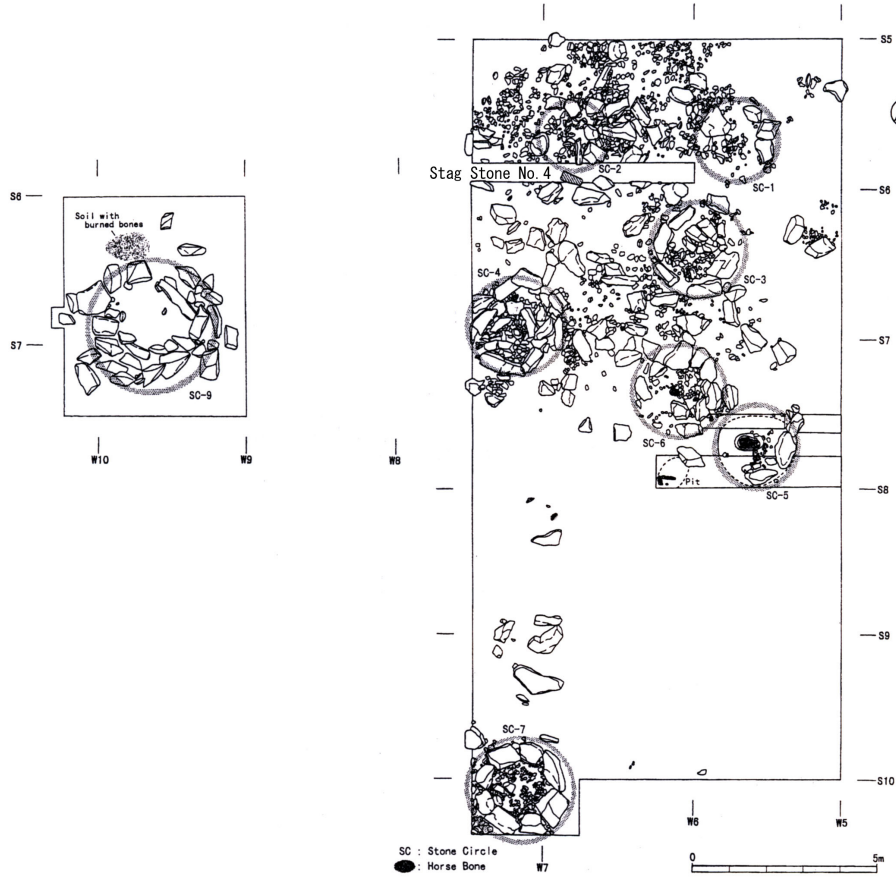
4. Burial pit of the Slab Grave 1



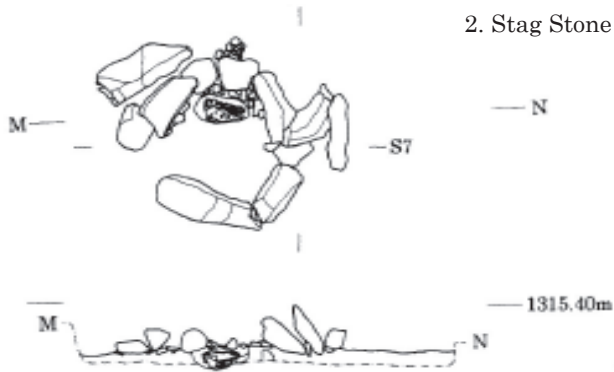
5. Bow fittings found in the pit



1. Stag Stone No. 4 Area seen from the east



2. Stag Stone No. 4 Area



3. Stone Circle No. 4 (drawing 1/100)

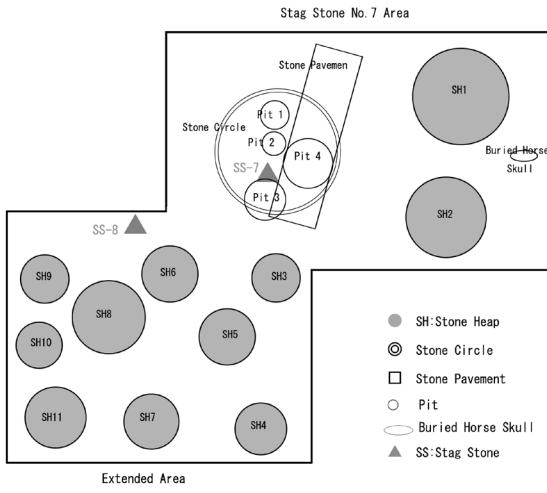


4. Horse skull and neck bones from Stone Circle No. 5 seen from the south



5. Horse skull and neck bones from Stone Circle No. 7 seen from the north

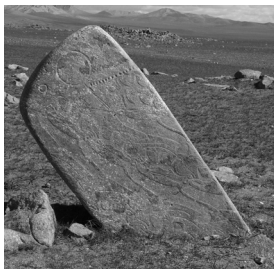




1. Stag Stone No.7 Area and the Extended Area



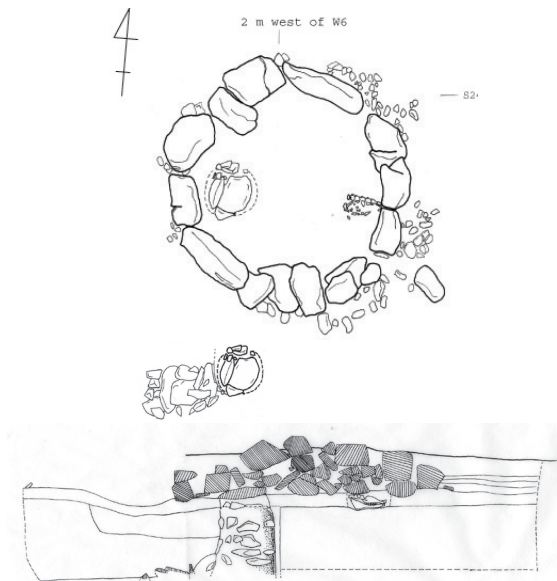
2. Stag Stone No. 7 Area and the Extended Area seen from the northeast



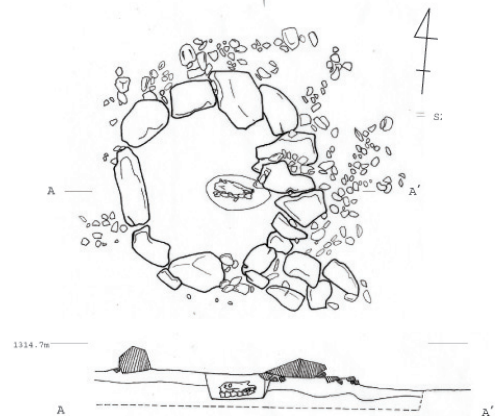
3. Stag Stone No. 7 before excavation, seen from the south



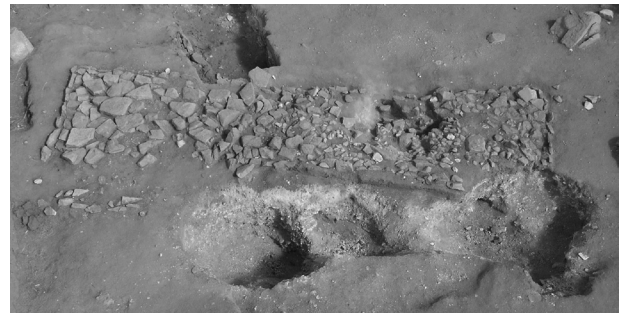
4. Stag Stone No. 7 Area



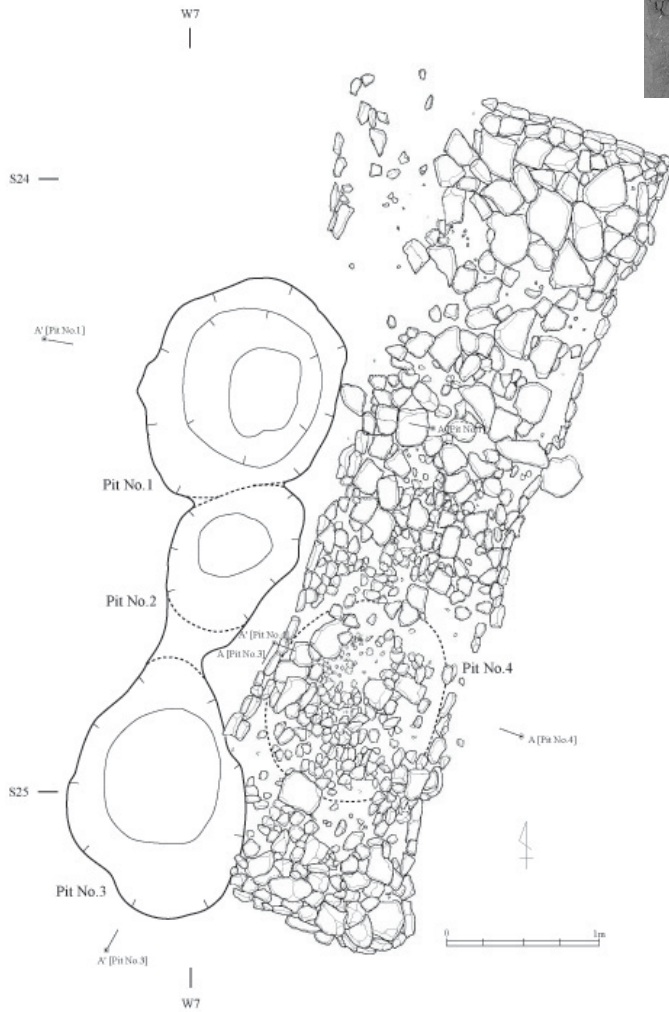
5. Stone Heap No. 1



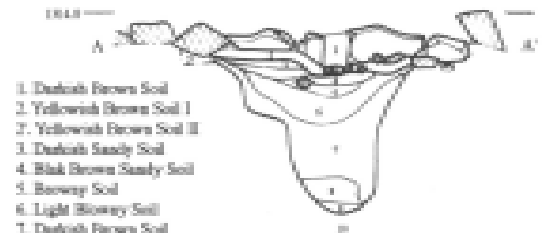
6. Stone Heap No. 2



1. Stone pavement and Pits 1-3 seen from the west



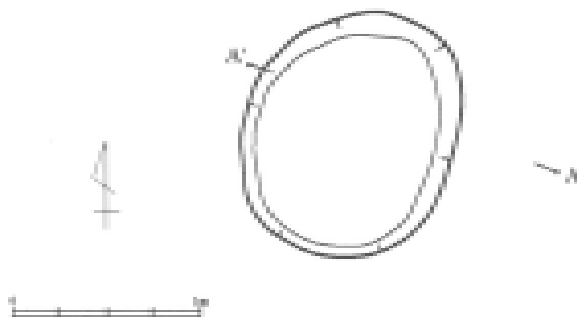
2. Stone pavement and Pits



3. Cross-section of Pit 1

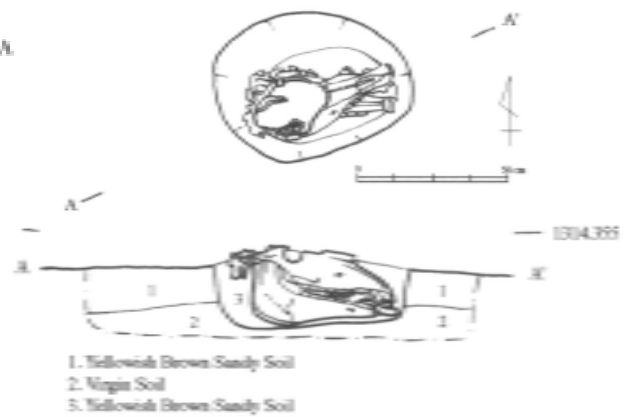


4. Pit 3



1. Darkish Brown Soil
2. Yellowish Brown Soil
3. Greyish Yellow Sandy Soil
4. Black Brown Gravel
5. Greyish Brown Gravel
6. Black Sandy Soil (Disturbance)
7. Virgin Soil

5. Pit 4



6. Buried horse skull

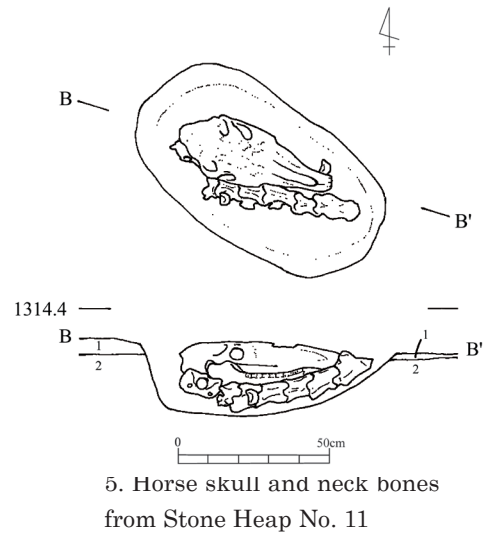
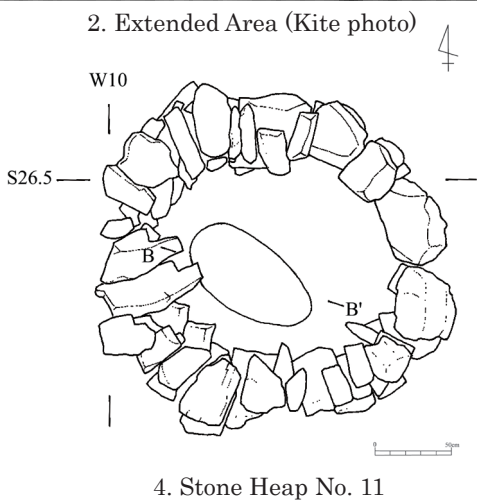
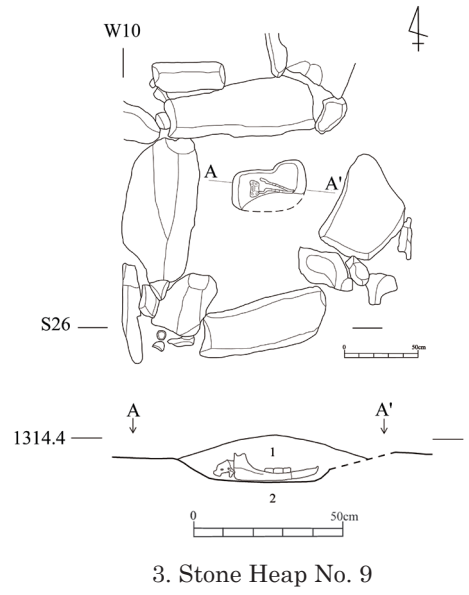
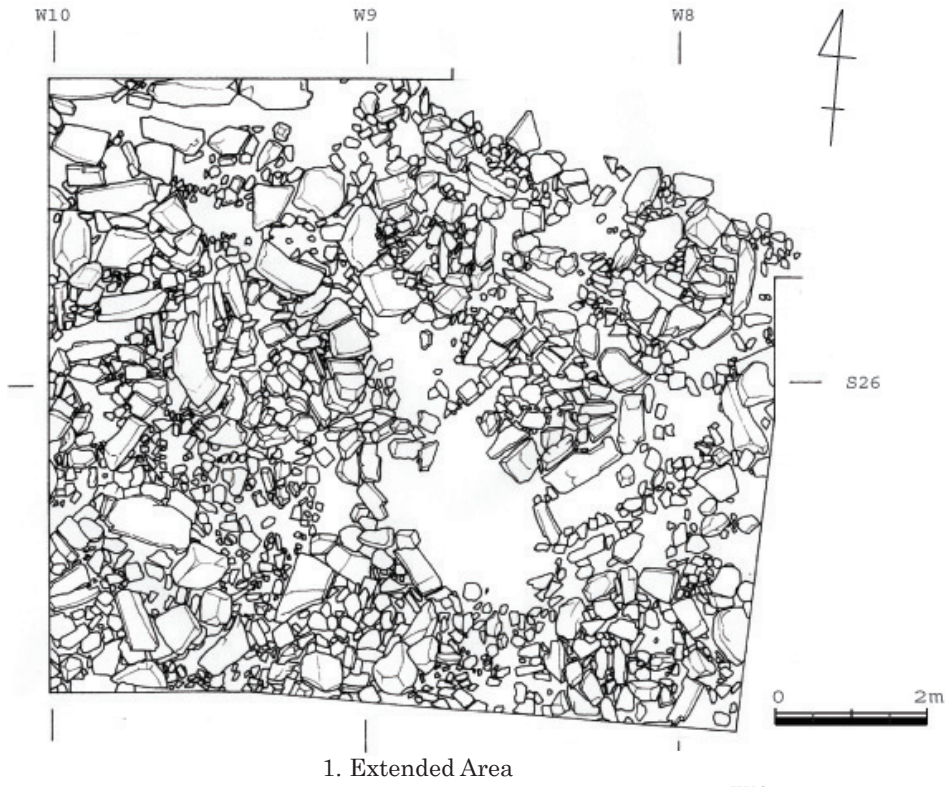




Photo seen from the south

1. Stag Stone No. 1

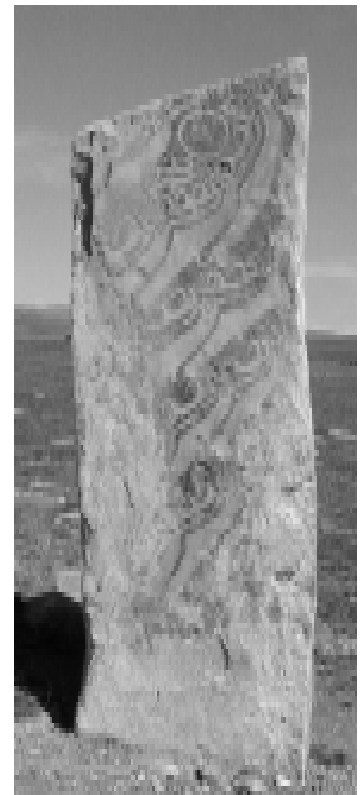
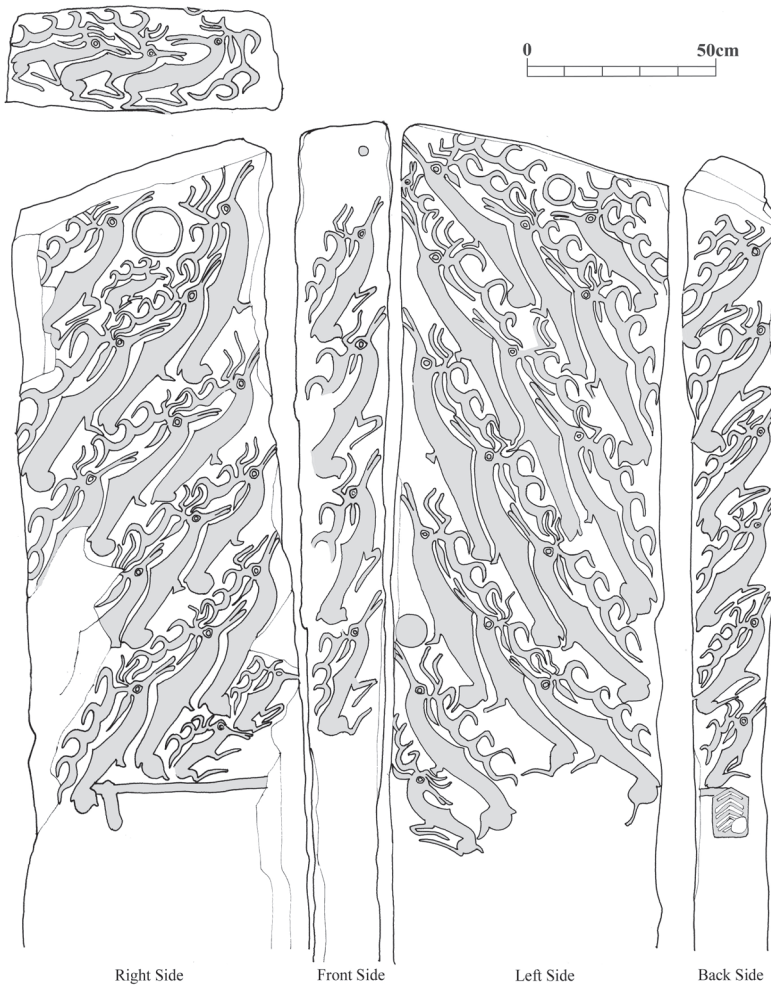


Photo seen from the south

2. Stag Stone No. 2

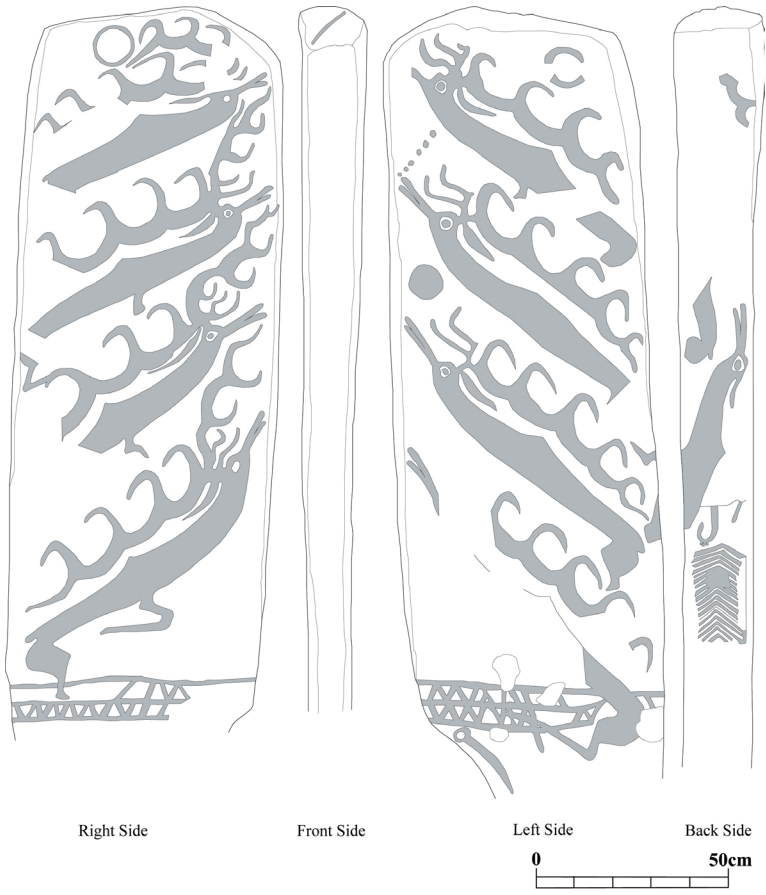


Photo seen from the north

1. Stag Stone No. 3

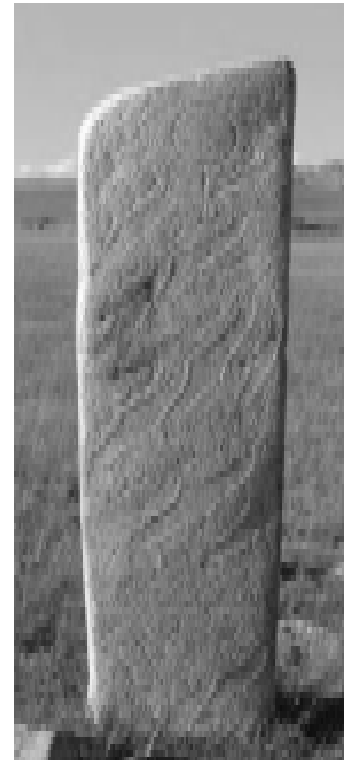
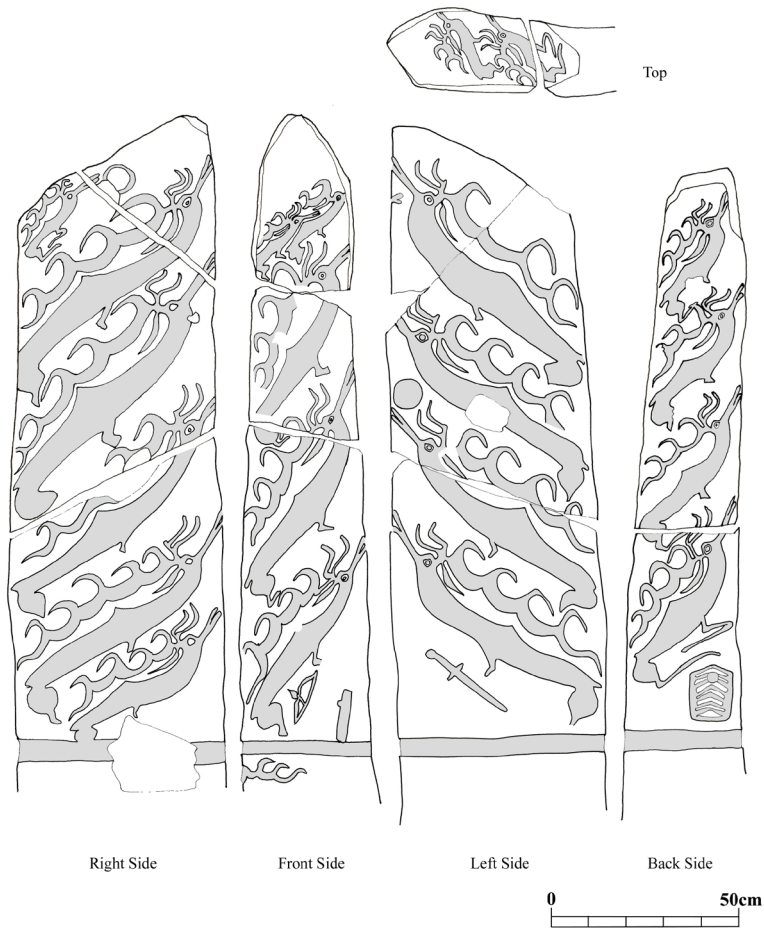
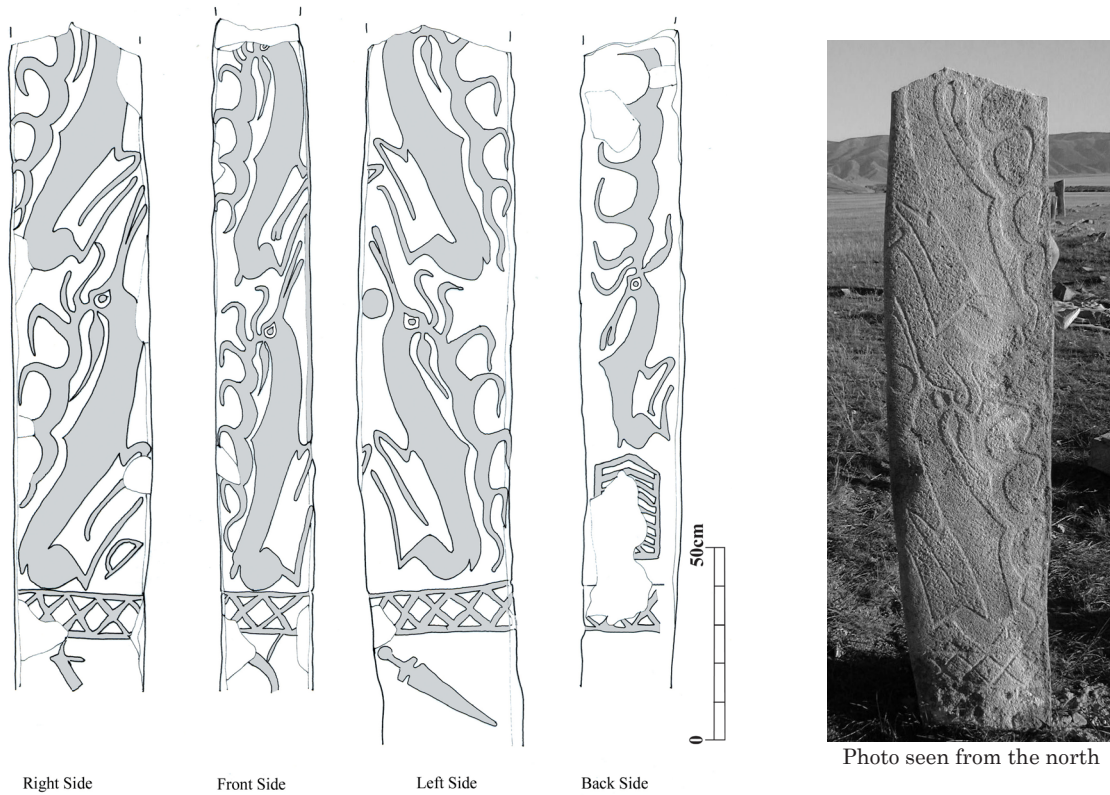


Photo seen from the south

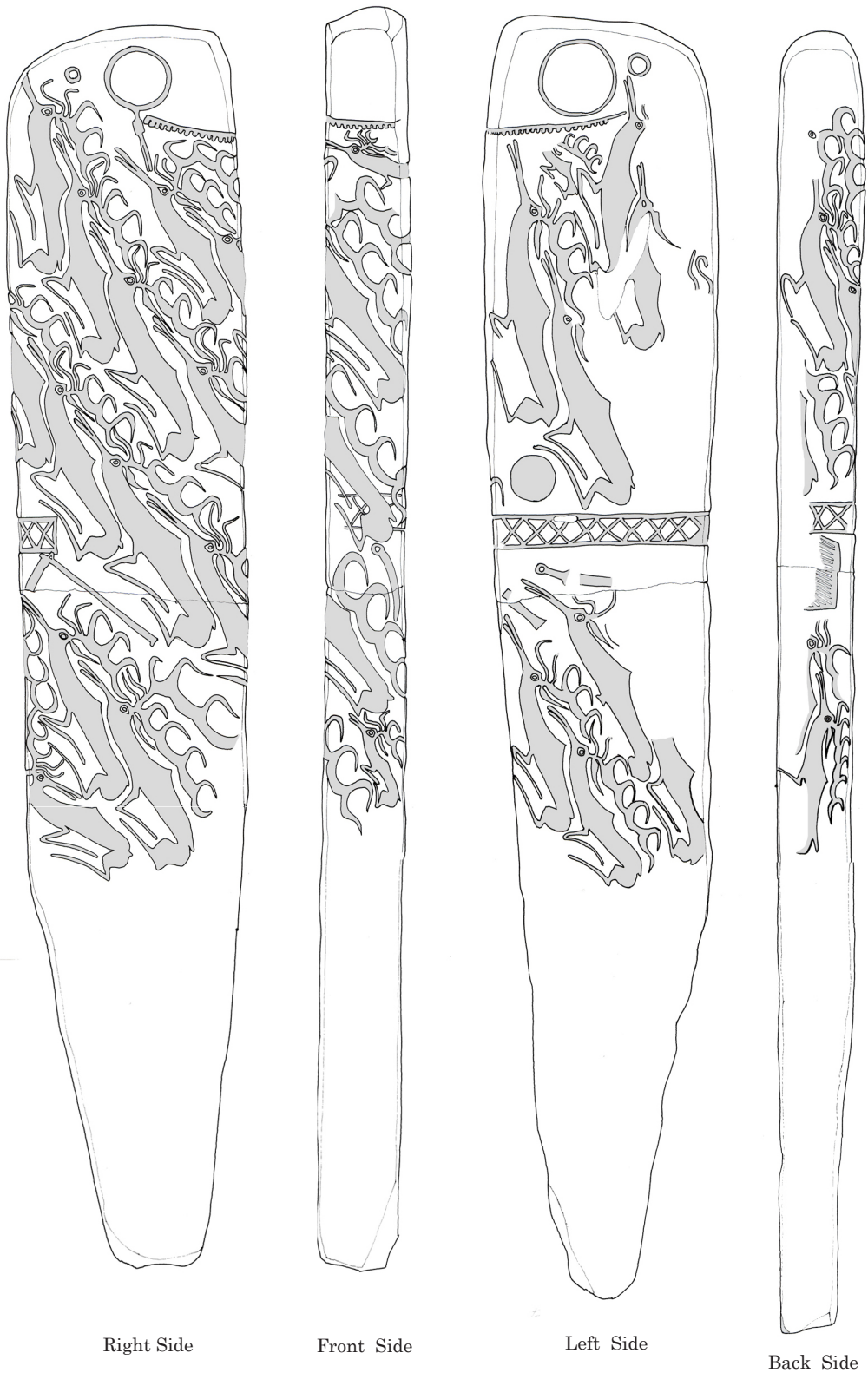
2. Stag Stone No.4



1. Stag Stone No. 5



2. Stag Stone No. 6



Stag Stone No. 7

PI. 16



Right Side Front Side Left Side Back Side

1. Stag Stone No. 8

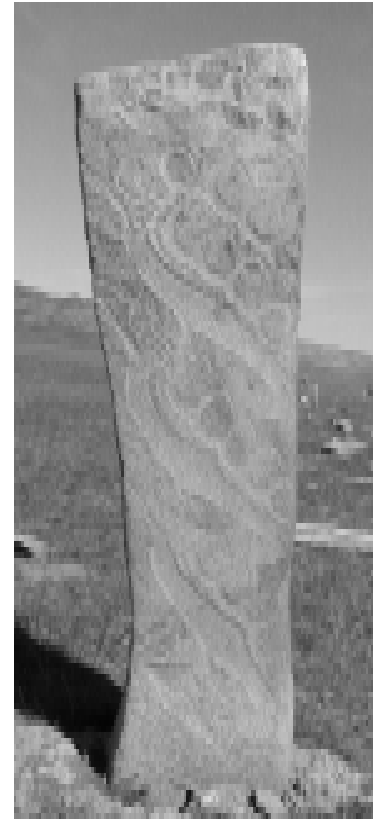
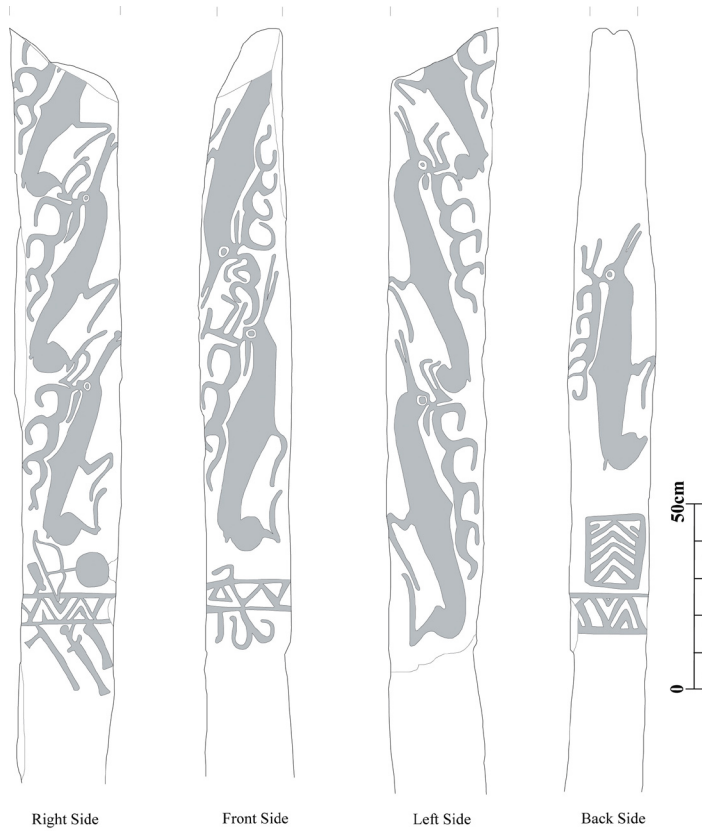


Photo seen from the south



Right Side Front Side Left Side Back Side

2. Stag Stone No. 9



Photo seen from the south

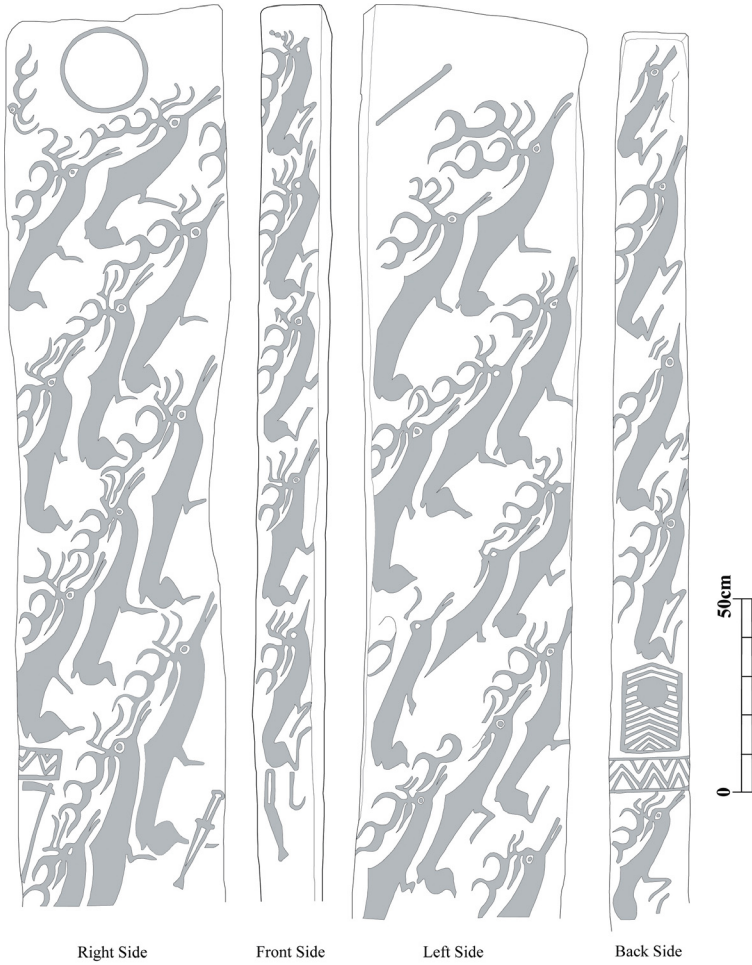
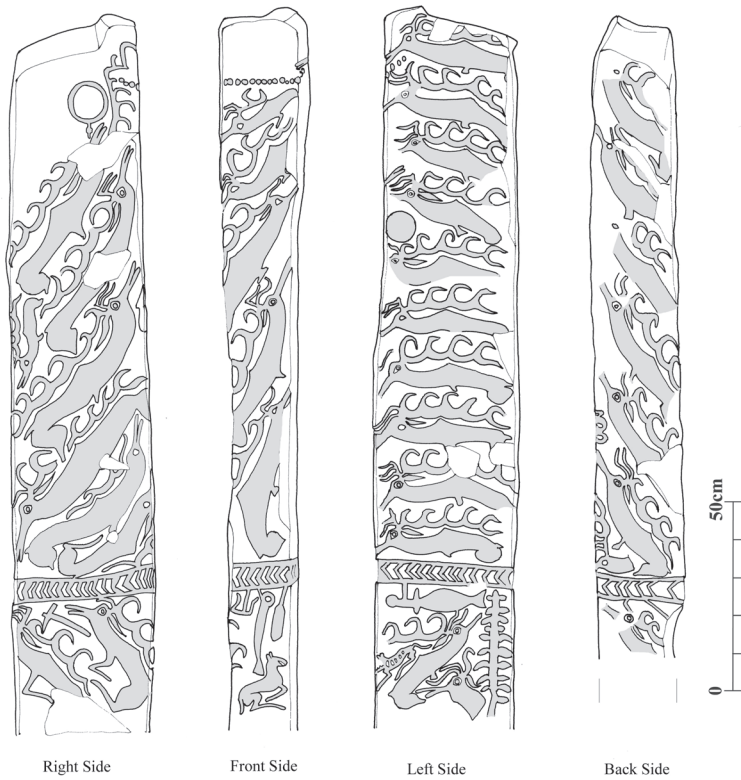


Photo seen from the south

1. Stag Stone No. 10



2. Stag Stone No. 11



Photo seen from the south

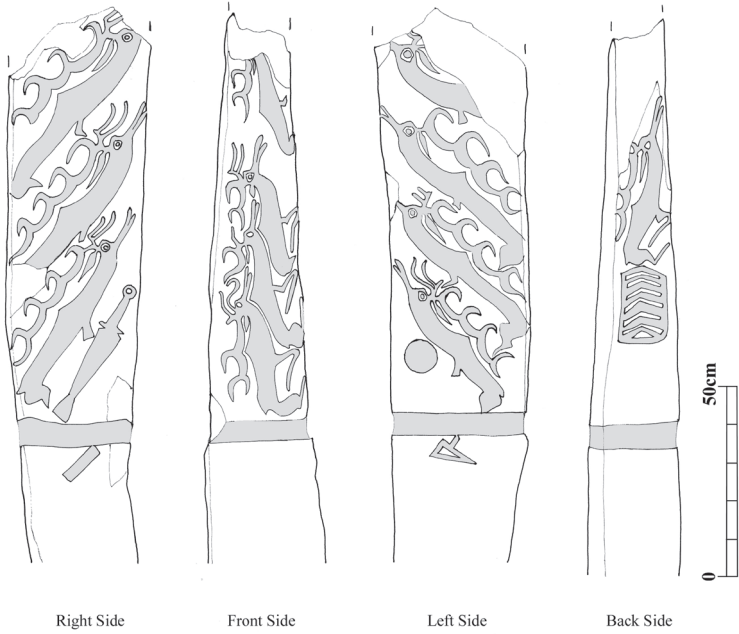


Photo seen from the north

1. Stag Stone No. 12



Photo seen from the south

2. Stag Stone No. 13

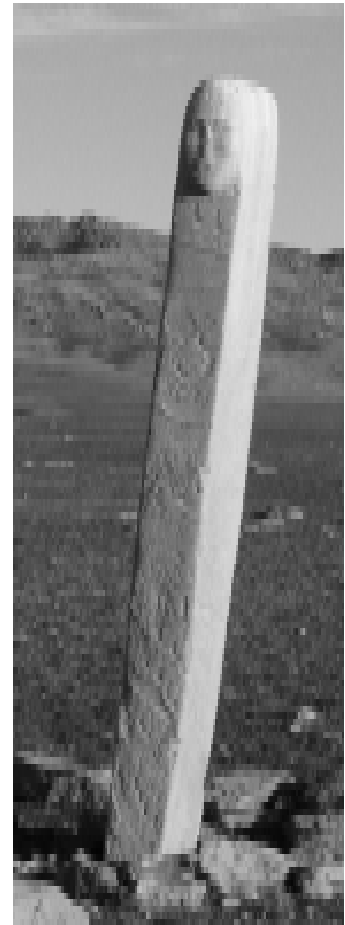
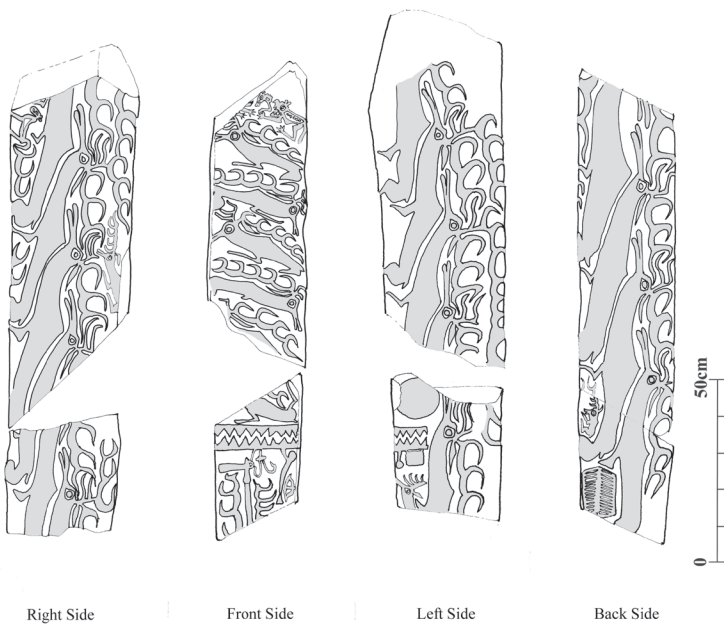


Photo seen from the southeast

1. Stag Stone No. 14



2. Stag Stone No. 15



3. Fragment of stag stone



4. Fragment of stag stone



5. Fragment of stag stone