

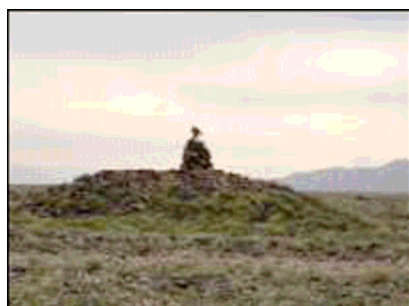
**INSTITUTE OF ARCHAEOLOGY
MONGOLIAN ACADEMY
OF SCIENCES
REPUBLIC OF MONGOLIA
(MAS-IA)**



**INSTITUTE OF APPLIED GEOLOGY
NATIONAL RESEARCH COUNCIL
OF ITALY
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(CNR-IRPI)**



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**A REPORT OF THE FIELDWORK CONDUCTED IN 2006 BY THE JOINT
MONGOLIAN-ITALIAN EXPEDITION “GOBI GEOARCHAEOLOGY”**

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Jamiyan-Ombo Gantulga

2006
ULAANBAATAR

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Ulaanbaatar

April 04th 2006

**Guidance to the 2006 excavation near the Lake Orog Nuur
in the area of Bogd Sum of Bayankhongor Aimag to be conducted
in the framework of the CNR-MAS geoarchaeological project**

Objective of the 2006 expedition

The main objective of the project is to verify the results of the 2005 fieldwork by choosing for excavation some tombs from the necropolis situated on the western bank of Orog Nuur in the area of Bogd Sum, Bayankhongor Aimag.

Previous works

As a result of the 2002 survey in gobi-region of the southern Mongolia, a crew of the joint Mongolian-Italian "Gobi-geoarchaeology" expedition took proper measurement of the great necropolis on the western bank of Lake Orog Nuur in Bogd Sum, Bayankhongor Aimag, and chose one of the Bronze age kirgiskegürs for excavation in the year 2003. The ring stone-mound or kirgiskegür was dating back Bronze age. That the human burial was revealed in that kirgiskegür is highly significant for archaeology.

In 2004, the new crew of the above-mentioned expedition continued to extend the geoarchaeological survey along the Valley of Lakes between Kholboolj Nuur/Bööntsagaan Nuur/Mt. Talyn Uul in the area of Baatsagaan Sum, Bayankhongor Aimag, to the west, Bayanzag in the area of Bulgan Sum, Ömnögobi Aimag, to the east, and Tevsh Uul in the area of Bogd Sum, Övörkhangai Aimag, to the north. They carried out a survey and measurement at the sites of some kirgiskegürs, graves and prehistorical settlements situated in those areas.

In the 2005 summer fieldwork the expedition team located a necropolis of about 300 structures dating back different periods situated on the western bank of Orog Nuur in the area of Bogd Sum, Bayankhongor Aimag, and by documenting all of them with precision and excavating some chosen tombs.

A total of 246 stone features including kirgiskegür and tombs located on the western bank can be attributed to different dates. We can define their arrangements and structures into different classifications concerning whether or not they have outer fence, what form circular, rectangular, etc. those outer fences have, and so on. The kirgiskegürs are dating back to Bronze Age and most tombs are also dating back to Bronze Age, Hsiung-nu period, and Turkic period.

They consist of 81 kirgiskegürs with rectangular outer fence, 20 kirgiskegürs with circular outer fence, 70 kirgiskegürs without any outer fence, 23 slab graves, 52 circle-shaped tombs, and 2 tombs unclear or very disturbed.

From the result of our excavations of ten tombs at the sites of Zeregleen Bel, Tsagaan Övdög and Tarimalt situated in a valley east of Mts. Ikh Bogd Uul we conclude that they belong to different dates. The bone fragments from Zeregleen Bel Tomb No.01 don't give us the possibility to date it.

From the remains of Tsagaan Övdög Tomb No.02 we see that the dead body bending his knees and arms had been laid by side on the natural soil to southwest and then covered by large stones without digging any burial hole. We could not reveal a human burial, but Neolithic conical cores and end-scrapers, the stone tools that are found in a number of similar type of Bronze Age graves in Mongolia and his adjacent countries, in the Tsagaan Övdög No.01. The analysis indicates that the rim fragments in the slab grave are of a ceramic cauldron 23 in diameter. There found no remains of human burial and artifact in Zeregleen Bel Tomb No.02 and Tsagaan Övdög Tomb No.03, 04, 05. In addition, their arrangements are very similar to other graves in the southern Mongolia such as Bronze Age tombs in Mt. Chandmani Khar Uul in the area of Delgerekh Sum, Dornogobi, and in hills of Oyu Tolgoi in the area of Bogd Sum, Ömnögobi Aimag. These features give us the assumption that they date to Bronze Age. The fact that the remains found from two tombs at the site of Tarimalt are identical in the position of buried horse and patterns of harness and bronze knife with the ones from a tomb of Turkic period in Mt. Khutag Uul in Arkhangai Aimag and from a tomb at the site of Tögs Övdög in Khentii Aimag makes our assumption more reliable that they date to the Turkic period. Especially, that the buried horse are found in the Tarimalt Tomb No.2 is vitally significant to archaeological work in Mongolia and important to studying a way of life, knowledge of craft and peculiarity of funeral ritual of ancient past time in question.

Research methods used during the fieldwork

The team should apply traditional methods to their archaeological fieldwork by combining them with geological methods and measurements. All the methods and techniques that will be used for excavation and measurement should be acceptable to high standards or to current methodology. Artifacts will be documented with photograph and drawing.

Team members

The official team of the joint CNR-MAS 2006 geoarchaeological expedition was formed as follows:

From Mongolian side:

Prof. Byambaa Günychinsüren (Mongolian-side Director of the Joint Mongolian-Italian Geoarchaeological Project, Head of the Department of Prehistory Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

Dashzeveg Bazargür (Researcher of the Department of Prehistory Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

Jambaa Gantulga (Researcher of the Department of Early Bronze and Iron Age Studies and Hsiung-nu Empire Studies, the Institute of Archaeology, Mongolian Academy of Sciences, Ulaanbaatar)

In addition to the above-mentioned researchers, eight assistants, two drivers and a cook were included in the team.

From Italian side:

Prof. Bruno Marcolongo (Italian-side director of the Joint Mongolian-Italian Geoarchaeological Project, CNR-IRPI, Padova, Italy)

Prof. Giovanna Fuggetta (Ethnographer, researcher, CNR-IRPI, Padova, Italy)

Cecilia Dal Zovo (Student of the University of Padova, Italy)

Travel route: Ulaanbaatar-Arvaikheer-Bogd Sum of Bayankhongor Aimag-Arvaikheer-Ulaanbaatar

Duration: 30 days from 26th July to 25th August 2006

Written by Prof. Byambaa Günychinsüren
Dashzeveg Bazargür
Jamiyan-Ombo Gantulga

A. EXCAVATION

Orog Nuur-73 (hereafter, **OR-73** etc.). It was the smallest tomb we excavated in the 2006 summer fieldwork. It is a circular tomb (N 45° 02' 39.9", E 100° 34' 41.7" above sea level (hereafter, asl.). 1232 m) with a few cover stones that is situated nearest to the lake or at the northern tip of a group of many tombs similar in from and measure around it. The diameter is 3.4 m.

The first cleaning of the modern shallow sandy surface shows that its arrangement is disturbed because of the looting process. We began to excavate a 5×5 m pit in the center to a depth of 10 cm below the firstly cleaned surface. Then we divided the pit area into two parts in a west-east direction, at the eastern part of which we tested another 1.2×3 m pit to a depth of 40 cm where bone crumbs mixed with natural sediments were found very often. Because the pit soil consisted of loose pebbles, we decided to extend the pit area by 1 m to the north taking account into the fact that further vertical excavation would harm probably objects to be found. There found some fragments of human skull at a 40-50 cm depth. Because of the poor situation to be preserved, there was no possibility to take them as a whole off. The position indicates after the complete excavation that the skull of the deceased was put vertically to the southeast.

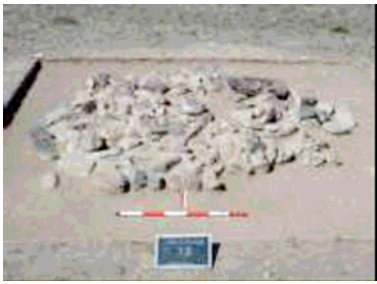


Fig. 1.1. After the first cleaning process



Fig. 1.3. Position of the fragmented skull



Fig. 1.2. View of the excavation

For more precise analysis we chose three teeth and a mandible from the skull as sample. The other remains of the skull were crumbled by natural influences such as wind and sunlight during the excavation. Besides, much caustic substances contained in the pebble-bearing pit soil have turned any object into crumbly as we have pointed out.

No other humanly produced remains were revealed. The fact shows that the tomb was looted in the past. Thus we stopped the excavation to reconstruct.

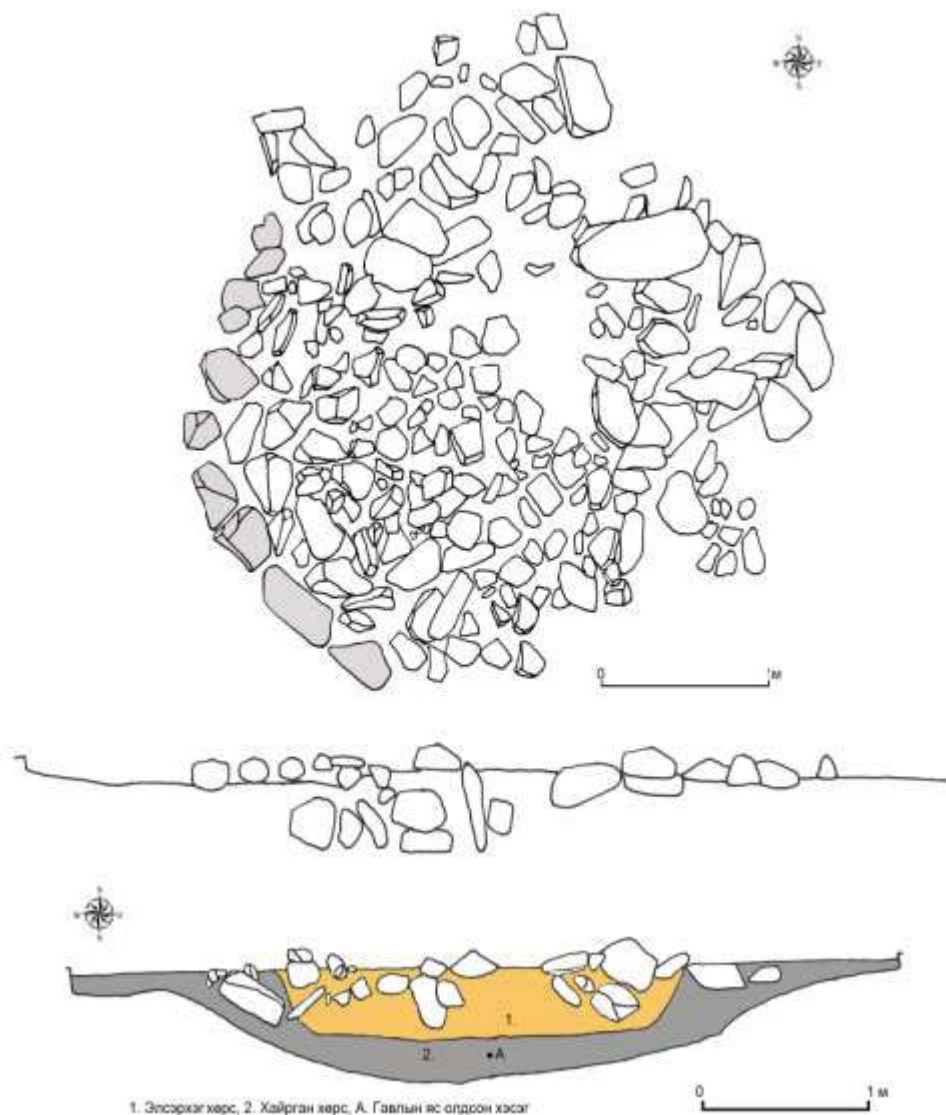


Fig. 1.4. Plan and profile of OR-73

1 – Sandy soil

2 – Pebble-bearing soil

A – Place where the skull were unearthed

OR-85. The slab grave is situated 344 m north of OR-92. The location is N 45° 02' 22.5", E 100° 34' 31.2", asl. 1245 m. It is enclosed by twenty five slab stones, larger and smaller. There is one large standing stone at its each corner. Inside the slab enclosure there are three overlapped big stones: 45×80×90 cm, 60×70×115 cm and 35×56×62 cm from the northern part.

We decided to test a 5×5.5 m pit for excavation. After the removal of the shallow ground surface we measured both exterior and interior sides of the slab enclosure: the exterior one 2.5×3.2 m and the interior one 1.7×2.5 m. Although we tested a few pits in the outside, we encountered always the natural sediments at about 15 cm depth. Thus the excavation was continued inside the enclosure of slabs where darker sediment of a burial postpit began to be recognized gradually at a depth of 20 cm on its north and west sides. The postpit is measured as 0.8×1.7 m. In the process of the postpit excavation we encountered some fragments of both human and animal bones, in particular a human front tooth, a larger fragment of human tooth root, an ankle-bone or talus of small domestic animal (lamb or kid?), and fragmented remains of human lower limbs.

A man was buried at a depth of 54 cm. The dead body are placed on the ground by his back

horizontally in a northeast-southwest direction. His arms are put straightly along the body; two legs stretches to full length. The skeleton is almost complete, but some small bones of limbs transferred by rodents are found everywhere in the burial pit. The excavation shows that the burial postpit was filled with both pebbles and soils.

No other humanly produced objects were revealed in the pit. But on the part of her hand bones and pelvic bones were found a large domestic animal's (cattle or horse?) scapula whose apex part was directed to his head; a 1.5×9×12 cm small supporting stone or *der-e çilayn* (lit. pillow stone) under the head.

The preservation of all human and animal bones are very poor. The height of the dead body is 160 cm. The length of the scapula is 32 cm: its apex 5 cm and its posterior surface 16 cm.

The feature above-mentioned has enabled us to assume that the slab burial was not both looted and associated by other human made objects.

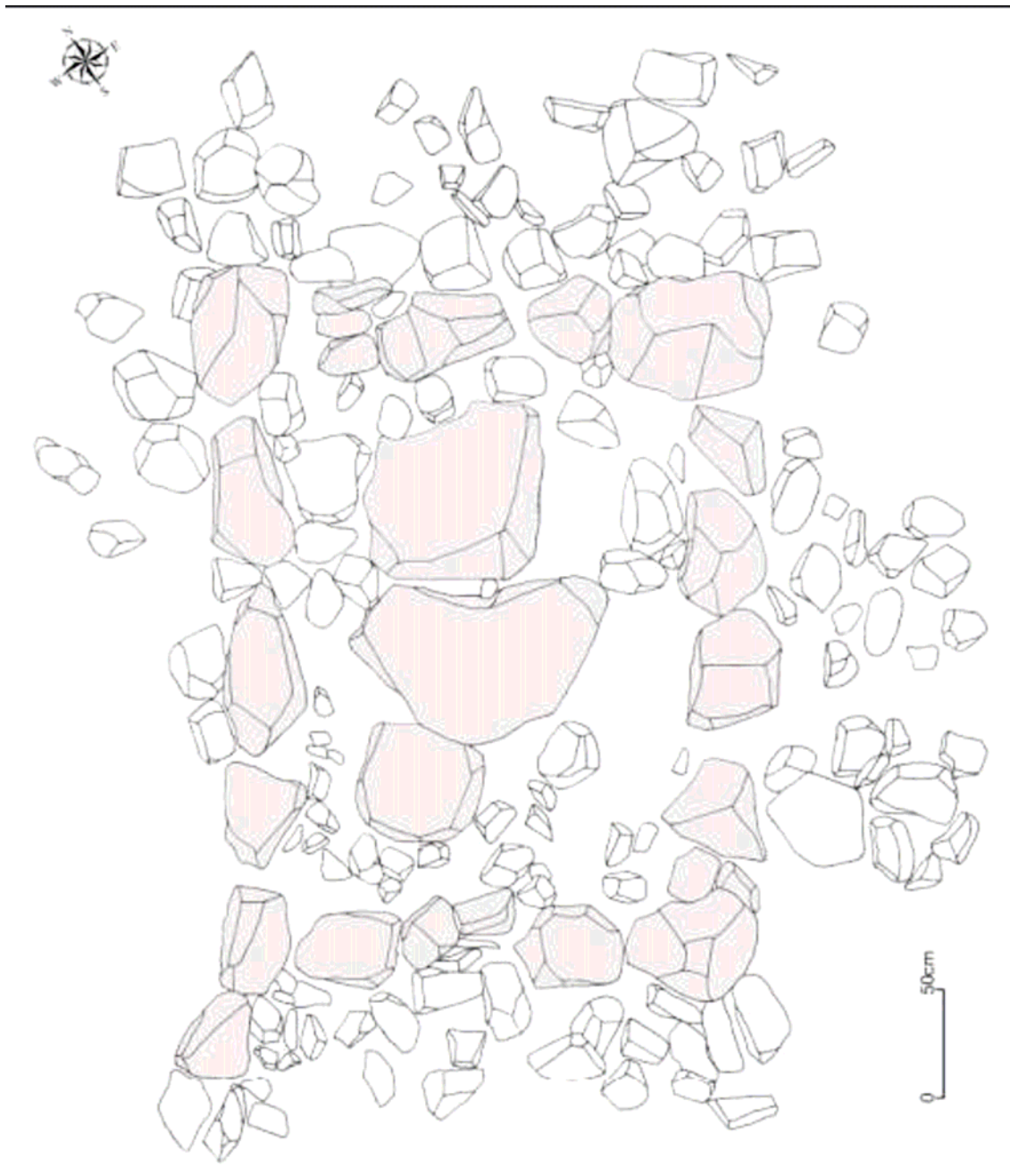


Fig. 2.1. Plan of OR-85

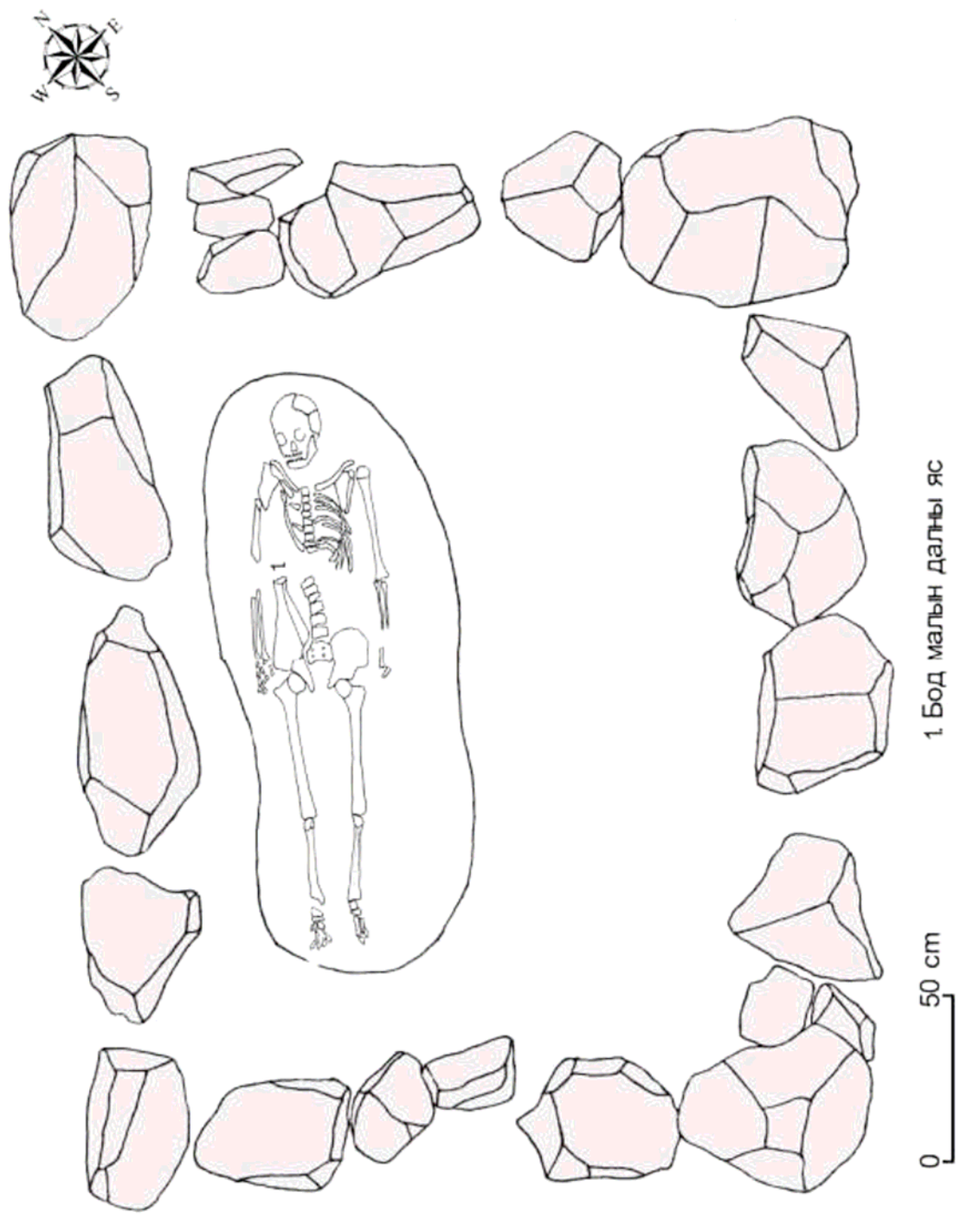


Fig. 2.2. Burial arrangement found in OR-85

1 – Scapula of a large domestic animal

OR-91a. It is a round-shaped structure of a few cover stones located at N 45° 02' 34.2", E 100° 34' 53.2", asl. 1246 m.

A 6.5×6.5 m test pit is chosen for excavation. After the cleaning of the modern surface to a depth of 20 cm we began to encounter sandy soil of small pebbles smoothed by action of water on the northwest and -east and southwest and -east sides, and dark brown soil of loose stones in the central part. Thus we decided to divide the excavation area into two grids of respectively 2.8×1.5 m, east and west, by a 20 cm platform line between them. At a depth of 20 cm we recognized a line of dark blue clay deposits directing horizontally down to the ground on both wall surfaces of the platform.

Although the excavation was continued to a depth of 30 cm or to the natural ground, no item was revealed in the grids. But judging from the fact that a 10-15 cm wide line of dark blue clay deposits is interrupted by a 1.5 m long incursion of sandy soil in its central part we have assumed that there had been a burial here.



Fig. 3. Profile of the east wall surface of the platform

- 1 – Sandy soil
- 2 – Dark blue clay deposit
- 3 – Soil of small pebbles

OR-92. A grave is located southwest of OR-91a or at N 45° 02' 19.6", E 100° 34' 32.5", asl. 1253 m. After clearing the modern surface away in an 7×7 m area, the dimension of the grave was measured as 4.9×5.5 m. The level of cover stones is 50 cm in width. The structure is slightly concaved in the center. An oval-shaped big stone is installed vertically into the soil respectively at each of its corner, but all except the northwest vanished one have falled down to a certain extent on the ground: the northeast one falls down to the east, the southeast one to the south, but the southwest one inclines a little at its base. We numbered all the standing stones from the northeast: 1) 26×40×60 cm, 2) 27×38×83 cm, and 3) 36×40×52 cm.

After the first clearing of cover stones in the outside of the enclosure, the dimension of the grave was measured as 3.9×3.95 m in a north-south direction. Because no item was revealed during the excavation in the outside, we focused our attention on its central part or inside the enclosure. The removal of the Layer-2 cover stones shows that there is a burial box of stones in the center. Then we took box's cover stones away and continued the excavation inside it to a depth of 20 cm where we encountered a small burial postpit (56×47×64×160 cm). The burial is thinner in its central part or at a distance between two tips. The more deep we excavated the postpit, the smaller its size turned into. At a depth of 10 cm below the previous layer, small fragments of human bones were uncovered, but no other items was occurred further to a 40 cm depth of natural pebble-bearing soil. We come to judge from the burial box's size and bone fragments that it was of a child.

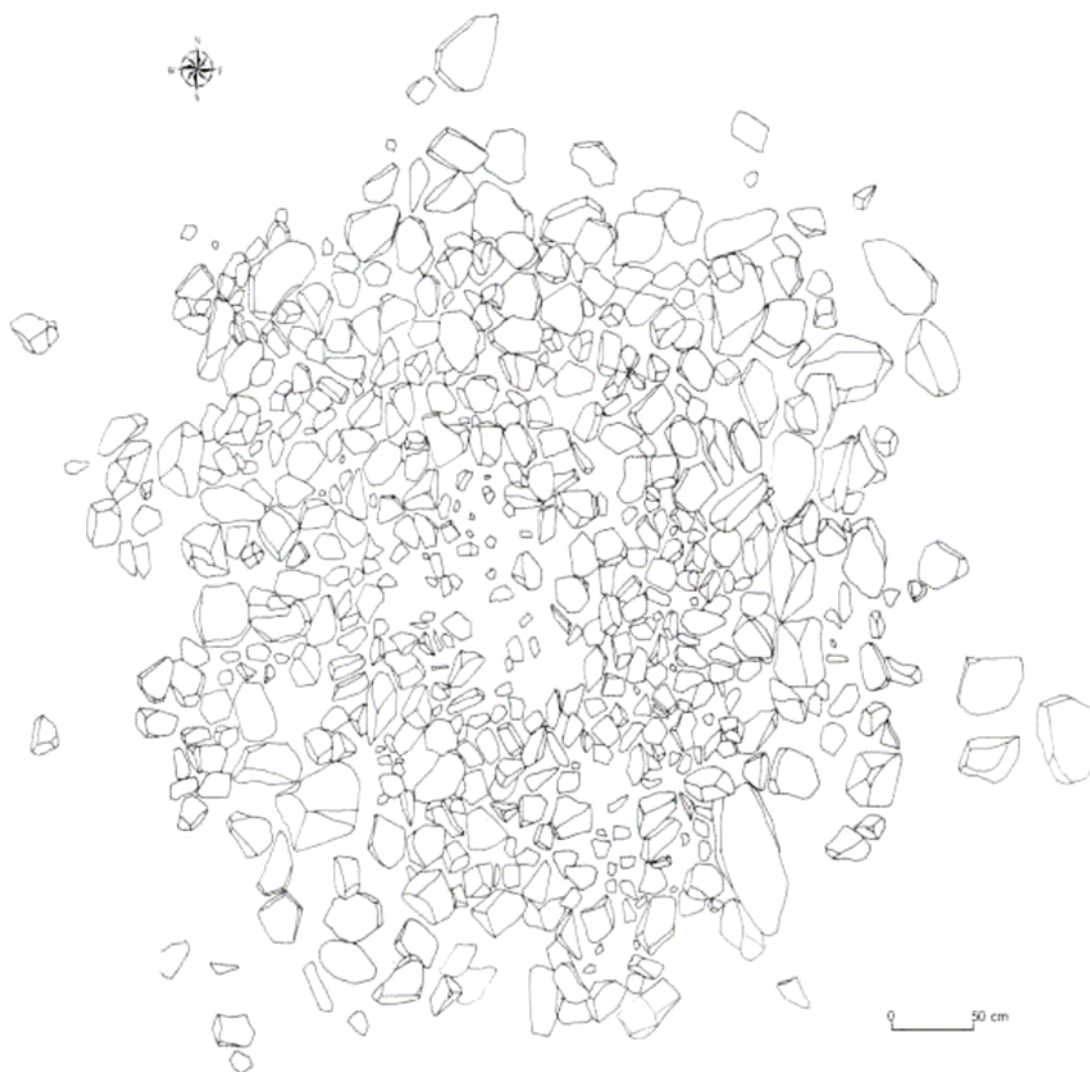


Fig. 4.1. Plan of OR-92

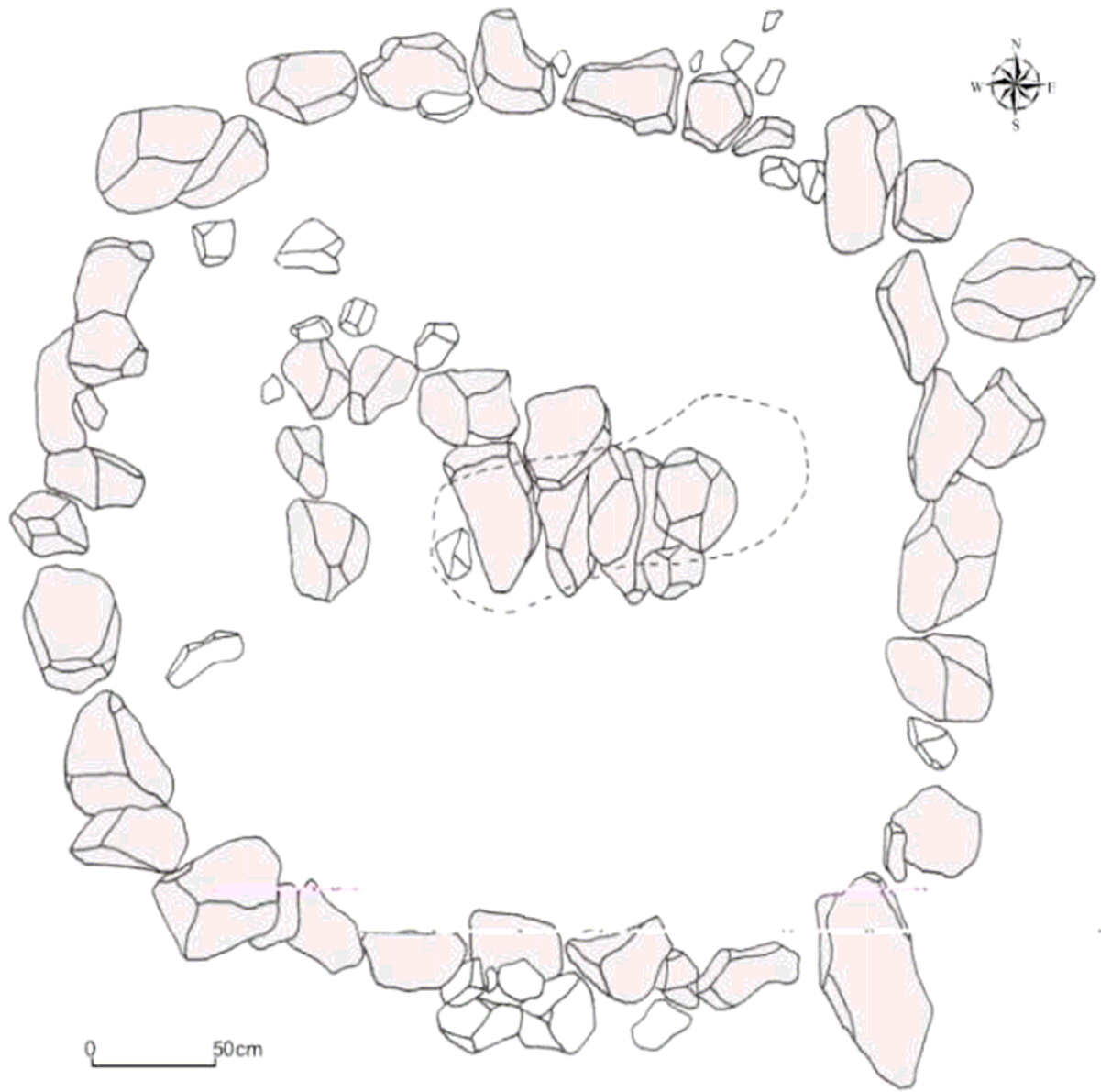


Fig. 4.2. Cover stones and a burial postpit of OR-92

OR-144. A kirgiskegür is encircled by ring outer fence 15 m in diameter. The central mound is 5.6 m in diameter. It is located at N 45° 02' 33.3", E 100° 34' 48.2", asl. 1231 m.

After clearing the cover stones away, it comes to be recognized that those small stones had been laid out at first as coverings by ancient people. It has been enabled us to assume that the layer consisting of small cover stones inside the ring enclosure has accumulated around the centre over time as a mound.

In order to draw a profile of this distinctive structure of kirgiskegür we divided the area into two parts in a west-east axis and then cleared cover stones away in a 50 cm wide area along the axis. The structure consists of four layers. The first layer is formed by stones which enclose the burial box. The second one represents cap stones which close the burial box. The large cover stones of the box form the third layer. The fourth one is represented by stones which cover the whole area of the kirgiskegür on the ground. The cleaning of the mound cover stones indicates that so large box of stones that an adult man can be buried stretches in a west-east direction. The box is built by oblique-shaped smooth stones and is closed with large oval stones.

When we took the box cap of stones away and continued the excavation inside the box, some phalanges of human hands and feet are found in the central and east parts. Then we removed all the

stones of the box because there was no enough space that one could not continue the excavation inside it.

There was no stone, but much of accumulated sandy sediments inside the box. After clearing the sediments away, we unearthed an intact human burial placed by his head to the west. His face turns to the south by its side. Around the lower part especially between femurs appears rodent's holes, so that the structure around is very disturbed. It should be noted that some small bones of lower limbs were revealed from the breast part. We assume that those bones were transferred there by rodents.

Above the left eye-socket or on the surface of frontal bone there is an oval-shaped hole, the mark caused probably by a powerful hit of pointed weapon. It seems that it was the cause of his death. As the funeral practice is concerned, the departed man is placed by his back on the ground to the west. His face turns by its right side to the south or to an adjacent mountain. The box is enclosed and closed by large stones. After that, three rows of some additional stones are covered on the box. The box is surrounded in the form of a ring by small stones as a fence in the outside. Inside the fence a number of small stones are laid out on the ground surface of whole structure.

No other remains were found in the burial. In other words it was not associated by other human made objects.

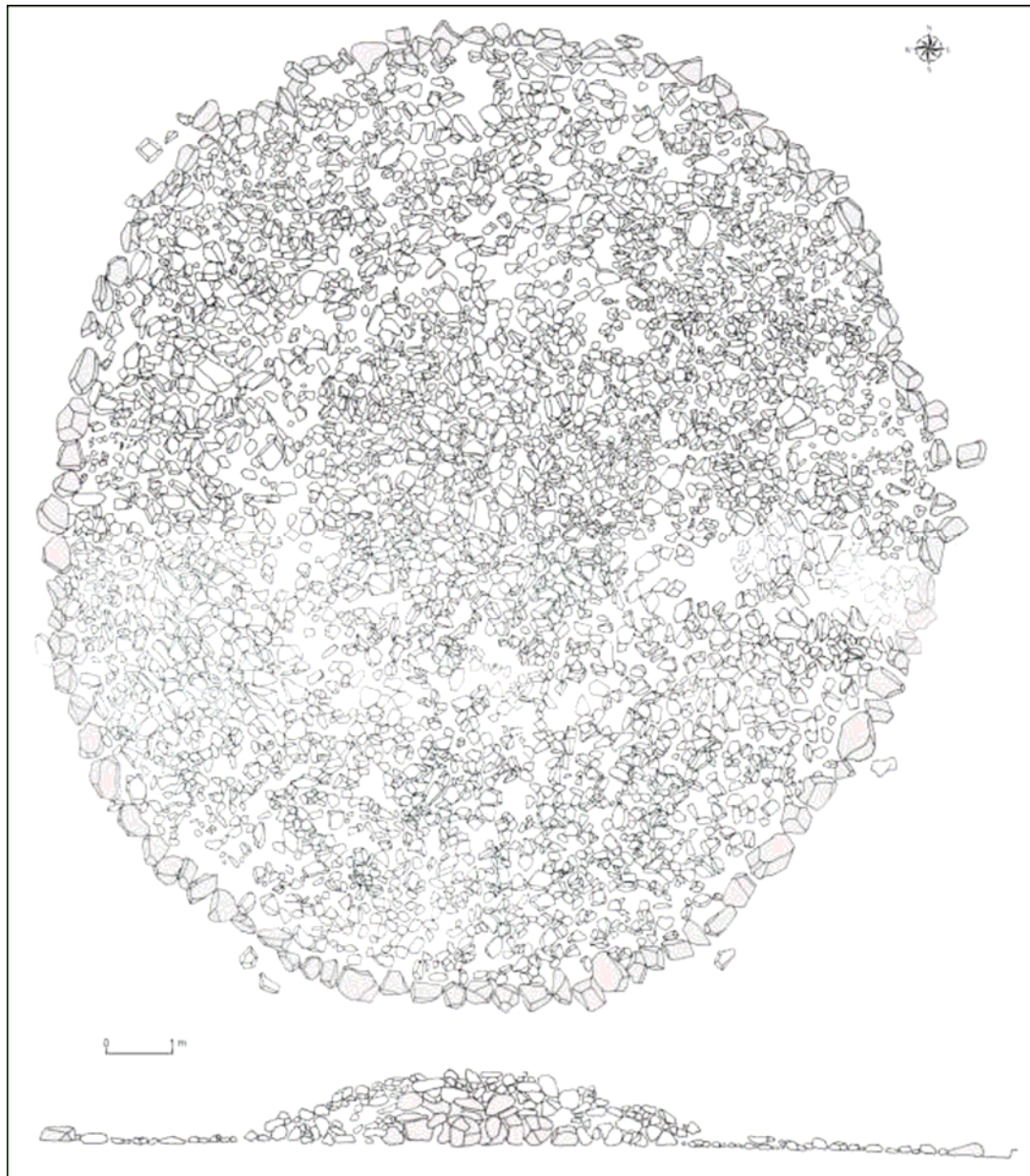


Fig. 5.1. Plan and profile of OR-144



Fig. 5.2. Burial arrangement found in OR-144

OR-249. A kirgiskegür is surrounded by a rectangular outer fence. An big stone is standing at each of its corner, but all have falled down to a certain extent on the ground. It is located southwest of OR-144 or at N 45° 02' 32.5", E 100° 34' 44.5".

After clearing the modern surface away in a 9×9.5 m area, a line of many small stones sized approximately 15×20×25 cm appeared on the ground. The line connects the central mound and the outer fence.

We decided to divide the excavation area into two grids in a west-east direction and removed all cover stones in its south part. The excavation shows that ancient people built a burial box of eleven about 34×58×75 cm stones in the central part of the kirgiskegür and closed it by three larger blue stones as a cap, the largest of which is measured as 34×58×75 cm. The box stretches in a west-east direction. Its exterior side is 1.48×2.7 m and the interior side 0.52×1.83 m. We sieved the sediments that had been taken away in the burial box, but no archaeological remain was uncovered.

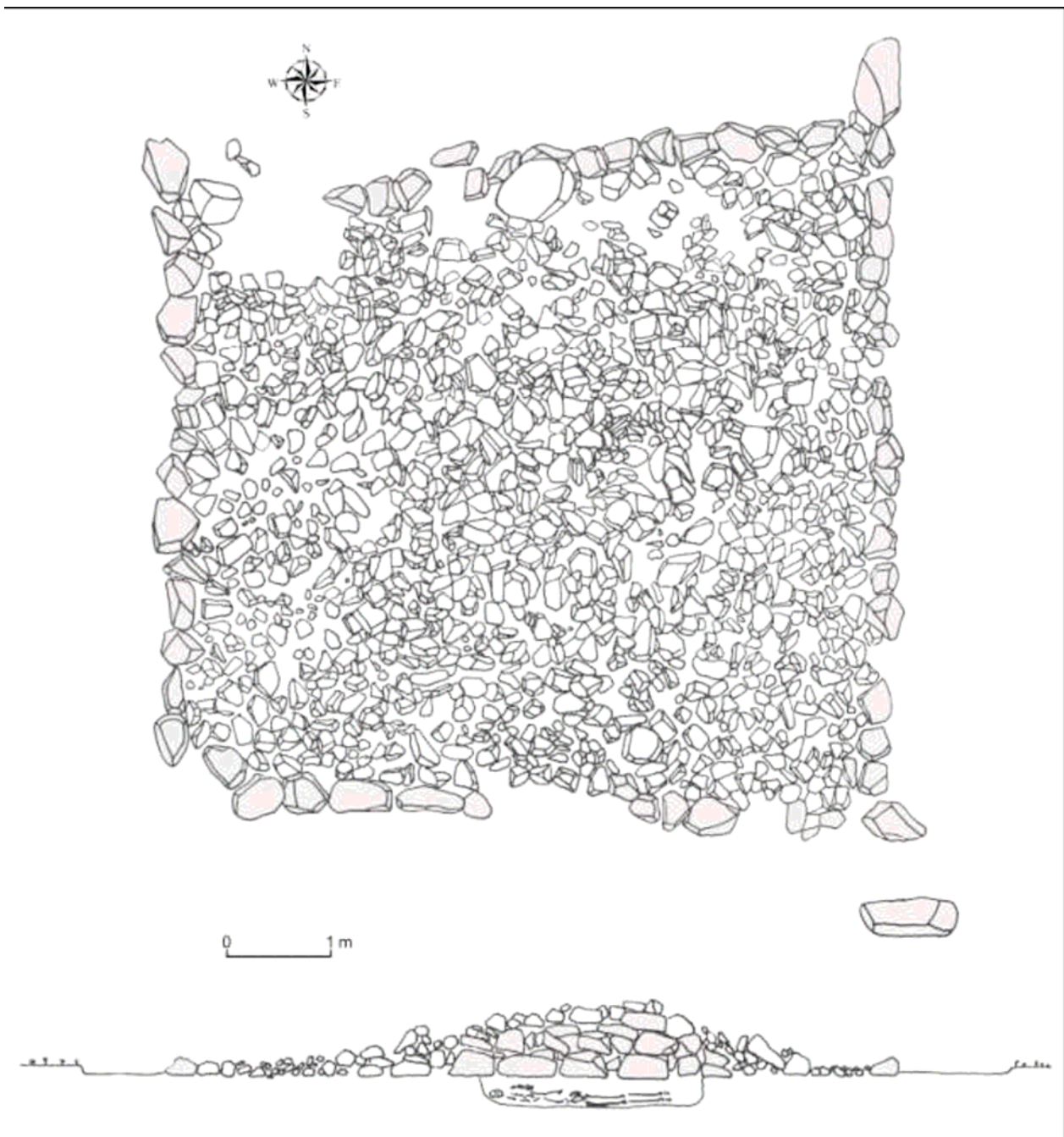


Fig. 6.1. Plan and profile of OR-249

In the course of further excavation at first some small fragments of human bones were unearthed in the middle of the box and then a human burial at a depth of 30 cm below the lower ridge of the box. The departed man is placed by his head to the west. His face turns to the south. No other items are associated with him. The preservation is very bad. The burial body is placed on the ground inside the box at a depth of 30 cm and then filled with dark brown soils. After that, the burial pit is enclosed and closed with by large stones. In sum, the burial is very intact and the dead body has kept at its initial position. He is measured as 171 cm tall.

After continuing the excavation to the natural sediments, we stopped to reconstruct.

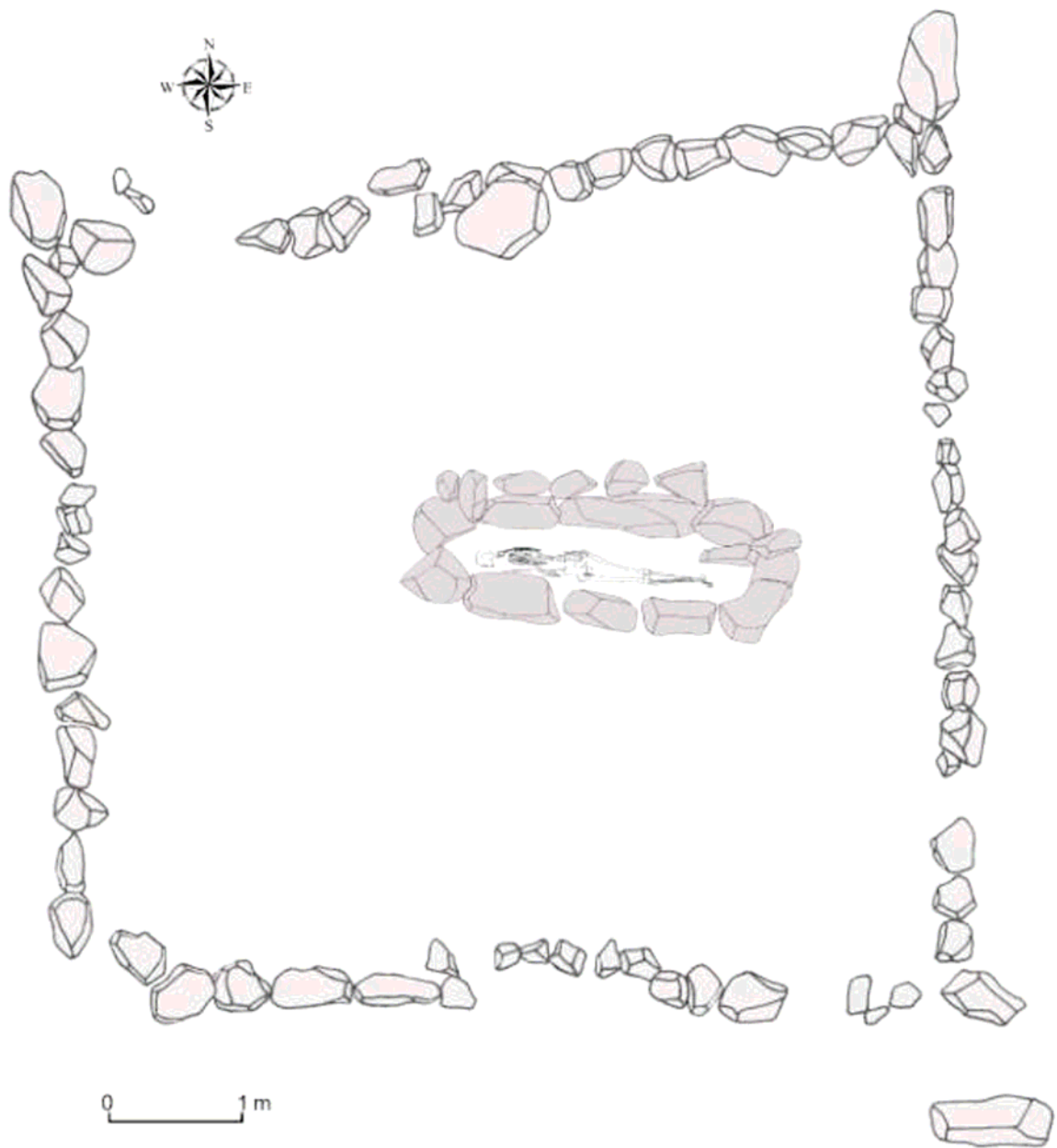


Fig. 6.2. Burial arrangement found in OR-249

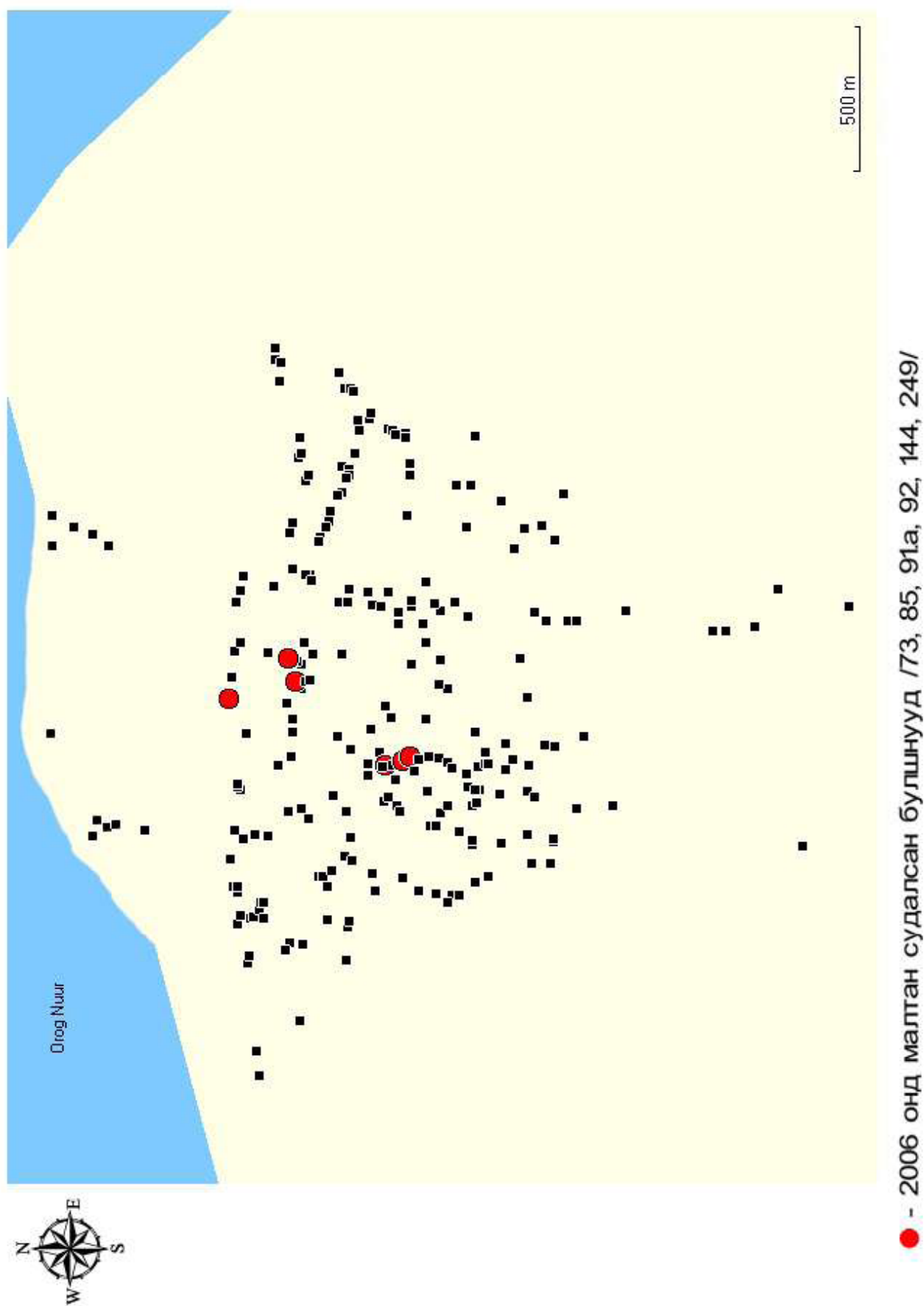


Fig. 7. Archaeological structures excavated in the year of 2006 (OR-73, 85, 91a, 92, 144, 249)

B. SURVEY

A survey was, in effect, not the main objective of this summer fieldwork, but the team members lined up undertook a little walking survey to describe the context of some remarkable sites which were revealed in the previous year and to re-estimate with better precision their numeration and location. In the process of survey some new kirgiskegürs were found.

1. Newly found kirgiskegürs

OR-249. This kirgiskegür was situated near our campsite or 97 m southeast of it. The location is N 45° 02' 32.5", E 100° 34' 44.5". It has a rectangular fence of small stones. No structure for sacrifice was revealed in the outside of the fence. The fence is measured as 7×7.1 m. The mound in the center is covered by smaller ones. The diameter of the mound is 4.1 m.

OR-250. There is another kirgiskegür 30 m south to the above-mentioned one. The location is N 45° 02' 31.4", E 100° 34' 44.6". It is enclosed by a 14.2×13.3 m rectangular fence of stones whose each corner is mounded by stones. The diameter of the southeast mound is 3 m, the southwest one 3.9 m, and the northeast and northwest ones 3.2 m.

OR-251. The kirgiskegür is located at N 45° 02' 30.9", E 100° 34' 44.8". A 7.9×7 m rectangular fence of stones encloses the structure in the outside. In the middle of the structure there is a mound covered by smaller stones. The mound diameter is 4.7 m.

2. Rock Arts

We encountered a hill of dark brown rocks at the right side of a valley entrance named Övtiin Am north of Ikh Bogd Uul. There found some rocks of animal images engraved made in the application of line engraving technique on the slope faced to the south. The images consist of ibexes, horses, dogs (?) and wolves (?). The site is located at N 44° 59' 40.9", E 100° 34' 16.8", asl. 1256 m.



a.



b.



c.



d.

Fig. 8 a, b, c, d. Some images found on rock surfaces

C. PALEOANTHROPOLOGICAL ANALYSIS

Ts. Amgalantögs

Paleoanthropologist of the Institute of Archaeology, MAS

OR-85. Because of the poor preservation of the bones found in OR-85, it is impossible to make both osteological and craniological analysis on them. Thus it should be noted that we are able only to give a general description on the basis of their photographs. The sutures not having fused completely, the teeth erosion, and an M3 molar tooth not having appeared yet show that the deceased is 15-20 years old. It seems that the proportion of skull and pelvic bone proves the deceased to be *male*.



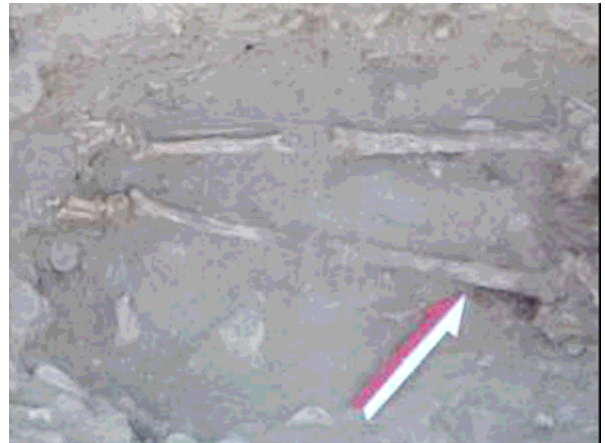
a.



b.



c.



d.

Fig. 10 a, b, c, d. Bone remains from OR-249

OR-144. We made paleoanthropological analysis on the skull. The skull was very broken. The following bones of the skull are relatively intact: upper part of the eye-socket orbits, parietal bone, and other constituent bones such as temporal bones, occipital bone, left zygomatic bone, nasal bone and left part of mandible.

The following bones of the body are accessed: pairs of collarbones, pelvic bones and humerus, sacrum, breast bone, thoracic and lumbar vertebrae, complete left and right rib bones, glenoid cavity of the left scapula, atlas and axis of the cervical vertebrae, kneecap, some middle and distal phalanges of hand and foot, two femurs, and a pair of tibia and fibula broken due to the transfer situation.

We could establish the age and sex of the dead body on the basis of Bass's (Bass M. William. *Human osteology: Laboratory and Field manual*. USA, 1995) and Brothwell's (Brothwell D. R. *Digging up bones*. New York, 1981) methods, but it is impossible to make the height clear due to the fact that lower limbs are

very broken. The sutures not having fused completely and the teeth erosion indicate that the deceased is 35-40 years old. The pelvic bone, mastoid process of temporal bone and well-developed brow ridge show that the deceased is *male* and mongoloid.

Across the brow ridge or slightly above the left eye-socket, there is a 5.2 cm long, 1.5 cm wide hole, the mark caused probably by a powerful hit of pointed weapon. It seems that it was a reason of his death.

Due to the badly preserved, heavily broken bones found in OR-144, it is impossible to make both osteological and craniological analysis on the skull and lower limbs.



a.



b.



c.



d.

Fig. 11 a, b, c, d. Bone remains from OR-144

OR-249. Like others, the poor preservation of OR-249 human bones doesn't give us the possibility to make detailed analysis and measurement. Only way was to describe from photographs. A mandible and some teeth can not be observed probably because of rodents. The deceased's pelvic bone and mastoid process of temporal bone and glabella of frontal bone of the skull show that the deceased is *male*. It is very difficult to access the age. In general, we can conclude from the development of all bones that he is an adult approximately 30-40 years old.



a.



b.

Fig. 12 a, b. Bone remains from OR-249