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**El Sadda: Excavations on the Polish
Concession (Hamadab Dam Rescue
Project), January-February 2007**

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EL-SADDA

EXCAVATIONS ON THE POLISH CONCESSION (HAMADAB DAM RESCUE PROJECT) JANUARY–FEBRUARY 2007

Piotr Osypiński

Another season of rescue excavations as part of the MSDAP project to the Fourth Cataract was carried out in the Polish concession from mid January through the end of February 2007 by a team from the PATRIMONIUM Foundation.¹

The chief objective of the season was finishing the excavation of the post-Meroitic cemetery of El-Sadda 1 (Osypiński 2007), while completing a survey of the southwestern part of the concession. A choice of sites in the vicinity of El-Sadda village was explored in order to provide data for anthropological and cultural comparative studies. These included (apart from SD1):

- SD28, Neolithic remains;
- SD24, tumuli cemetery, classified as Kerma horizon in the survey, proven in excavation to be Late Meroitic/post-Meroitic;
- SD4, tumuli cemetery, at least one grave from the Old Kush period, thus predating the post-Meroitic period;
- SD34, Christian cemetery (in lieu of the box-grave cemetery at SD12 which could not be excavated);

An effort was made to complete excavations at the Late Meroitic/post-Meroitic cemetery in Hagar el-Beida 1 with its exceptionally big 'royal' tumulus (T10). The work had to be interrupted again because of local unrest. Planned excavations at a Middle Kerma cemetery in Hagar el-Beida 11 (at least 150 superstructures, some unlooted, cf. Sip 2007) could not be initiated at all for the same reason.

1 The MSDAP is an international salvage project concentrating on the area of the Fourth Cataract which is to be inundated by the waters of the Hamdab High Dam in construction near the island of Merowe. The PCMA concession extends approximately 45 km on the left bank of the Nile between Khor Umm Ghizlan to the southwest and Shemkhiya upriver to the northeast. The Polish effort in 2007 was co-directed for PCMA by Dr. Marek Chłodnicki and Dr. Bogdan Żurawski. The PATRIMONIUM team, which was based in El-Sadda, was field-directed by Piotr Osypiński; the team included Marta Osypińska, archaeologist and archaeozoologist, Dr. Łukasz Maurycy Stanaszek, physical anthropologist, Klaudyna Trawińska and Michał Sip, archaeologists. The National Corporation for Antiquities and Museums was represented by Fathiya Abdelrahman.

EL-SADDA 28 AND EL-SADDA 28A

Fieldwalking had recorded Early Neolithic pottery fragments and flint artifacts on a flat rock dominating the landscape by the river. The site (N19°17'00.7", E32°43'13.4") was located in November 2005 (Chłodnicki *et alii* 2007: 338–341, esp. Fig. 2) and tested in February 2007, the work being supervised by Piotr Osypiński.

A small, 2 by 1 m, trench was dug in the middle of the flat area on the rock top. Arbitrary levels 10 cm thick were excavated down to bedrock, which is approximately 0.50 m below the ground surface. Artifacts were collected by sieving. They fall into three main categories: knapped stone tools and debitage, potsherds, and finds of organic origin, that is, partly petrified animal bones, ostrich eggshell and oyster shells (see below, Appendix 1, on the organic remains).

Single-platform blade-flake technology predominated among the finds, the material used being mostly fine-grained chert and flint, as well as occasionally quartz. The tool inventory includes endscrapers, geometric inserts (crescents, triangles, truncations and backed blades) and perforators.

The potsherds represented a ware that was either chaff-tempered nor decorated with a wavy-line ornament. A dotted pattern, sometimes executed with a comb, predominated. A few thin-walled rim fragments bore an incised ornament.

It is to be assumed that SD28 was a settlement of the Middle Neolithic group, dated later than Early Khartoum. In Marks' classification (Marks *et alii* 1967/1968) covering the area between the Third and Fourth Cataracts, this matches the Karat Group with evolved pastoralism.

Similar Neolithic finds, as well as some post-Neolithic (Kerma Horizon) potsherds were recovered from the hills in the vicinity

of SD28. A few stone structures were noted and tested to determine the origin and function of the stone structures. The trench at this new site, coded as SD28A, was 2 by 1 m and was oriented E–W. The exploration method was analogous to that used at SD28. Sieving of the 0.30 m thick layer of soil yielded Neolithic material mixed with some later artifacts, like potsherds, a glass bead, small ostrich eggshell beads. Underneath, the outlines of two pits were disclosed. The features were filled with intercalated silt and sand laminae and contained much less archaeological material than the top layers. The western pit (W) was connected with one of the stone structures that had been observed on the surface. The trench was subsequently extended to the north in order to obtain a section through the structure. The pit, which is approximately 3 m in diameter and 0.50 m deep, may have been a small water reservoir. The other pit (E) was also a settlement feature and to judge by the stratigraphy, it was of earlier (possibly Neolithic) date than pit W.

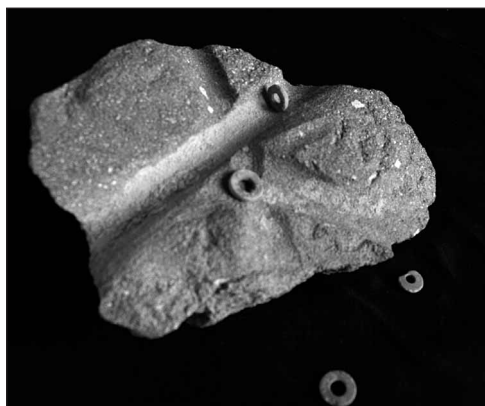


Fig. 1. Stone for smoothing eggshell beads (Photo P. Osypiński)

Artifacts included knapped stones, pottery, partly petrified animal bones. One unique find was a piece of sandstone with some grooves on both faces, each of them semicircular in section [Fig. 1]. Ostrich eggshell beads from both SD28A and SD28 match the grooves, demonstrating that the stone could have been a tool for smoothing beads made from this material. Many pieces

of ostrich eggshell were also found, as well as lithic perforators which could have served to drill the threading holes. More microlithic crescents were found proportionately in the lithic assemblage from SD28A, which was otherwise similar to that from SD28. This suggests a late-Neolithic (Abkan?) contribution. The pottery and animal bones were also similar to the set from SD28.

EL-SADDA 1

The site (N19°16'40.6", E32°43'32.0"), discovered in 2004 and tested for the first time in 2005 (Osypiński 2007), was excavated again in the present season in order to collect more data on each group of graves. The work was supervised by the author and Marta Osypińska.

The site encompassed 74 superstructures recorded on the surface, clustered in six groups. In 2005, two or three graves from each group were explored for the purpose of

further studies of infra- and intra-group diversity. Clearing of five tumuli from Group I led to the discovery of many more graves without preserved superstructures (altogether there were at least 15 features), leading the excavators to estimate the density of the cemetery at nearer to 200 tombs in all [Fig. 3]. To date, 40 funerary structures have been investigated. The following catalogue presents tumuli excavated this season in each of the clusters.



Fig. 2. *Unplundered cenotaph T.84 from Group I*
(Photo P. Osypiński)

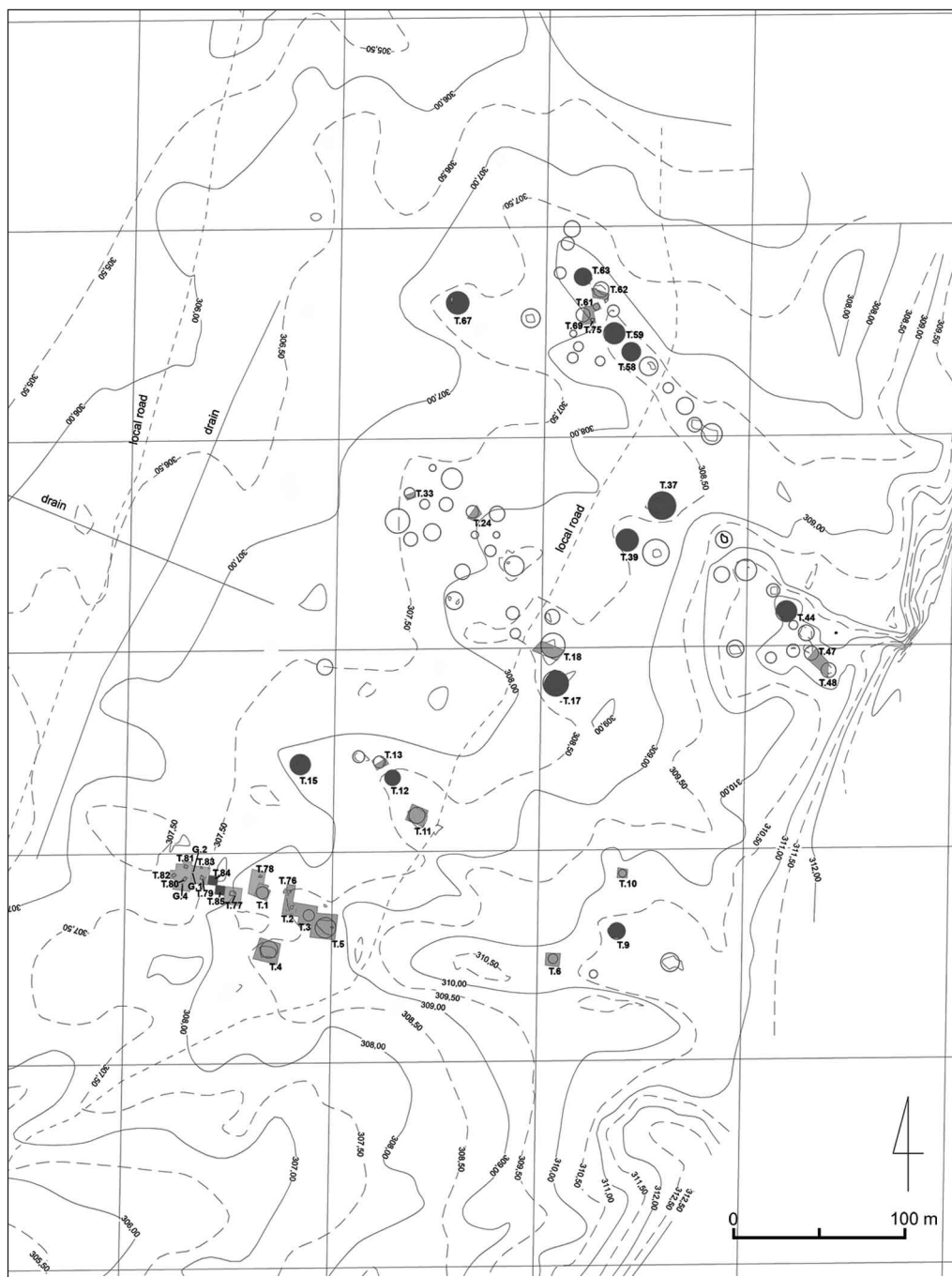


Fig. 3. General plan of the post-Meroitic cemetery at El-Sadda 1. Black dots mark the features excavated in 2007 (Mapping M. Sip and P. Osypiński)

GROUP I

Tumulus 84. Cenotaph, apparently unplundered [*Fig. 3*]. Rectangular shaft, approx. 1.00 by 0.80 m, oriented N–S. Blockage of rough stones. Small niche chamber to the south, empty of human remains. Grave furniture: seven complete ceramic pots (four beer jars, one bowl and two plates) and a few grass baskets in poor state of preservation.

Tumulus 85. Trapezoidal shaft, approx. 2.50 by 2.00 m with two steps. Niche chamber at the west. Bottom of grave at 2.50 m below the surface. Skeleton of a man (25–35 years old), disturbed, in secondary position in the southern part of the chamber (for an anthropological analysis of this and other human remains from the site, see below, Appendix 3). Grave furniture left by robbers: iron arrowheads with one barb, stone, glass and faience beads, textile fragments and remains of a goat (see below, Appendix 2 on the faunal remains).

GROUP II

Tumulus 9. Rectangular shaft, oriented E–W, approx. 2.00 by 1.00 m, some 0.70 m deep. Blockage of stone slabs laid flat at the bottom of the shaft. Entrance to the chamber on the south side. Skeleton of a man (age 35–40) with pathological changes on the vertebrae, in secondary position in the southern part of the chamber. A few ostrich eggshell beads left by the robbers.

GROUP III

Tumulus 12. Rectangular shaft, oriented N–S, approx. 1.50 by 0.70 m, 0.60 m deep. Blockage of stone slabs laid flat on the shaft bottom. Entrance to the chamber situated centrally in the middle of the shaft. Chamber approx. 1.50 m deep. Skeleton of a woman (age 35–45), in embryonic position, on the left side, head to the west. Hundreds of

ostrich eggshell beads found near the pelvis and many glass beads around the head (neck). Grave furniture: two beer jars with evidence of repairs, two bowls and one small pot.

Tumulus 15. Rectangular shaft, oriented E–W, 1.50 by 1.00 m, approx. 0.70 m deep. Entrance to the chamber on the south of the shaft bottom. Oblong chamber, approx. 0.70 m deep. Partly mummified corpse of a woman (20–30 years old) in embryonic position on the left side, head to the west. Personal adornment: a few faience beads.

GROUP IV

Tumulus 17. Rectangular shaft, oriented E–W, approx. 2.00 by 1.00 m, 0.50 m deep. Entrance to the chamber in the southern part of the shaft bottom. Skeleton of a man (age 40–45) in embryonic position, head to the southwest, partly disturbed by looters. A few ostrich eggshell beads and an archer's ring missed by the robbers.

GROUP V

Tumulus 44. Round shaft, approx. 1.20 m in diameter, some 0.60 m deep. Entrance to the chamber from the southwestern part of the shaft bottom. Disturbed skeleton of a man (age 35–45) in secondary position in the middle of the chamber. Grave furniture left by looters: iron arrowheads with one barb and single bronze spearhead, rhomboidal in section, with tang. The tomb was distinguished by a unique superstructure in the form of an ovoid, stone-reveted tumulus with straight top.

Tumulus 37. Round shaft, approx. 1.20 m in diameter, 0.70 m deep. Blockage of stone slabs, leaning obliquely in the entrance to the chamber. Chamber approx. 1.00 m deep. Skeleton of a woman (40–50 years old) in embryonic position on the right side, head to the south, lying in the middle of the chamber. Personal adornment: hundreds of

ostrich eggshell, glass and faience beads. Grave furniture: two bowls, one ornamented with a motif of triangles.



Fig. 4. Crocodile bite marks on the bone of one of the arms of the skeleton from Tumulus 59 (Photo P. Osypiński)

Tumulus 39. Rectangular shaft, oriented SW–NE, approx. 1.50 by 1.00 m, 0.60 m deep. Blockage of stone slabs leaning in the entrance, preserved partly in the eastern part. Oblong chamber, approx. 1.00 m deep. Skeleton of a woman (age 50–55), disturbed, lying in the middle of the chamber. Personal adornments missed by looters: a few faience, glass and eggshell beads.

GROUP VI

Tumulus 58. Trapezoidal shaft, oriented SW–NE, entrance to the chamber at the southwestern side. Bottom of chamber approx. 1.70 m below the surface. Skeleton of

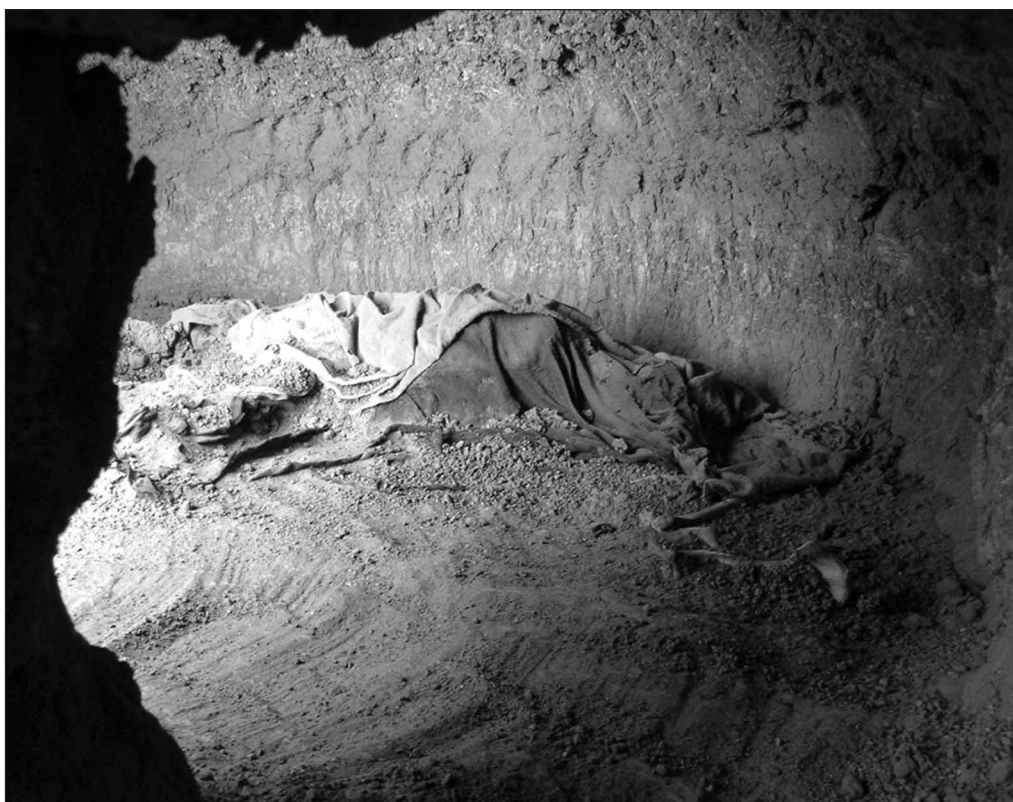


Fig. 5. Corpse wrapped in woollen textiles in the southern chamber of Tumulus 67 (Photo P. Osypiński)

a woman (35–40 years old), partly preserved – only the lower body in anatomical order, in embryonic position on the left side, legs to the west. Personal adornment: many glass and eggshell beads, many iron and bronze rings (originally on the fingers).

Tumulus 59. Rectangular shaft, oriented E–W, 2.00 by 1.50 m, 1.00 m deep. Entrance to the chamber along the southern part of the shaft bottom. Chamber approx. 1.70 m deep. Skeleton of a man (about 55), disturbed by looters, probable crocodile bites on the bones of both arms [*Fig. 4*]. Personal adornment: hundreds of glass beads, smaller amount of faience and eggshell beads and an archer's ring. Grave furniture: set of iron arrowheads with one barb, single iron spearhead, two beer jars, four handmade red-slipped bowls, one with incised geometric pattern incrustated with white clay.

Tumulus 63. Rectangular shaft, oriented N–S, approx. 2.00 by 1.00 m, 0.60 m deep. Entrance to the chamber in the eastern part of the shaft bottom. Chamber approx. 1.80 m deep. Skeleton of a man (age 20–30), partly dislocated — upper part of body lying in reversed direction, lower body in original embryonic position, on the left side, head to the north. Personal adornment missed by

looters: stone, faience and glass beads, bronze ring and amulet of animal bone (very young small ruminant).

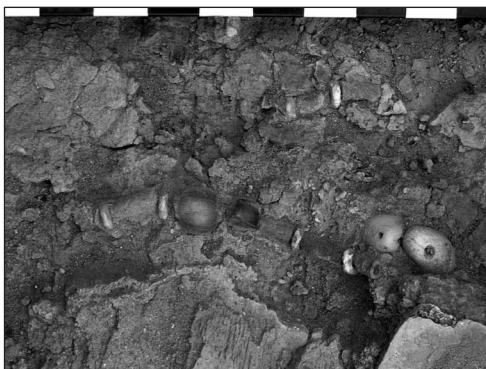
Tumulus 67. Huge rectangular shaft, oriented N–S, 3.00 by 2.00 m, 3.00 m deep, furnished with a step in the northern part. Entrances to two niche chambers in the south and west walls of the shaft. Undisturbed blockage of the southern chamber in the form of a drywall. Skeleton of a man (55–65 years old) found lying in embryonic position in the southern chamber, on the left side, head to the east. Body wrapped in two woolen textiles [*Fig. 5*], the first a light color with pairs of orange stripes at both fringed ends, the second dark blue with red geometric pattern in the middle and pairs of red stripes at both fringed ends, plus a few small ornaments in the form of red hands with white nails at the edges of the piece. Grave furniture: remains of an ornamented leather object with hair (probably a saddle) [*Fig. 6*] in the southern chamber and a few big grass baskets as well as bones of goat and sheep deposited in both chambers (see below, appendix 2). Grave furniture: two handmade small pottery bowls not in original position and scraps of a decorated textile.



Fig. 6. Fragments of a decorated leather saddle(?) from Tumulus 67 (Photo P. Osypiński)

EL-SADDA 24

The site (N19°16'54.4", E32°43'23.6") was discovered in November 2005 at the edge of the flat plateau and rocks behind the El-Sadda village and excavated by Marta Osypińska in 2007. Three clusters of graves



(S, W and N) were preserved in different condition. In the N group, there were no clear outlines to be discerned in the stone rubble, in the S group the individual concentrations of stones were much clearer, measuring approximately 5–6 m in diameter each. The graves of the W group were higher up and had well preserved white-quartz lining of the round superstructures.

Four graves were explored: three from Group S (T2, T4, T6) and one from Group W (T13). The small size of the stone superstructures and scarce potsherds found on the surface had indicated a Kerma Horizon dating. The excavations indicated that the burial ground is of Late Meroitic or post-Meroitic origin.



Fig. 7. *Burial of a young girl with a necklace of faience, glass and eggshell beads (in close-up above), Tumulus 2 (Photo M. Osypińska)*

Tumulus 2. Round shaft, approx. 1.00 m in diameter, 0.60 m deep. Entrance to the niche chamber off the southern side. Skeleton of a child (age 8–10), most likely female, in embryonic position on the left side, head to the east. Personal adornment missed by looters: hundreds of eggshell beads in the pelvis area as well as stone, faience and glass beads around the neck (in original position) [Fig. 7 and close-up], set of ostrich eggshell beads around the left arm.

Tumulus 4. Rectangular shaft, oriented N–S, approx. 1.00 by 0.60 m, 0.60 m deep. Entrance to the chamber exactly in the middle of the shaft bottom. Chamber approx. 0.60 m deep. Skeleton of a man (age

18–20), not in anatomical order. Grave furniture: single iron arrowhead with one barb.

Tumulus 6. Oval shaft, approx. 0.60 by 0.50 m, 0.40 m deep, oriented E–W. Stepped chamber at the northern side. Skeleton of an infant, not in anatomical order. Personal adornment: ostrich eggshell and glass beads.

Tumulus 13. Round shaft, 1.10 m in diameter, 0.80 m deep. Stepped chamber at the southern side. Blockage of stone slabs, leaning obliquely at the western end. Skeleton of a woman (about 35), not in anatomical order. Personal adornment: hundreds of ostrich eggshell beads and a few faience beads.

EL-SADDA 4

The site (N19°17'22.5", E32°33'55.4") with some tumuli and a scatter of potsherds of Kerma Horizon date was discovered in 2004 on a rocky hilltop behind El-Sadda

village. Two tumuli were tested in the second half of February 2007 by Michał Sip; for details of the work and the finds, see below, p. 459–464).

EL-SADDA 34

The site, situated between the houses and fields of El-Sadda village (N19°17'07.5", E32°43'24.2"), was shown to the excavators by local villagers in January 2007. A few mounds were concentrated in an area 90 by 35 m, bordered on the east by a wadi, on the west by houses, on the north by fields. The ground was under cultivation. The surface was strewn with eroded human bones and potsherds, both medieval and modern. The outlines of rectangular box features of stone could be observed. The site was identified as a medieval Christian cemetery (not connected with English soldiers as the villagers



Fig. 8. Iron cross from Grave 25
(Photo P. Osypiński)

thought). Rescue excavations started at the beginning of February 2007 and were carried out by Klaudyna Trawińska under the supervision of Piotr Osypiński.

A trench (10 by 10 m) was cleared in the southeastern corner of the site. Six of the 22 graves recorded were explored, the selection being based not so much on the burial customs involved — Christian practices are fairly well investigated — but on the objective of enlarging the set of adult

skeletons available for anthropological measurement. Three male, two female and one small child burial were investigated (for preliminary results, see below, Appendix 3). Flat stone slabs used in the blockages were recorded in some of the graves. The orientation of the burials followed Christian custom: more or less E-W with head to the west.

The other trench (10 by 10 m) was excavated on a nearby hill, some 30 m to the



Fig. 9. Grave G25 at El-Sadda 34, viewed with the stone covering in place (left) and after opening (Photo P. Osypiński)

northwest of the first one. The main purpose was to compare burial density in different place. Seven more graves were discovered, some of them destroyed by modern building (water reservoir or *saqiyah*). Two graves

(G23 and G25, *Fig. 9*) were explored, both of men. In both cases, stone blockages were found. An iron cross [*Fig. 8*] on the chest of the individual from Grave 25 was the only element of personal adornment found.

HAGAR EL-BEIDA 1 (TUMULUS 10)

The huge tumulus in Hagar el-Beida (N19°19'31.0", E32°45'21.0") started to be investigated in early 2005 (Lemiesz 2007), was continued but not completed in 2006, and in the last week of January 2007 another attempt was made to complete the excavation. The present season, which was again interrupted midway, was supervised by Piotr Osypiński.

The trench in the eastern part of the superstructure was deepened, reaching a level approximately 0.50 m above bedrock. The stone revetment of the superstructure, which is preserved to a height of 1.70 m above bedrock was cleared of rubble and documented [*Fig. 10*]. Much of the western part of the superstructure was removed to prepare the ground for a 10 by 10 m trench at the



Fig. 10. Stone revetment of the superstructure of tumulus T10 after cleaning (Photo P. Osypiński)

center of the tumulus. The remaining 0.50 m of superstructure deposits inside the trench were then removed, revealing in effect the outlines of the grave shaft. A robbery shaft, approximately 2 m in diameter, became apparent right at the beginning of the exploration.

A mud-brick feature, (a blockage possibly) was found in the northern part of the trench, standing on bedrock and suggesting some degree of preservation. The rest of the trench was filled with yellow gravel, indicating that the shaft filling consisted of gravel.

CONCLUSIONS

The winter season in 2007 was the last one in the neighborhood of the El-Sadda village, which is located farthest to the southwest within the limits of the Polish concession.

On the whole, the well-preserved remains represent Late-Meroitic and post-Meroitic occupation. The scarcity of prehistoric sites (observed also in other parts of the Polish concession) may be due to destruction imposed by later activities, including agriculture (many sites have disappeared under cultivation, including ones that were located during the survey in the past two or three years). The other explanation is that prehistoric sites could lie further out in the desert, in places where the present survey has not reached. The common presence of singular Neolithic and so-called Kerma potsherds in the area of the survey seems to speak in favor of the first explanation.

Evidence of Meroitic-period settlement in the Fourth Cataract area is poor, and Old Kush features seem to bear many provincial traits. Strong Late-Meroitic and post-Meroitic occupation is attested by the large cemeteries in El-Sadda and Hagar el-Beida. The fortified town on the opposite bank of the river (El-Kab) may have been built for the protection of new officials against a local population. It is still not clear who the groups (tribes?) were that were responsible for building the huge tombs of the like of El-Zuma and Tanqasi.

The salvage effort in the Fourth Cataract region by archaeologists from Poland, among others, has contributed to the saving and study of Nubian heritage. While answering many existing questions, it has presented new issues and problems that will require further research.

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APPENDIX 1

FAUNAL REMAINS FROM THE NEOLITHIC SITE OF EL-SADDA 28

Marta Osypińska

Archaeological testing at the site of el-Sadda 28 (trenches 28 and 28A) brought an assemblage of 564 osteological animal remains. Practically the entire material was fossilized. The presence of all elements of the skeleton, meaning bones of different density, indicates that the remains were not moved by water. The state of preservation and the presence of diagnostic features lead to the assumption that they were buried fairly quickly in a depositional setting. The black and brown surface of the fossils was proof of iron and manganese being present in the environment and of oxygenic conditions of deposition (Denys 2002: 469–484). Despite the relatively good condition of the bones, only 32% of all the remains could be identified by taxon, species and anatomy. In many cases, only the class or order could be determined.

The majority of the remains (96%) belonged to mammals (*Mammalia*). Other identified remains included birds (*Aves*), reptiles (*Reptilia*), fish (*Pisces*) and mollusks (*Molusca*). Most of the unidentified bones of mammals are fragments of long bones and parts of the spongy matter. All the bird remains are ostrich eggshell fragments. The one identified remnant of a reptile is a piece of the skin of a Nile crocodile (*Crocodylus niloticus*). One vertebra of fish from the catfish family (*Siluriformes* sp.) was recorded. The mollusk shells include 16 shell fragments of Nile oyster (*Ethetaria*

nilothica) and three fragments of shells of an unidentified snail.

The remains recorded in trench 28 represented mostly cattle (*Bos primigenius* f. *domestica*). These were fragments of premolars, molars, mandible, vertebrae, tibia, digits and metapodium. Unidentified bones comprised mainly parts of the dense matter of long bones. Also recorded were six ostrich eggshell fragments, most probably raw material for making beads, and fragments of oyster shell.

The catalogue of remains from trench 28A was slightly more varied. The species distribution permitted two levels to be distinguished. The upper layers 0–10 contained mainly the bones of ruminants: cattle and the small ruminants, including one sheep bone. In anatomical terms, the remains were quite varied. Fragments of teeth, ribs, vertebrae and long limb bones were all recorded. Whole digits were also noted, permitting measurements to be taken [Table 1]. Two of the cattle bones from this level bore traces of damages — one femoral epiphysis fragment was burned, another epiphysis fragment from a distal long bone had a hole in it about 1.5 cm deep. The symmetrical position and relatively large diameter of this hole suggests its intentional nature; it may have been prepared for use as a handle for a sharp tool, an awl or chisel.

Two bones of predators, foxes in this case, were recorded, but they appeared to be

modern. Also a fragment of ostrich eggshell was noted in the upper layers, as well as an oyster shell fragment and the piece of crocodile skin. Ostrich eggshell was present as a raw material for making beads, as proved by the presence of unfinished products, a considerable number of ready beads and a stone for polishing the beads (see above, *Fig. 1* on XXX]. The beads should be connected with the functioning of a Neolithic community, this indicated by the way in which the holes were made. They are relatively large and have a conical irregular shape which is achieved by drilling with a tool of triangular shape, most probably a flint tool in this case.

The lower layers in trench 28A yielded no remains of domesticated species. Mammalian remains were in predominance, including artiodactyls (*Artiodactyla*). The bones of a large ruminant (*Bovidae*) could not be precisely identified by species. It could have been wild cattle (*Bos primigenius*), African buffalo (*Syncerus caffer*) or giraffe (*Giraffa camelopardalis*). A large number of dorcas gazelle remains (*Gazella dorcas*) was also noted. In anatomical terms, the assemblage

from the lower layers of the trench included fragments of pelvis, metatarsus, metapodium, talus and teeth. The unidentified remains include fragments of long bone shafts. Shells of snails, a fragment of an oyster shell and a fish vertebra was also recorded.

Two phases of the site can be distinguished based on an analysis of the faunal assemblage. The older phase in the lower layers of trench 28A represents most probably a more humid ecosystem, resembling a forest savannah. No domesticates were recorded among the bones from this level. Instead there were the remains of two species of artiodactyls. One was a large species, a buffalo or giraffe, and the other a small ruminant — dorcas gazelle. This set is also distinguished by the presence of snails and fish.

The principal group in the osteological material from trench 28 and from the upper layers of trench 28A was made up of cattle bones representing practically all parts of the skeleton. Beside them there were large quantities of ostrich eggshell pieces used for making beads. No snails or fish remains were recorded in this assemblage, and no bones of wild game either.

Table 1. Measurements of fossilized animal bones from site El-Sadda 28A

| CONTEXT | BONE | OSTEOMETRY |
|-----------------|---|-------------------------|
| | Cattle (<i>Bos primigenius</i> f. <i>domestica</i>) | |
| 28A/Layers 0–10 | <i>Phalanx media</i> | GL-39 Bp-24 Bd-20 SD-18 |
| 28A/Layers 0–10 | <i>Phalanx distalis</i> | Ld-44 DLS-47 |
| | Sheep (<i>Ovis orientalis</i> f. <i>domestica</i>) | |
| 28A/Layers 0–10 | <i>Talus</i> | GLI-29 GLm-28 Bd-16 |

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APPENDIX 2
 FAUNAL REMAINS FROM THE POST-MEROITIC
 CEMETERY OF EL-SADDA 1. SEASON 2007

Marta Osypińska

The assemblage of faunal remains from the burial chambers of two tumuli graves on the post-Meroitic cemetery at El-Sadda 1 was relatively rich compared to the standards of the site. The set counted altogether 52 bones and osteological fragments which were

identified by species and anatomical part. The condition of the bones was good with most bones being preserved intact. The observed bone damage concerned mainly rib fragments and occurred mainly during the plundering of the burial chambers.

Table 1. Bones of goat from Tumulus 83

| BONE | OSTEOMETRY | QUANTITY |
|------------------------|----------------------------|----------|
| <i>Cranium</i> | — | |
| <i>Dentes</i> | — | |
| <i>Mandibula</i> | — | |
| <i>Vertebrae</i> | — | |
| <i>Costae</i> | — | 12, left |
| <i>Scapula</i> | HS-129 Ld-88 SLC-18 GLP-32 | 1, left |
| <i>Humerus</i> | Bd-31, BT-32 | 1, left |
| <i>Radius</i> | Bp-30, SD-14, Bd-27 | 1, left |
| <i>Ulna</i> | — | |
| <i>Ossa carpi</i> | — | |
| <i>O. metacarpalia</i> | — | |
| <i>Pelvis</i> | — | ½, left |
| <i>Femur</i> | — | |
| <i>Tibia</i> | Bd-27 SD-12 | 1, left |
| <i>Talus</i> | GLI-30 GLm-27 | 1, left |
| <i>Calcaneus</i> | GL-55 | 1, left |
| <i>O. metatarsalia</i> | — | |
| <i>Ossa digitorum</i> | — | |

TUMULUS 83

Tumulus 83 was part of group I, which covered the southern part of the cemetery. The burial chamber had been plundered leaving bones, both human and animal, mixed and in disarray. All were found in the southern part of the chamber. The assemblage of faunal remains comprised 19 bones, all coming from a single individual of the goat species (*Capra aegagrus* f. *domestica*). The recorded bones came from cuts of good meat. No skull bones, teeth and distal parts of limbs were discovered. The offering in the chamber comprised the left side of the animal's body, including ribs, shoulder blade, humerus, radius, left half of pelvis, tibia, talus and calcaneus.

The animal in Tumulus 83 was not fully mature morphologically. The degree of onto-

genic development indicates that it was slaughtered before and very probably close to the age of 15–20 months. Osteometric measurements were taken nonetheless, because the animal had reached almost full size [Table 1] and hence the data could be used for comparison with results obtained for the bones of goat from 7th century contexts on the site of Old Dongola (Osypińska 2004). A comparative analysis leaves no doubt that the same species of Nubian Desert goat was represented at both sites (Epstein 1971).

TUMULUS 67

Tumulus 67 lay among the tombs of group VI, that is, the northern part of the cemetery. In archaeozoological terms, this was undoubtedly the richest of the El-Sadda tombs. Altogether 43 bones were discovered in the

Table 2. Bones of goat from the western chamber of Tumulus 67

| BONE | OSTEOMETRY | QUANTITY |
|------------------------|---|----------------|
| <i>Cranium</i> | — | |
| <i>Dentes</i> | — | |
| <i>Mandibula</i> | — | |
| <i>Vertebrae</i> | — | |
| <i>Costae</i> | — | 9, left |
| <i>Scapula</i> | SLC-17 GLP-30 Ld-87 LG-22 BG-19 | 1, left |
| <i>Humerus</i> | Bd-27, SD-13 | 1, left |
| <i>Radius</i> | Bp-29, SD-15 | 1, left |
| <i>Ulna</i> | — | |
| <i>Ossa carpi</i> | — | |
| <i>O. metacarpalia</i> | — | |
| <i>Pelvis</i> | — | 1, whole |
| <i>Femur</i> | — | 1, right |
| <i>Tibia</i> | Bd-24, SD-12 | 1, right |
| <i>Talus</i> | GLI-30, GLm-28, Bd-19; GLI-27, GLm-26, Bd-18 | 2, left |
| <i>Calcaneus</i> | GL-60 | left and right |
| <i>O. metatarsalia</i> | — | |
| <i>Ossa digitorum</i> | — | |

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two chambers, belonging to two different species, which was also exceptional with regard to this site. Two sheep (*Ovis orientalia* f. *domestica*) and one goat (*Capra aegagrus* f. *domestica*) had been deposited in the two chambers and of this one sheep and one goat in the western chamber. The remains represented only the best cuts of meat.

No skull bones, teeth or distal sections of the limbs were present. The bones of sheep recorded in the western chamber include ribs, shoulder blade, humerus and radius, all from the left side of the skeleton. One whole pelvis and the right femur and tibia bones were also recorded. The goat remains were analogous in terms of the anatomy: ribs, shoulder blade,

Table 3. Bones of sheep from the western and southern chambers of Tumulus 67

| BONE | OSTEOMETRY | QUANTITY | OSTEOMETRY | QUANTITY |
|------------------------|--|-----------------------|------------------------|----------|
| | Western chamber | | Southern chamber | |
| <i>Cranium</i> | — | — | — | — |
| <i>Dentes</i> | — | — | — | — |
| <i>Mandibula</i> | — | — | — | — |
| <i>Vertebrae</i> | — | 2, v. <i>lumbales</i> | — | — |
| <i>Costae</i> | — | — | — | 3, left |
| <i>Scapula</i> | Ld-103 SLC-19 GLP-33 HS-170 LG-25 BG-24 | 1, left | — | — |
| <i>Humerus</i> | Bd-31 SD-14 GLC-138 GLI-160 | 1, left | — | — |
| <i>Radius</i> | Bp-33 SD-17 Bd-30 GL-170 | 1, left | — | — |
| <i>Ulna</i> | — | — | — | — |
| <i>Ossa carpi</i> | — | — | — | — |
| <i>O. metacarpalia</i> | — | — | — | — |
| <i>Pelvis</i> | — | — | — | 1, right |
| <i>Femur</i> | SD-15, Bd-38, GLC-18, GL-19 | 1, right | — | — |
| <i>Tibia</i> | SD-14 Bd-28 Bp-41 GL-23 Li-22 | 1, right | Bd-26 SD-15 Bp-43 | 1, left |
| <i>Talus</i> | — | — | GLI-28 GLm-27 Bd-20 | 1, left |
| <i>Calcaneus</i> | — | — | GL-56 | 1, left |
| <i>O. metatarsalia</i> | — | — | — | — |
| <i>Ossa digitorum</i> | — | — | — | — |

humerus and radius, all from the left side of the skeleton. Also recorded was the pelvis, femur, tibia, talus and two calcaneus bones. The pelvis bone was from the right side of the skeleton and the calcaneus bones were both left and right. Interestingly, in both cases there is a consistency in the deposition pattern with the remains representing the left pectoral limb and the right pelvic one.

The remains found in the southern chamber had been placed by the feet of the skeleton in the western part of the chamber. The animal was identified as a goat. The bones included ribs, half a pelvis, tibia, talus and calcaneus bone, all from the left side of the skeleton except for the pelvis.

The sheep from the western chamber was an adult individual, slaughtered after the age of 3.5 years. Osteometric analysis indicates that it was about 68 cm high at the withers (Driesch, Boessneck 1974) [*Table 3*]. The animal's height and the bone measurements correspond to results for sheep remains from other Christian sites in Nubia (Osypińska 2004). A comparative analysis identified the

species as most probably a thin-tailed sheep of the Sudan Desert group (Epstein 1971), domesticated in antiquity and still living in the region of northern Sudan today. This particular variety is often hornless, has dropping ears, an arched nose and long hanging tail. The wool of these animals is mixed with fairly large amounts of down which is separated from the covering hair. The most frequent coloring is different shades of brown through beige to white.

Goat bones found in the western chamber came from a young individual slaughtered before the age of 3.5 years [*Table 2*]. The bones revealed evidence of quartering in the form of cuts at the epiphysis of the radial and femoral bones.

The bones of the sheep recorded in the southern chamber represented an adult individual, slaughtered after reaching an age of 3.5 years [*cf. Table 3*]. A comparative analysis of osteometric results for this and the animal from the western chamber identified the remains as also belonging to the Sudan Desert thin-tailed group.

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APPENDIX 3

PRELIMINARY REPORT ON HUMAN SKELETAL
REMAINS FROM THE ARCHAEOLOGICAL SITES
IN EL-SADDA

Łukasz Maurycy Stanaszek

The examined skeletons come from four chronologically and culturally different sites situated around the El-Sadda village: SD1, post-Meroitic; SD4, end of Kerma Horizon; SD24, Meroitic and post-Meroitic; SD34, Christian.

The age at death and/or sex of altogether 52 skeletons were determined during the 2005 and 2007 seasons. Three of the graves (SD1-G1; SD1-G4; SD1-T83) were empty, possibly because they were cenotaphs or had been robbed in the past. Site SD1 yielded 25 skeletons in the 2005 season and another 12 in 2007 (jointly 18 male, 16 female, three infant). Explorations in 2007 at three other sites gave the following results: site SD4: three skeletons (one male, two female); SD24: four skeletons (one male, one female, two infant); site SD34: eight skeletons (five male, two female, one infant). The table below presents the results for sexing, ageing and morphological characteristics of the individuals without giving the cultural context of particular graves.

A structure analysis by age and sex was possible only for individuals from the cemetery on site SD1, the low number of skeletons on the remaining sites making any comparisons statistically insignificant. As shown in the diagram [Fig. 1], the number of females in this group was slightly less (47.1%)

than that of men. There is a distinctive absence of infant graves (only SD-T75); the two adolescent (*iuvenis*) individuals (SD1-T10; SD1-T78) should be assumed as having been treated as adults by their contemporaries (especially if they were young females). More than half the burials on this site represents mature and aged persons, the predominant category being adult males.

The long bones and crania of all adult individuals were measured using the Martin technique (Martin, Saller 1957; Trotter, Gleser 1952). Cranioscopic and nonmetric traits were also noted (Piasecki 1992; Buikstra, Ubelaker 1994). The results of the analysis were presented in a separate paper.

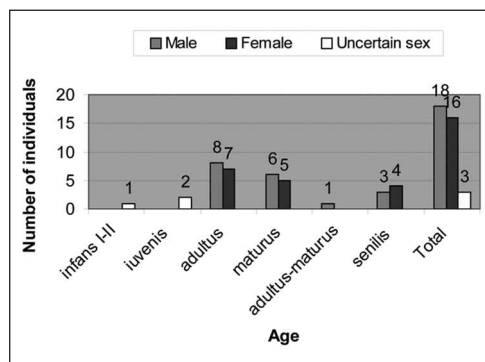


Fig. 1. Structure by age and sex of the human skeletal remains from El-Sadda 1

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Table 1. Sexing and aging of human skeletal remains from the El-Sadda sites excavated in seasons 2005 and 2007 (the latter marked with *), including more important morphological characteristics

| No. | Grave/Feature | Sex | Age | Comments, most important pathologies |
|-----|---------------|-----|------------------------|---|
| 1. | SD1-G1 | ? | ? | Empty grave. |
| 2. | SD1-G4 | ? | ? | Empty grave. |
| 3. | SD1-T1 | F | <i>Adultus</i> (25–35) | Osteomas on frontal and both parietal bones. |
| 4. | SD1-T2 | F? | <i>Adultus</i> (20–25) | — |
| 5. | SD1-T3 | F? | <i>Senilis</i> (55–60) | Slight <i>cribra orbitalia</i> ; degeneration of articular surfaces (whole skeleton); strong degenerative changes of right proximal epiphysis of femur (together with acetabulum of pelvis), as well as elbow joint of right upper limb (trochlear notch). |
| 6. | SD1-T4 | M | <i>Maturus</i> (35–45) | Strong tartar; parodontitis. |
| 7. | SD1-T5 | F? | <i>Maturus</i> (45–55) | Oval-shaped hollow (ø approx. 4 mm) on frontal bone (approx. 20 mm along the upper margin of the right orbit) — evidence of intravital, healed trauma; tartar; slightly expressed parodontitis; fistula around the tooth root in right $_2$ M (mandible). |
| 8. | SD1-T6 | F? | <i>Adultus</i> (20–25) | Oval-shaped hole (ø 5 mm) in squamous part of occipital bone showing evidence of healing; below this, a second, flatter hollow (8×8 mm), reached to diploë and also healed. |
| 9. | SD1-T9* | M | <i>Maturus</i> (35–45) | Slight tartar; <i>post mortem</i> fracture on left parietal bone (near squamosal border); intravital fracture near acromial end of right clavicle (healed, shortened and crookedly healed); intravital defects (tumor?) in two lumbar (L2–L3) and one thoracic (Th12) vertebral bodies. |
| 10. | SD1-T10 | ? | <i>Iuvenis</i> | No data. |

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| No. | Grave/Feature | Sex | Age | Comments, most important pathologies |
|-----|---------------|-----|------------------------|---|
| 11. | SD1-T11 | M | <i>Maturus</i> (45–55) | <i>Post mortem</i> hole in right parietal bone (ø approx. 2 mm); slight paradentitis. |
| 12. | SD1-T12* | F | <i>Maturus</i> (35–45) | Fistula around tooth root in left M ¹ (maxilla); adhesion of sacrum and coccyx; slight osteophytes on edges of lumbar vertebral bodies. |
| 13. | SD1-T13 | F | <i>Maturus</i> (45–55) | Three concentric, transversal longitudinal fractures on frontal bone and both parietal bones (trauma — <i>causa mortis</i> ?); oval-shaped hollow (20×26 mm) on sagittal suture (S2/S3) reached to diploë with slight evidence of healing (<i>causa mortis</i> ?). |
| 14. | SD1-T15* | F | <i>Adultus</i> (20–30) | Incomplete (partial) mummification (lower and upper limbs; curly hair preserved on cranium); strong facial prognathism; both humeri broken <i>post mortem</i> (by robbers?). |
| 15. | SD1-T17* | M | <i>Maturus</i> (40–45) | Agminate incisors (mandible); slight osteophytes on edges of lumbar vertebral bodies. |
| 16. | SD1-T18 | F? | <i>Senilis</i> (55–65) | — |
| 17. | SD1-T28 | F | <i>Adultus</i> (30–35) | Slight <i>cribra orbitalia</i> . |
| 18. | SD1-T33 | F? | <i>Adultus</i> (25–35) | Strongly expressed <i>cribra orbitalia</i> ; hollow on squamous part of occipital bone (11×9 mm) — evidence of healed trauma; longitudinal bone eminence (approx. 36 mm long) near <i>pars verticalis</i> sagittal suture. |
| 19. | SD1-T37* | F | <i>Maturus</i> (40–50) | Preserved remains of soft tissues; obliteration of dental alveoli of mandible (left M ₁ –M ₃) and maxilla (right I ¹ –I ²); abnormal position of canine teeth in maxilla; degenerative changes of distal hand and foot phalanges; intravital defects in lumbar and thoracic vertebral bodies (tumor?); deformation of articular surfaces of vertebral bodies (porosity, osteophytes); slight deformation of sternal ends of ribs. |

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| No. | Grave/Feature | Sex | Age | Comments, most important pathologies |
|-----|---------------|-----|-----------------------------|--|
| 20. | SD1-T39* | F | <i>Senilis</i> (approx. 55) | Diastema (maxilla); obliteration of dental alveoli of mandible (right 2M - 3M and left M_1 , M_3) and maxilla (right 2M , 3M and left M^2 , M^3); inflammatory process of parodontium in maxilla (right M^2 - M^3); osteophytes on edges of vertebral bodies (especially <i>C</i> and <i>L</i>); flattening of lumbar vertebral bodies; deformation of articular surfaces and porosity of cervical vertebral bodies (<i>CV</i> - <i>CVI</i> coalesced); great number of bony eminences and infiltrations near articular surfaces on whole skeleton (e.g. femur, patella). |
| 21. | SD1-T44* | M | <i>Maturus</i> (35-45) | Fistulas around teeth roots on right 1I - 2I (maxilla); slight osteophytical changes on cervical and lumbar vertebral bodies; slight flattening of vertebral bodies; degenerative changes near auricular surfaces of ilium (right bone slightly coalesced with sacrum); degenerative changes of distal foot phalanges; degeneration of sternal end of the first, left rib (ossified cartilaginous part of rib). |
| 22. | SD1-T47 | F | <i>Adultus</i> (20-25) | Oval-shaped hollow (26×33 mm) in the middle of frontal bone (bony margin approx. 6 mm; healed and not reaching <i>lamina interna</i> — incomplete trepanation?); second hole (ø approx. 37 mm) on the right side of frontal bone (destroyed <i>post mortem</i> , obliteration on borders — complete trepanation?); internal side of cranium (right side of frontal bone and right parietal bone) — porous surface of <i>lamina interna</i> . |
| 23. | SD1-T48 | M? | <i>Adultus</i> (45-55) | — |
| 24. | SD1-T58 | F | <i>Maturus</i> (20-30) | — |
| 25. | SD1-T59* | M | <i>Senilis</i> (approx. 55) | Evidence of healed, intravital injuries (animal tooth marks, probably crocodile) located by elbow joint of right upper limb (distal epiphysis of humerus and proximal epiphysis of ulna); degenerative changes within phalanges of both hands; osteophytes on edges of lumbar vertebral bodies; degeneration of articular surfaces of cervical vertebral bodies and both patella. |

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| No. | Grave/Feature | Sex | Age | Comments, most important pathologies |
|-----|----------------------|-----|-----------------------------|--|
| 26. | SD1-T61 | M | <i>Adultus</i> (30–35) | — |
| 27. | SD1-T62 | M | <i>Adultus</i> (25–35) | — |
| 28. | SD1-T63* | M | <i>Adultus</i> (20–30) | Slight tartar. |
| 29. | SD1-T67* | M | <i>Senilis</i> (55–60) | Oval-shaped hollow (4×4 mm; 1 mm deep) on right side of frontal bone — evidence of healed trauma; fistulas around teeth roots in left M ¹ (maxilla) and right ₂ M (mandible); obliteration of dental alveoli of maxilla (left M ² –M ³ , right ¹ C) and mandible (left I ₁); parodontitis; spaces between teeth; slightly expressed osteophytes on edges of vertebral bodies. |
| 30. | SD1-T69 | M | <i>Adultus</i> (25–35) | — |
| 31. | SD1-T75 | ? | <i>Infans</i> I–II | No data. |
| 32. | SD1-T76 | M | <i>Maturus</i> (35–45) | — |
| 33. | SD1-T77 | M | <i>Adultus</i> (25–35) | — |
| 34. | SD1-T78 | ? | <i>Iuvenis</i> | No data. |
| 35. | SD1-T79 | F | <i>Senilis</i> (approx. 55) | Osteoma on frontal bone (7×7 mm); strong deformation and degenerative changes of all articular surfaces (bony infiltrations, irregularities). |
| 36. | SD1-T80 | M? | <i>Adultus–Maturus</i> | — |
| 37. | SD1-T81 + SD1-T81(?) | M | <i>Adultus</i> (25–35) | — |
| 38. | SD1-T82 | M | <i>Senilis</i> (55–65) | Reduced alveolar process. |
| 39. | SD1-T83 | ? | ? | Empty grave. |
| 40. | SD1-T85* | M | <i>Adultus</i> (25–35) | Archimorphic cranium; intravital fracture of right zygomatic bone (healed, but badly coalesced); traces of grave robbery (pieces of the same lumbar vertebra found in the grave and outside, differing in color due to post-depositional factors); sacrum coalesced with coccyx; slightly expressed changes (bony infiltration) near connection with left auricular surface of ilium and sacrum. |

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| No. | Grave/Feature | Sex | Age | Comments, most important pathologies |
|-----|---------------|-----|-------------------------------------|--|
| 41. | SD4-T1* | M | <i>Adultus</i> (20-30) | — |
| 42. | SD4-T2, G.1* | M | <i>Maturus</i> (40-50) | Slight <i>cribra orbitalia</i> ; osteophytes on edges of lumbar vertebral bodies; flattening of vertebral bodies; degenerative changes of distal hand phalanges. (rheumatism) |
| 43. | SD4-T2, G.2* | F | <i>Adultus</i> (20–25) | Hole (26×23 mm) with poorly healed edges in squamous part of occipital bone and right parietal bone (near middle of lambdoid suture). |
| 44. | SD24-T2* | ? | <i>Infans</i> II (approx. 10) | Delicate skeleton suggestive of female. |
| 45. | SD24-T4* | M | <i>Iuuenis/Adultus</i> (18–20) | — |
| 46. | SD24-T6* | ? | <i>Infans</i> I (approx. 3) | — |
| 47. | SD24-T13* | F | <i>Adultus/Maturus</i> (approx. 35) | Strong tartar; slight flattening of lumbar and thoracic vertebral bodies; not very strongly expressed degenerative changes of hand phalanges (rheumatism) |
| 48. | SD34-G1* | F | <i>Maturus</i> (35–45) | Dental caries and fistula around tooth root near right $_1M$ (mandible); obliteration of dental alveoli of mandible (left M_2 – M_3) and maxilla (left M^1 – M^3 and right 2M – 3M); parodontitis; strong tartar; concentric fracture in the center of right parietal bone (trauma — <i>casusa mortis</i> ?); slightly expressed osteophytes on edges of vertebral bodies. |
| 49. | SD34-G2* | M | <i>Adultus</i> (30–35) | Parodontitis; sacral bone coalesced with coccyx; sternum-manubrium coalesced with body. |
| 50. | SD34-G3* | F | <i>Maturus</i> (35–40) | Quite strong tartar; dental caries on left M_2 (mandible); obliteration of dental alveolus of mandible (right $_2P$). |
| 51. | SD34-G5* | M | <i>Adultus</i> (20–25) | Preserved fragments of skin and soft tissues. |
| 52. | SD34-G10* | ? | <i>Infans</i> I (2–3) | — |
| 53. | SD34-G11* | M | <i>Iuuenis/Adultus</i> (approx. 20) | Slight <i>cribra orbitalia</i> (in one orbit only). |

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| No. | Grave/Feature | Sex | Age | Comments, most important pathologies |
|-----|---------------|-----|------------------------|---|
| 54. | SD34-G23* | M | <i>Maturus</i> (45–55) | Supine, tibiae crossed; strongly expressed osteophytes on edges of lumbar vertebral bodies; flattening of vertebral bodies (changes due to overwork). |
| 55. | SD34-G25* | M | <i>Maturus</i> (35–45) | Fistula around tooth root near left P ₁ (mandible); dental caries on left M ₃ (mandible); obliteration of dental alveoli of mandible (I ₁ –I ₂) and maxilla (M ¹ –M ³ , ¹ M– ³ M); paradentitis; slightly expressed osteophytes on edges of lumbar vertebral bodies. |

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