

EARLY MAKURIA RESEARCH PROJECT: INTERIM REPORT ON THE EXCAVATION AT EL-DETTI IN 2014 AND 2015

Mahmoud El-Tayeb,¹ Ewa Czyżewska-Zalewska,²
Zofia Kowarska³ and Szymon Lenarczyk⁴
with appendix by Łukasz Zieliński⁵

^{1,2} Polish Centre of Mediterranean Archaeology, University of Warsaw, ^{3,4,5} independent

Abstract: Burial structures and the assemblages found inside them at the site of el-Detti, about 13 km downstream from Karima and 7 km upstream from el-Zuma, were explored in 2014 and 2015 by a joint team from the Polish Centre of Mediterranean Archaeology University of Warsaw and the National Corporation for Antiquities and Museums of Sudan. The aim was to enable comparison with the excavated burials at el-Zuma, a nearby tumuli field explored by the Early Makuria Research Project in recent years. Special attention was paid to metal artifacts from the tombs (studied in the appendix), which contribute to a better understanding of the local social and cultural traditions. The focus of the Early Makuria Research Project on examining the mortuary customs at el-Detti has helped to identify the burial practices of Early Makurian society and to trace the spread of Early Makurian society over time.

Keywords: el-Detti, tumuli, graves, Early Makuria, metal artifacts

The el-Detti village lies about 13 km downstream from Karima and 7 km upstream from el-Zuma, between the Royal Cemetery at el-Kurru and the Christian site at Kajabi [see *Fig. 2*]. The cemetery site is located northeast of the village, separated from it by Khor el-Shakil, which runs due south to the Nile, between the Nile and the Karima–Nawa asphalt road to the north. The main part of the site covers an area of about 500 m by 400 m. The most numerous group of tumuli (50 structures) is located in the southern part of the area [see *Fig. 2*]. Another five structures and the largest tumulus (Tumulus 45),

unfortunately completely destroyed by modern construction work, are situated about 300 m northeast of the main cluster of graves.

All the tumuli were penetrated in the past. Recent intensive construction work has affected the area to the north and northwest of the main graves. The ground has been levelled in part, potentially destroying other structures. The area is also endangered by seasonal water flows and transected by numerous water-courses (khors) around particular tumuli, which contribute to their gradual degradation.

Running on the southeastern side of the tumuli field are the remains of a long wall built of rough unbonded chunks of stone [Fig. 1]. The structure follows an irregular L-shaped plan, the shorter side oriented

northwest, the longer side southeast, descending toward the river and ending at the edge of a rocky plateau and the flood plain. The surface collection of finds from the plateau strongly indicates Christian



Fig. 1. Wall running on the southeastern fringes of the tumuli field

Team

Dates of work: 10 January–15 March 2014; 9 January–28 February 2015

Director: Assoc. Prof. Mahmoud El-Tayeb, archaeologist (PCMA UW; 2014, 2015)

NCAM Inspector: Neamat Mohamed El-Hassan (2014, 2015)

Archaeologists: Anna Jaklewicz (independent; 2015), Łukasz Zieliński, metal artifacts (independent; 2015)

Ceramologist: Ewa Czyżewska-Zalewska (PCMA UW; 2015)

Surveyors: Szymon Lenarczyk (2014, 2015), Zofia Kowarska (2014, 2015), Jolanta Juchniewicz (2014) (all independent)

Archaeozoologist: Dr. Urszula Iwaszczuk (PCMA UW; 2015)

Photographer: Adam Kamrowski (Archaeological Museum in Gdańsk; 2014, 2015)

Film and drone operator: Tomasz Wojtczak (freelance; 2015)

Acknowledgments

The Early Makuria Research Project is a joint mission of the Polish Centre of Mediterranean Archaeology of the University of Warsaw (PCMA) and the National Corporation for Antiquities and Museums (NCAM). The PCMA is the organizer and provides part funding; the current seasons of work have been financed mainly by the Qatar–Sudan Archaeological Project (QSAP).

Tomb drawings A. Jaklewicz, Z. Kowarska, S. Lenarczyk, E. Czyżewska-Zalewska; *digitizing* E. Czyżewska-Zalewska; *photos* A. Kamrowski

occupation. The structure does not seem to be part of a caravanserai, nor does it seem to have been defensive in nature. It may have been intended as a shelter, protecting

against the northeasterly winds sweeping across the high rock (see also Garcea and Sebastiani 1998: 69).

[ZK, SL, MT]

THE EXCAVATION PROJECT

The excavation of el-Detti, initiated in 2014 within the framework of the Early Makuria Research Project, was the first regular archaeological investigation of the site. It was surveyed in 1992 by a joint team from the National Corporation for Antiquities and Museums and the University of Cassino directed by Irene Vincentelli. The mission recorded the burial ground as Khor el-Shakil without exploring any of the tumuli (Garcea and Sebastiani 1998: 69). Reisner also seems to have had his input, having excavated a few tumuli and drawing a plan of the tumuli field in 1919, while he was working in the Napata region in the early years of the 20th century. He called the area Shekely in his notes. It may have been the ancient name of el-Detti and it has survived as the designation of the nearby major *khôr*.

The aim of the Early Makuria Research Project, which has been working in recent years in the tumuli field of el-Zuma just 7 km downstream from el-Detti, was to establish whether the Zuma burial ground actually extended beyond the limits set down for the cemetery by the 30 burials that are currently to be seen. The most common burials at Zuma, tumuli with L-shaped shaft, a variant of the Zuma type II (El-Tayeb 2012: 9, 61–75; El-Tayeb and Czyżewska 2011), have been noted at el-Zuma Gubli (South) and el-Dahasyra village, so the team extended its prospection both downstream toward Magashi village and upstream towards

el-Kurru and el-Detti. Close observation of the tumuli in el-Detti revealed two types of burial structures: most were of type III, which is the smallest type of burial, and one represented type II. The two types were evidently from the same period; hence it was deemed essential to examine the burial traditions at the two sites, their relationship to one another and their chronology.

Initial topographic and geodetic work was carried out by the Polish–Sudanese team in 2014, producing a contour map of the site (encompassing about 300 m by 350 m) and setting up a grid. An orthophotomap was made using a series of kite aerial photographs correlated with the results of surveys of individual tumuli. Several tumuli located in an area of approximately 250 m by 200 m in the southern part of the site were documented with Total Station and handheld GPS. 3D models of the terrain and the individual tumuli were also generated. The topographic work was concluded in 2015, documenting a total of 50 structures and simultaneously excavating a selected seven: T1 representing type II and the remaining six type III (El-Tayeb 2012: 65–66) [see *Fig. 2*].

At el-Detti, tumulus of type II is represented by a burial with L-shaped shaft surrounded by five burial chambers [see *Fig. 4*].

Type III tombs at el-Detti are a mixed group in terms of the location of the burial chamber. It can be positioned either on the

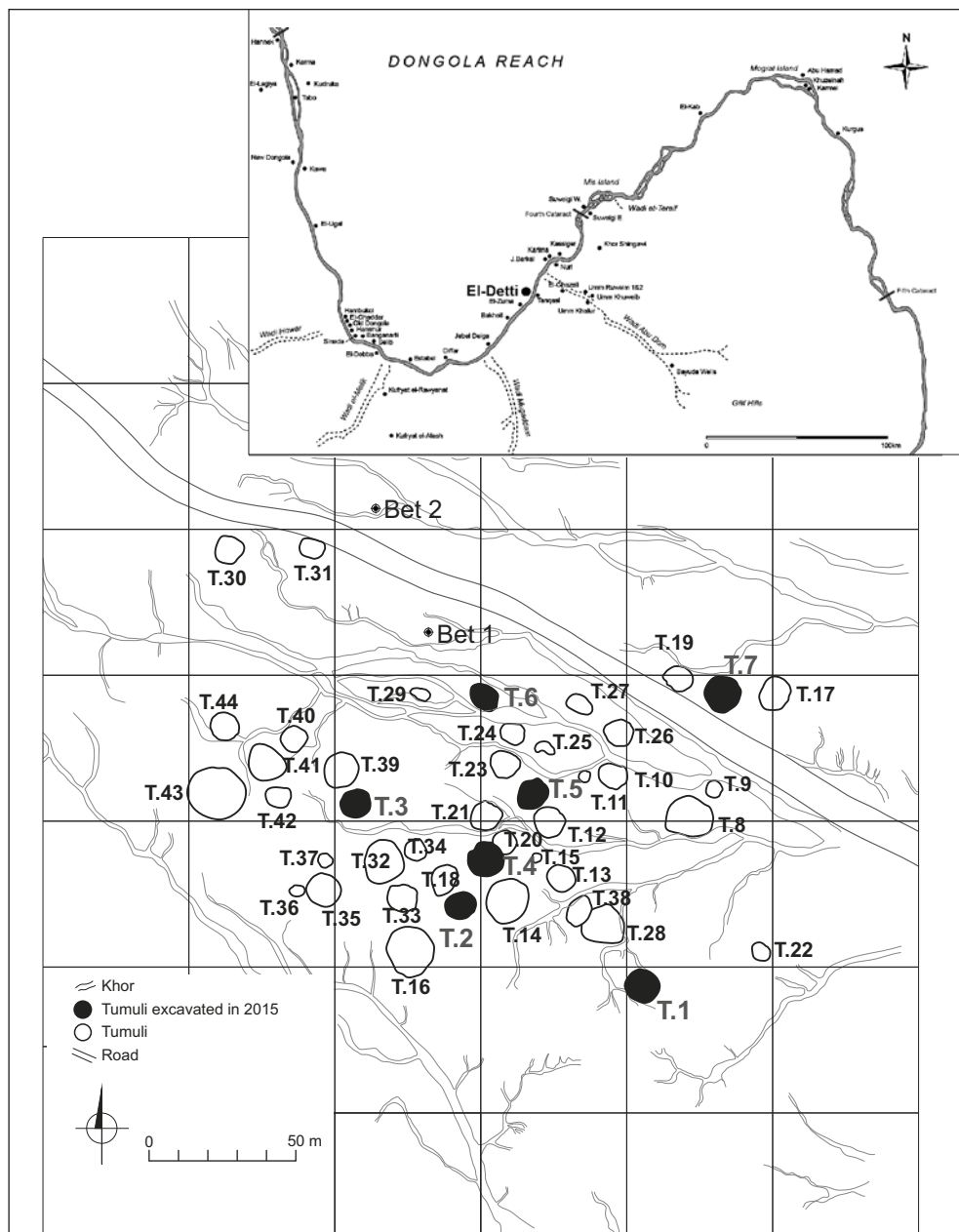


Fig. 2. Excavated tumuli T1–T7 in the main (southern) part of the site of el-Detti; inset, location of the site in the Dongola Reach (Drawing S. Lenarczyk, Z. Kowarska; processing S. Lenarczyk; map in inset after El-Tayeb 2012: 19, Fig. 1)

south, west or east side of the shaft, but the prevailing position (more than half of the excavated tombs) was on the western side of the shaft.

[ZK, SL, MT]

TUMULUS 1 (TYPE II)

The only tumulus of type II at the site had a roughly circular superstructure that had a maximum preserved height of 1.70 m before exploration. The maximum diameter of the superstructure is 25.00 m (N-S) and 28.50 m (E-W); the maximum diameter of the stone ring was 9.50 m [Figs 3, 4]. The burial shaft is L-shaped, 3.35 m long (N-S) at the top, 1.25 m wide in this part and 3.20 m (E-W), 1.50 m wide in the southern part. The length of the shaft at the bottom is respectively 2.20 m (N-S) and 2.35 m (E-W), the width being the same 0.95 m in both parts. The depth is 3.50 m. The upper edges of the shaft were damaged by looters. Blocking slabs were found in the northern part of the shaft, close to the northeastern wall, mixed in with bottles and beads.

Three oval-shaped chambers opened off the shaft. Chamber 1 is the main chamber (L. 2.50 m, W. 1.55 m, H. 0.80 m) and is located on the south. To the east of it is the neighboring chamber 2 (L. 1.15 m, W. 0.60 m, H. 0.60 m). Chamber 3 (L. 1.70 m, W. 1.30 m, H. 0.90 m) lies at the end of the northern section of the burial shaft. An incomplete skeleton, comprising the skull, jaw bone and long bones was found in the main chamber, and there were a few human bones in the shaft and inside chamber 2, in the southern part. It was not possible to determine or reconstruct the position of the body.

Grave offerings were few: some bottles, bowls and beads in chamber 1, found

around the three main clusters of human bones mixed with animal bones; a cup and a few beads in chamber 2 and in the southern part of the chamber animal and human bones were found mixed together; two cups and some beer jars fragments were recorded in chamber 3, but with no accompanying animal remains.

TUMULUS 2 (TYPE III)

The superstructure of the tumulus is round in shape. The maximum preserved height of the superstructure, before exploration, was 0.70 m and its maximum diameter was 10.60 m (E-W) and 9.30 m (N-S).

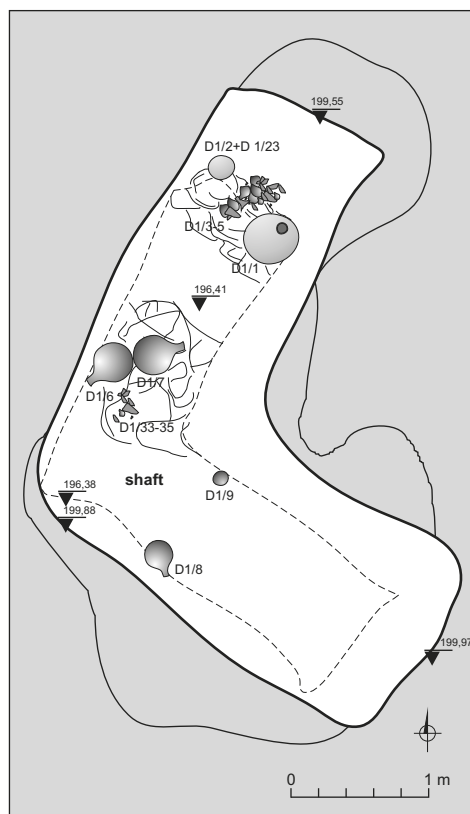


Fig. 3. Tumulus 1: plan of the burial shaft

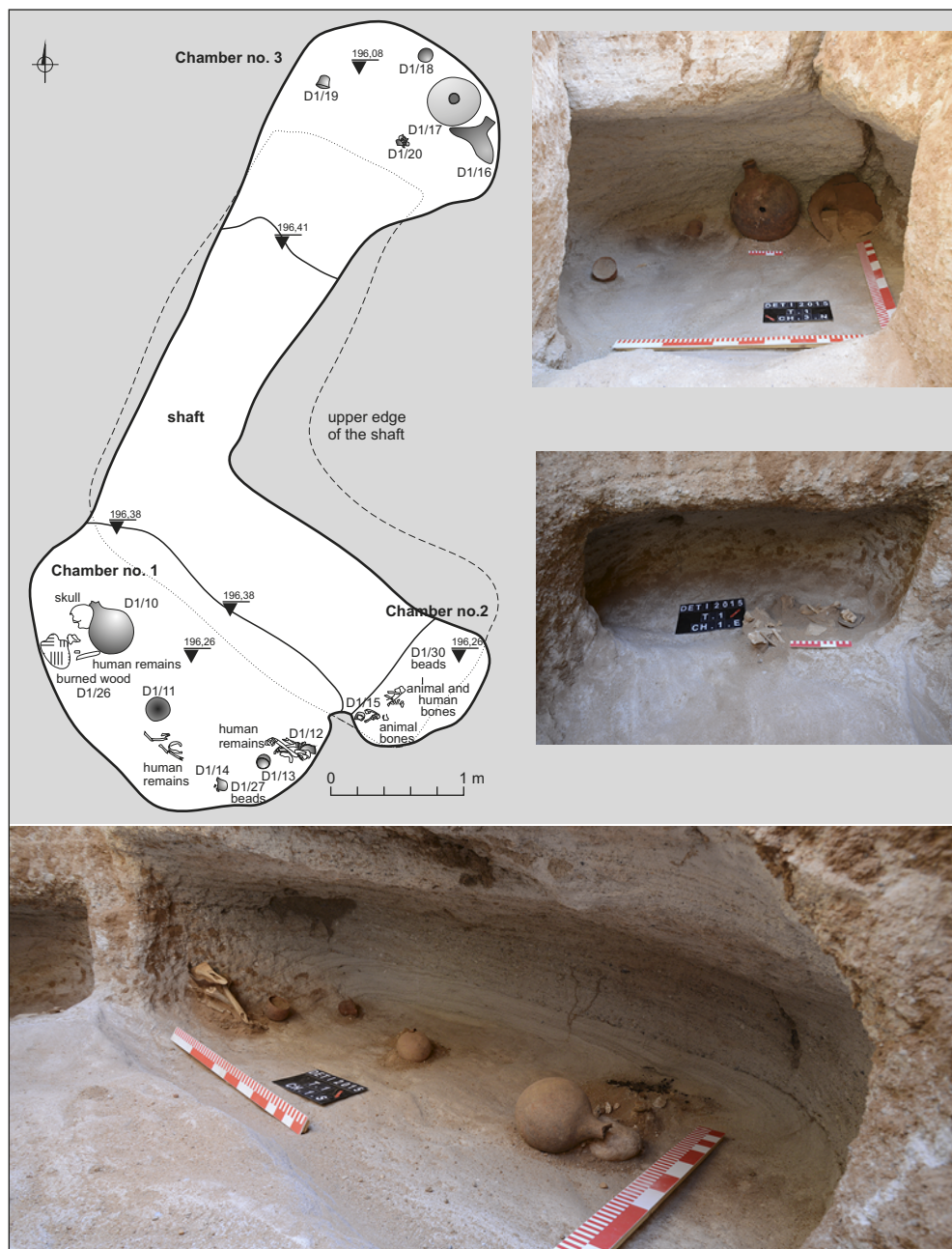


Fig. 4. Tumulus 1: top left, plan of the burial chambers and bottom of the shaft; bottom, front view of burial chamber 1; center right, front view of chamber 2; top right, front view of chamber 3

The maximum diameter of the stone ring is 9.50 m. The burial shaft is rectangular in shape and is oriented NE–SW [Fig. 5]. It is 2.20 m long and 1.70 m wide at the top and 1.70 m long and 1.10 m wide at the bottom; its depth is 2.50 m. The burial chamber is oval in shape, situated on the western side of the burial shaft. The chamber was sealed with a stone blockage [see Fig. 5 top right], of which only the

northeastern part is preserved. The ceiling of the chamber was damaged on the northern side. It was 2.30 m long (NE–SW), 1.00 m wide (NW–SE) and 0.67 m high originally.

The position of the body could not be determined as almost the whole skeleton had been pulled out into the shaft. Only a few human bones were found inside the chamber, but in the fill and not



Fig. 5. Tumulus 2: bottom, plan of the bottom of the shaft and burial chamber with finds; top left, view of the finds in place in the burial shaft; top right, view of the cleared bottom of the shaft with a fragment of the blocking visible in the entrance of the chamber on the right

on the bottom. The skull was discovered in the southeastern corner of the shaft together with the long bones, vertebrae and ribs.

Sherds used as scrapers for digging were found in the shaft. A few beads and a metal blade (for discussion of the metal

artifacts, see the appendix below) were discovered among the jumbled human and animal bones. A group of vessels was found 2 m below the surface level, filling almost the entire area of the shaft [see *Fig. 5* top left]. Only a few vessels were discovered intact inside the chamber: a cup and two

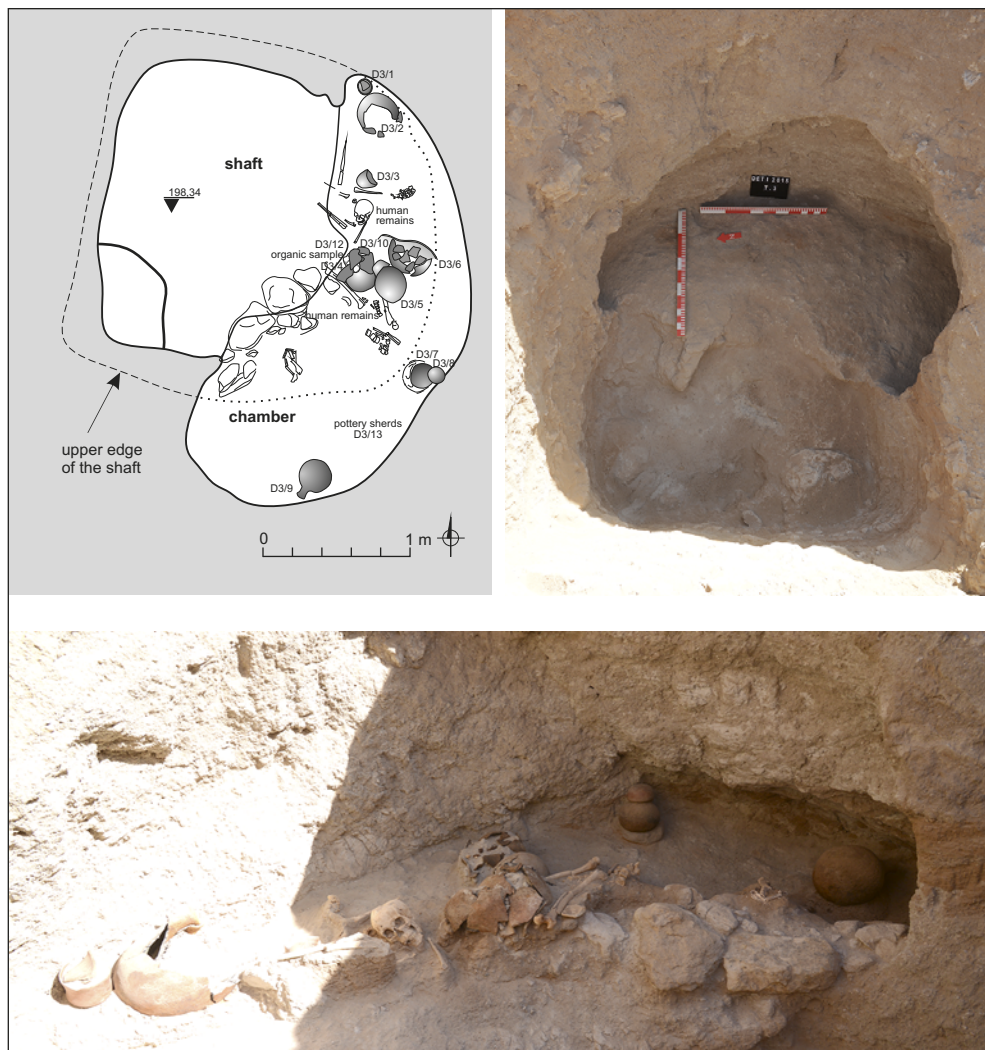


Fig. 6. Tumulus 3: top left, plan of the shaft and burial chamber; top right, view of the burial shaft with the collapsed roof of the chamber; bottom, view of the burial chamber from the shaft

bottles in its southern part. The cup D2/18 was found in a depression hollowed in the northern part of the chamber bottom. Over 40 beads as well as sheep and dog bones were found in the fill (see Iwaszczuk 2016, in this volume).

Looters had disturbed the burial, digging directly in the shaft and damaging the chamber ceiling. Blocking stones were found in the shaft, along with the human and animal bones, which had been dragged out of the chamber and were found among the remains of the blockage.

TUMULUS 3 (TYPE III)

The tumulus had a circular superstructure with a maximum height of 0.65 m before exploration and a maximum diameter of 10.30 m; the maximum diameter of the stone ring is 9.80 m. The burial shaft is irregular in shape, oriented N–S, the upper part destroyed [*Fig. 6* top right]. At the bottom, the shaft is 1.90 m long and 1.00 m wide, measuring 2.50 m in depth. A curved burial chamber opened off the eastern side of the shaft, the southern part turning to the west. A looters' hole had destroyed the ceiling of the chamber, making it impossible to reconstruct the original height. Its dimensions are 2.90 m (N–S) and 1.40 m (E–W).

The fill of the shaft contained a jumble of human bones, pottery sherds and stones from the blocking. Fragments of ribs, vertebrae and long bones were found in the shaft, but the main set of human remains was in the burial chamber, including six vertebrae in anatomical position in the northern part of the chamber. A skull oriented to the west was located in the western part. It is likely that the body had been deposited with the head to the northeast and facing west [*Fig. 6* bottom].

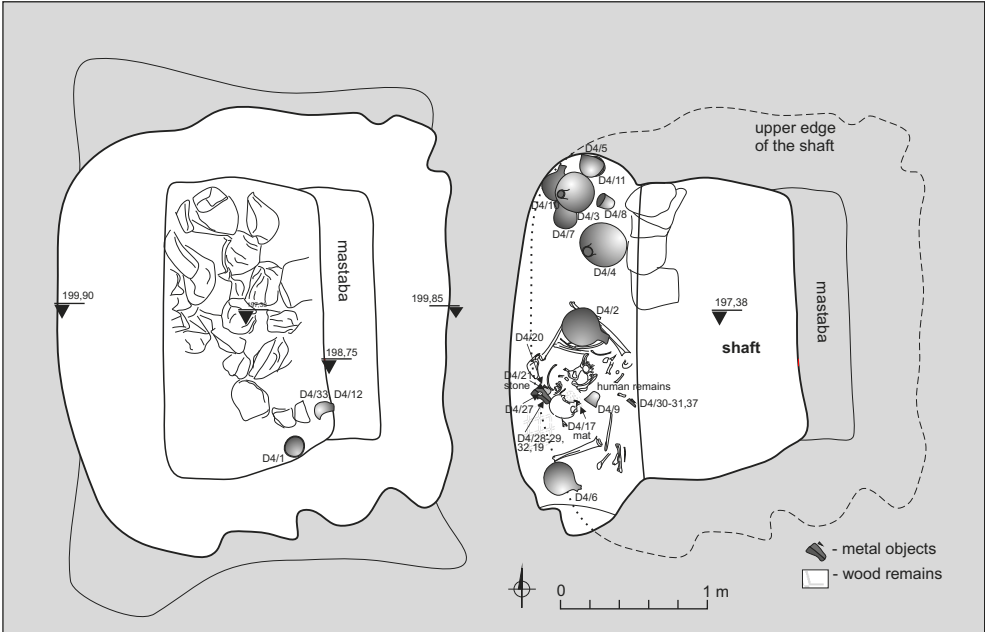
Potsherd scrapers in the fill of the shaft attested to looting in the past. The main group of vessels was discovered in the central part of the chamber, two vessels in the northern part and one bottle in the southern one. An upside down bowl D3/8 covered the top of bottle D3/7. Animal remains were found in the southern part of the chamber (see Iwaszczuk 2016, in this volume). No beads or metal objects were recorded.

TUMULUS 4 (TYPE III)

The superstructure was round in shape, the maximum height before exploration being 0.40 m. The maximum diameter is 11.70 m (N–S) and 12.30 m (E–W), whereas the stone ring reached a maximum of 10.00 m in diameter. The burial shaft was almost square in shape, oriented NS–EW, 2.56 m long (N–S) and 2.50 m wide (E–W) as measured at the upper end and 1.90 m long and 1.10 m wide at the bottom. It was 2.30 m deep. A step was cut in the east wall of the shaft, 1.16 m below the surface. An oval burial chamber, oriented N–S, is situated on the western side of the burial shaft. It was blocked by stones, the blockage being preserved only in the northern part of the chamber. The length of the chamber is 2.56 m, the width 0.84 m. Height oscillated from 1.00 m to 1.12 m.

A looters' hole was dug directly to the shaft, damaging the chamber ceiling to a certain extent. Sherds for scraping, fragments of vessels and stones from the blockage were also discovered in the shaft. An almost complete skeleton was found in the central and southern parts of the chamber, partly preserved, in anatomical position. A mat lay under the skull. The phalanges had been moved to the shaft.

SUDAN



D4/27



D4/23.2



D4/23.3



D4/23.4



D4/23.1

Human and animal bones were mixed together [Fig. 7 center left]. Pottery, three beads and textile fragments were found in the shaft [see Fig. 7 top left]. The main group of vessels lay in the northern part of the chamber [Fig. 7 center right]. Metal objects, including an arrowhead, adze D4/27 with a pendant on top [see Fig. 7] and another adze (D4/28) were discovered to the west of the skull (for the metal objects, see the appendix below). Over 160 beads were discovered inside the chamber [Fig. 7 bottom].

TUMULUS 5 (TYPE III)

A circular superstructure had a maximum height of 0.50 m before exploration. The maximum diameter is 10.50 m, whereas the stone ring measures 9.50 m. The burial shaft, oriented NS–EW, is fairly rectangular in shape [see Fig. 8 top]. A rectangular step was cut in the northeastern part of the shaft, 0.82 m above the bottom. A looters' hole dug directly to the shaft and burial chamber destroyed the upper parts of the shaft; it measured 2.10 m in length and 1.70 m in width, respectively 1.90 m in length and 1.20 m in width at the bottom, which is 2.50 m down from the surface. An oval burial chamber is situated on the western side of the shaft and oriented N–S. It measured 2.20 m in length and 0.80 m in width. A damaged ceiling in the central and northwestern part of the chamber made it impossible to reconstruct the height [Fig. 8 bottom left]. Fragments of the collapsed ceiling were found in the burial chamber and the rest of the ceiling collapsed after

exploration. Only the lower layer of the blocking was preserved in place. The stones were found in the shaft, stacked against the east wall.

The skeleton was found incomplete. The skull and long bones were in the central part of the shaft, the pelvis, a shoulder blade, ribs, long bones and vertebrae in the fill. A few bones survived in the central part of the burial chamber. The position of the body could not be reconstructed [see Fig. 8]. A few animal bones were found in the burial chamber (see Iwaszczuk 2016, in this volume).

Pottery sherds, two cups, 17 beads [see Fig. 8 bottom right] and a spearhead (D5/4) were found in the shaft, whereas the burial chamber yielded arrow heads, a bowl and over 280 beads (mainly faience) (for the metal objects, see the appendix below).

TUMULUS 6 (TYPE III)

The tomb had a circular superstructure with a maximum height of 0.40 m before exploration and maximum diameter of 9.50 m. The stone ring had a maximum diameter of 8.50 m. The burial shaft was irregular, oriented NS–EW with an extension to the east, 2.50–2.60 m (N–S) by 1.30–1.70 m (E–W). The bottom of the shaft was more regular: 1.70 m by 1.00 m. The shaft is 2.10 m deep. The oval-shaped burial chamber is situated on the western side of the burial shaft. It is oriented N–S, 2.00 m long and 0.80 m wide. Looters had damaged the northern part of the shaft and the ceiling of the chamber, making it impossible to reconstruct its height. The

Fig. 7. (opposite page) Tumulus 4: top left, plan of the burial shaft with finds; top right, plan of the bottom of the shaft and burial chamber with finds; center left, human remains in the burial chamber; center right, pottery from the burial chamber; bottom, finds from the burial chamber, including a pendant, white beads and carnelian beads.



Fig. 8. Tumulus 5: top, plan of the shaft with blockage remains (left) and of the bottom of the shaft and burial chamber; center, top view of the burial chamber; bottom left, damaged roof over the chamber; bottom right, gold-in-glass bead from the burial chamber

stones from the blocking were all found in the shaft [Fig. 9].

The skeleton is incomplete and it was impossible to reconstruct the position of the body. The skull is missing and the ribs, long bones, and some vertebrae were scattered in the burial chamber and in the

shaft [see Fig. 9]. A bottle, a cup, two beads and few animal bones were discovered in the shaft. In the northern part of the chamber, there was a bowl with some human and animal bones (see Iwaszczuk 2016, in this volume) and over 93 beads [for an example, see Fig. 9 center inset].

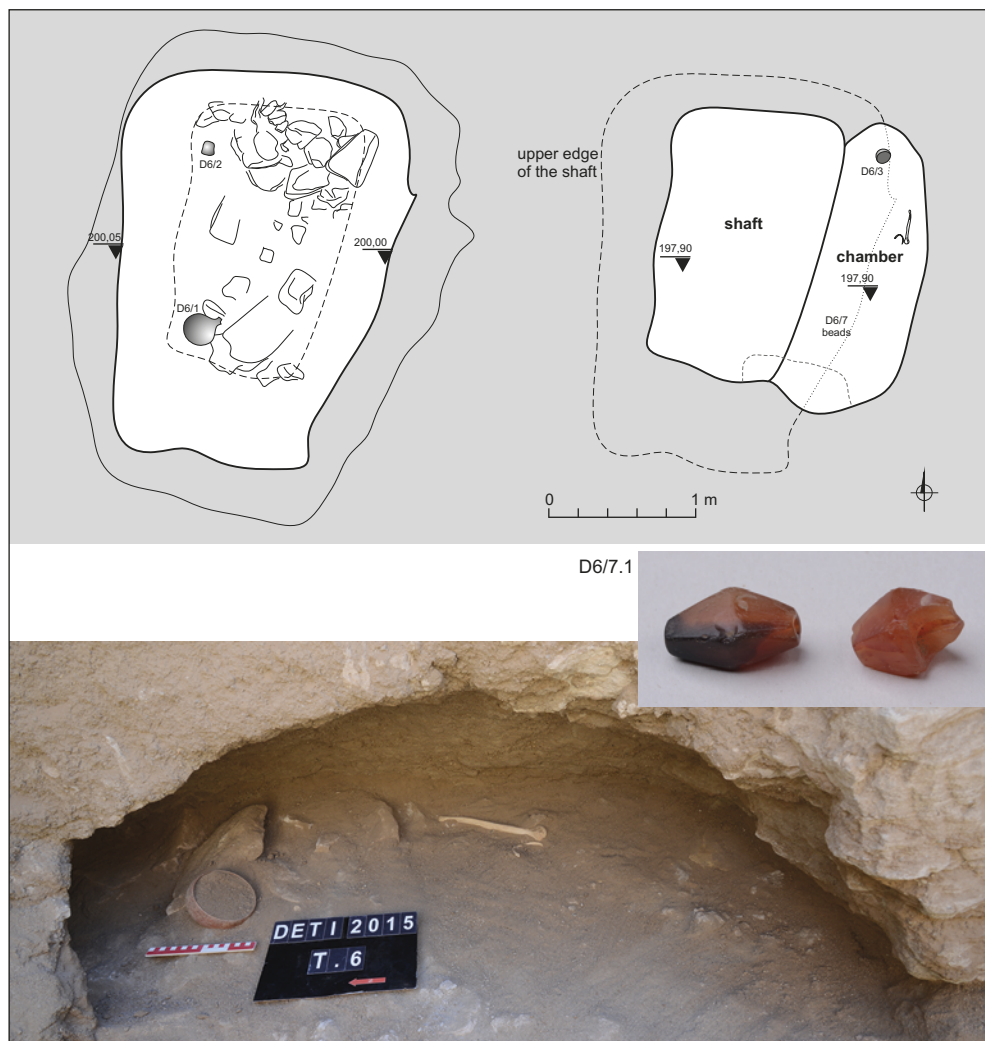


Fig. 9. Tumulid 6: top, plan of the shaft with finds (left) and plan of the bottom of the shaft and burial chamber; bottom, view of the burial chamber; center inset, biconical beads made of carnelian

TUMULUS 7 (TYPE III)

The circular superstructure of this tomb is 0.85 m high at the maximum before exploration, 12.30 m maximum diameter (NS–EW), and 10.20 m maximum diameter of the stone ring. The rectangular burial shaft is oriented NE–SW. Looters

destroyed its upper part [Fig. 10 bottom] as well as the ceiling of the burial chamber and sections of the blocking together with the adjoining wall. The bottom of the shaft is in better shape and is measured at 1.28 m in length, 1.15 m in width, and 2.10 m in depth. The burial chamber was kidney-

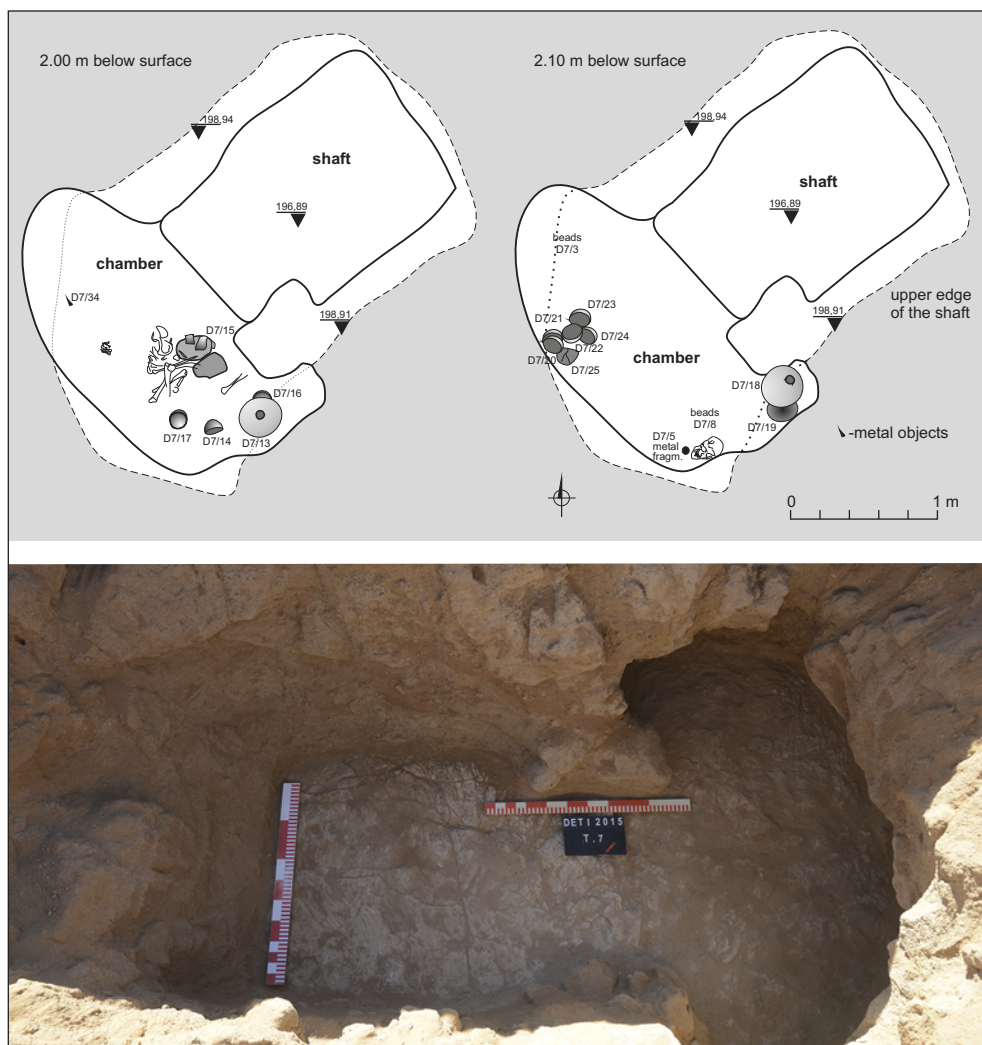


Fig. 10. Tumulus 7: top, plan of the shaft and the burial chamber on two levels; bottom, damages to the shaft and burial chamber

-shaped and oriented NW–SE, 2.35 m long and 1.05 m wide. The height could not be reconstructed.

The skeleton was found incomplete, spread around and outside the chamber. The long bones, vertebrae, a shoulder blade, ribs and a collarbone were in the shaft, the skull in the southern part of the chamber, the main assemblage of human remains in the central part. The position of the body could not be reconstructed. A bottle and cup were found in the fill

on the border between the chamber and the shaft. Part of a knife, pottery sherds, scrapers, human and animal bones were also discovered in the shaft. Inside the burial chamber, in the center, 2.00 m below the surface level [see *Fig. 10 top*], there were some bowls and human bones. Two bottles and a skull, together with a metal object (see the appendix below) and over 50 beads were found in the southern part of the chamber.

[MT, EC-Z]

REMARKS AND COMMENTS

Excavation of seven tumuli in different parts of the el-Detti cemetery demonstrated the similarity of these structures to the types identified in the el-Zuma tumuli field: six of the tombs were confirmed to be of type III with minor differences and one appeared to be a version of type II.

At el-Zuma, burials designated as type III usually consist of a rectangular vertical shaft with a side niche hewn in the west wall of the shaft. This recalls the Meroitic burial tradition with an E–W orientation, contrary to the later practice common in the Dongola Reach of having the burial chamber cut into the southern long side of the shaft (for more information, see El-Tayeb 1994; 2012: 66). Interestingly, only half the burials classified as type III at el-Detti had a western burial chamber (tumuli 2, 4 and 5, see *Figs 5, 7, 8*). Tumulus 4 is unusual in also having a single step or bench-like cut on the east side of the shaft at a depth of about 1.70 m. This is the first difference to be noted in this type of burials. However, the nearest parallel is tumulus T.9 from el-Zuma, which is classified as a version of

type II tombs (see El-Tayeb 2012: 66–68, *Fig. 18*). Another modification is in the substructures of tumuli 3, 6 and 7 [*Figs 6, 9, 10*]. In Tumulus 3, the burial niche is cut into the long east wall of the shaft and has an extension spreading to the middle of the short side on the south. The nearest parallel is known from Burial 595/1 at the el-Ashamin cemetery in the Fourth Cataract region (Kołosowska 2010: 96, *Fig. 12*). Furthermore, in order to offer easy access to the bottom, the shaft is provided with a single step cut into its southwestern corner. This practice is known also from the cemetery at Jebel el-Ghaddar South (El-Tayeb 1994). An unusual location of the side niche is noted in Tumulus 6, where the burial chamber is hewn into the east wall of the shaft. A similar location of the side niche is known from grave HP47/2 at El-Kassinger Bahri in the Fourth Cataract Region (see also Kołosowska and El-Tayeb 2007: 24, *Fig. 27*). In Tumulus 7, the burial chamber is aligned in an unusual way, NE–SW, and has a side niche cut into its southwestern short wall. So far, the only parallel to it



*Fig. 11. Pottery assemblages from Tumuli 1 (top) and 7 (bottom)
(Photos T. Wójtczak)*

comes from the cemetery at el-Ashamin and Ab-Heregil (see Kołosowska 2010: 97, Fig. 15).

The superstructure allowed Tumulus 1 to be classified as type II, a classification further confirmed by the substructure. The L-shaped ground plan was a variant of type II, analogous to the one found in tumuli T.9 and T.11 at el-Zuma (El-Tayeb and Czyżewska 2011). The only differences are an additional, secondary niche cut into the north side of the shaft and the absence of a connecting hole between the main and secondary chambers. This seldom noted burial construction practice may have originated in northern Nubia, where it was first discovered at Firka by Kirwan, while another example was later excavated by Mahmoud El-Tayeb at Abkur (Kirwan 1939; Żurawski 2003: 222, Fig. 4).

The inhumation practice at el-Detti generally follows the same canon as in the el-Zuma burials. All the burial chambers were rifled and the skeletons completely disarticulated, yet it appears that all the dead were buried in contracted position. The exact orientation and position could not be established, but the similarity with el-Zuma suggests that the north-south alignment must have been the dominant practice in this cemetery as well.

Type III burials in el-Detti are generally similar to the el-Zuma burials, yet the substructures are larger in size and they also appear to be far richer in grave offerings, containing many pottery vessels, beads and metal objects (for a discussion of the latter, see the appendix below).

The pottery and beads will be the subject of a separate study, but it may be said

on the whole that the ceramic assemblage from el-Detti falls into the same category as in el-Zuma. The collection comprises mainly large beer jars with a long narrow neck covered with red slip, and shoulders with a red band, while the globular body is decorated with a mat-impressed pattern. Other types are similar but not slipped and not decorated, although some of the vessels feature the characteristic bosses on the shoulder, which were a popular addition in the Dongola Reach about AD 450–550 (El-Tayeb 2012: 97–98, Fig. 37). Middle-sized ‘beer’ jars/bottles figure also in the collection along with different versions of the cup form, the most dominant one being the wheel-made tulip-shaped red cups. A well-known type of middle-sized wheel-made bowls is also present in abundance. This red-slipped, undecorated vessel represents a form which was common in the Dongola Reach (for pottery parallels, see El-Tayeb 1994; Ali Mohammed and Hussein 1993; Phillips and El-Tayeb 2003: 458–462; El-Tayeb and Kołosowska 2007; Klimaszewska-Drabot 2010a; 2010b; El-Tayeb 2012: 85–105). The pottery assemblage as described indicates prosperity, but there is no imported material, at least so far. It may have been looted naturally and there is no reason to think that future excavations in this burial ground will not reveal imported material.

To conclude, the trial excavation at el-Detti cemetery tested only seven tumuli, yet it has shed light on Early Makurian burial practices throughout the region. Further work should augment the picture.

[MT, EC-Z]

APPENDIX

METAL OBJECTS FROM THE EL-DETTI CEMETERY

Łukasz Zieliński

Independent

The inventory of metal objects from four of the seven tumuli excavated in 2015, that is, 2, 4, 5 and 7, proved to be rich both in quantity and quality [Fig. 12].

Iron weapons constituted the largest group as at el-Zuma. The assemblage of arrowheads in particular (eight complete pieces and fragments) is very typical of the post-Meroitic period and similar to the finds from el-Zuma (Zieliński 2014). Arrowheads represented types 1a, 1b (two types of single-barbed) and type 6 (barbless leaf-shaped) and came from two different tumuli (for details,

see the catalogue below) [Fig. 13]. The inconspicuous fragment of a spike for fixing arrowheads (D5/10) is particularly noteworthy because of the impressions of the leather quiver and the wood of the arrow shafts preserved in the coating of corrosion; based on this, the diameter of the shafts was established at 0.7 cm, which is typical even today of arrow shafts.

Individual weapons are represented by a javelin head D5/4 [Fig. 14] and knife D7/2 [Fig. 15], coming from two different tombs. Both were layer-forged, which is clearly visible in the cross sections in microscopic view [Fig. 15 right]. The knife also seems to have been forged with more than three layers judging by the cross-sections. Its structure is similar to a repeatedly rolled pancake, in which all layers are more or less similar in thickness. Parts of the shaft have been preserved thanks to the corrosion of the javelin head. Perhaps the crack observed exactly in the middle and the flexion compression of the fixing spike should be connected with the same event resulting from the javelin's use.

The most interesting artifact by far is D4/30, a sort of a small padlock found in the chamber of Tumulus 4, decorated with tape inlays of silver and copper, and copper plating visible under the microscope [Fig. 16]. The decoration consists of a repeat motif of recessed metopes with no decoration, alternating with projecting spaces with tape inlays. Copper plating is

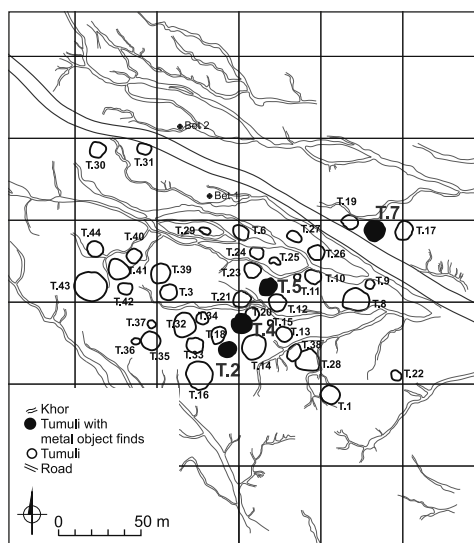


Fig. 12. Location of tumuli yielding metal artifacts (Drawing S. Lenarczyk, Z. Kowarska; processing S. Lenarczyk)

present on the hand fan-shaped fragment, in the recessed-metope part of the lock, and in the part where the rail connects with the fan-shaped fragment. The object has a T-shaped lock slot on the bottom surface of the lock part. The tongue is still visible inside the mechanism, which is an extension of a fan-shaped metal sheet. Transverse fissures present on the rear surface of the fan-shaped fragment in fairly equal intervals could have been crack expansion joints used while moving plates in the mechanism. The long bow on the front, now heavily corroded, had initially acted as a rail on which the fan plaque arm moved. The presence of a padlock suggests the presence of an object containing valuable content (such as a box) in the chamber of Tumulus 4. And despite the fact that such a box was not found in the tumulus, the substantial pile of wooden debris in the compartment next to the skeleton, to the west of the skull, could be the remains of a box.

Thin copper lamina (0.3 mm thick) were found in the center of the chamber of Tumulus 4, among the bones [Fig. 18]. The purpose of this object, which is 4 cm by 5 cm, is not evident; it has edges bent in equal margins on both sides. Despite the strong bend and corrosion in several places, it seems to be a complete object with no technical holes or mounting. A small piece of fabric in plain weave was also preserved, thanks to close proximity with the corroding copper oxides.

Tools D4/29 and D4/28 were also found in the chamber of Tumulus 4. The first tool [Fig. 17 left] is an adze (only the metal part is preserved) as indicated by the sleeve alignment to the blade. The importance of the object is underlined by the signature (smith mark), preserved on

the sleeve surface of the blade. Microscopic examination of the surfaces indicates that the item was layer-forged, but more precise data may be obtained in the future, after metallographic testing. It also seems that the object has deliberately oxidized surfaces to prevent corrosion, which is why it is relatively well preserved.

The second tool [Fig. 17 right] is also a carpenter's tool, but smaller than the first adze. The cutting edge (relatively narrow and long), the narrow blade and wrapped helix end, not well suited to hold a shaft, suggest that it might be a kind of wide wood chisel, to some extent similar in function to the first tool, but more precise.

Also found in the chamber of Tumulus 4 was a small, fractured, flat iron ring with a diameter of 1.3 cm and thickness of 0.3 cm, which suggests its association with modern washers [Fig. 18]. The diameter of the inner bore is 0.4 cm and is nearly square. The external circuit is not a perfect circle, so it is suitable for a pin with a square cross section 0.4 cm, perhaps a nail, for example.

The el-Detti material is similar to that from el-Zuma, but it also differs slightly. The small dimensions of the burial chambers presumably excluded the use of beds/biers in the burial chambers, hence the absence of nails and bed frame fittings. The arrowheads are similar to el-Zuma equivalents, but less diverse in form, although more finds in the future could change the picture. Tumulus 4 is the most interesting because of the rich and diverse equipment, including weapons/arrowheads, tools and even a padlock. It is also until now the only grave in el-Detti with a copper object in the equipment. All the other explored graves have yielded only iron goods.

CATALOGUE OF FINDS

1. Arrowheads, two [Fig. 13]

Inv. No. D4/19

Context: Tumulus 4, burial chamber, near the skull

Dimensions: 1 – W. 1.1 cm; Th. 0.2 cm; L. head 1.5 cm, maximum 4.8 cm; barb 1.1 cm; fixing spike cross-section 0.5 cm; 2 – W. 1.1 cm; Th. 0.3 cm; L. head 1.5 cm, maximum 3.9 cm; barb 0.7 cm; fixing spike cross-section 0.5 cm

Material: Forged iron

Description: Well preserved hooked, single-barbed arrowheads (type 1a)

Parallels: Arrowhead finds from el-Zuma (Ł. Zieliński, personal observation), el-Hobagi (Lenoble et al. 1994), Qustul (Williams 1991; Emery and Kirwan 1938)

2. Arrowhead [Fig. 13]

Inv. No. D5/7

Context: Tumulus 5, burial chamber

Dimensions: W. 0.8 cm; Th. 0.1 cm; L. 3.3 cm, head 0.9 cm, barb 0.6 cm; fixing spike cross-section 0.4 cm x 0.4 cm

Material: Forged iron

Description: Hooked, single-barbed arrowhead (type 1a)

Parallels: Arrowhead finds from el-Zuma (Ł. Zieliński, personal observation), el-Hobagi (Lenoble et al. 1994), Qustul (Williams 1991; Emery and Kirwan 1938)

3. Arrowheads, two, fused [Fig. 13]

Inv. No. D5/3

Context: Tumulus 5, shaft, about 2.10 m below ground surface

Dimensions: Th. 0.2 cm; L. 4.9 cm; fixing spikes cross-section 0.5 cm; L. approximately 3 cm

Material: Forged iron

Description: Two fused arrowheads, one leaf-shaped, single-barbed (type 1b);

negative imprints of hide (quiver) preserved in the corrosion

Parallels: Arrowhead finds from el-Zuma (Ł. Zieliński, personal observation), el-Hobagi (Lenoble et al. 1994), Qustul (Williams 1991; Emery and Kirwan 1938)

4. Arrowhead [Fig. 13]

Inv. No. D5/6

Context: Tumulus 5, burial chamber

Dimensions: W. 1.2 cm; Th. 0.2 cm; L. preserved 6.6 cm, head 2.4 cm, barb 0.6 cm; fixing spike cross-section 0.6 cm x 0.6 cm

Material: Forged iron

Description: Leaf-shaped, single-barbed arrowhead (type 1b)

Parallels: Arrowhead finds from el-Zuma (Ł. Zieliński, personal observation), el-Hobagi (Lenoble et al. 1994), Qustul (Williams 1991; Emery and Kirwan 1938)

5. Arrowhead, fragment [Fig. 13]

Inv. No. D4/20

Context: Tumulus 4, burial chamber, found near the skull on a round, flat stone

Dimensions: L. preserved 5.6 cm; W. 1.6 cm; Th. 0.2 cm

Material: Forged iron

Description: Leaf-shaped, barbless arrowhead with broken point (type 6)

Parallels: Arrowhead finds from el-Zuma (Ł. Zieliński, personal observation), el-Hobagi (Lenoble et al. 1994), Qustul (Williams 1991; Emery and Kirwan 1938)

6. Arrowhead fixing spike, fragment [Fig. 13]

Inv. No. D5/10

Context: Tumulus 5, burial chamber

Dimensions: L. preserved 2.5 cm; Dia. 0.4 cm

Description: Arrowhead fixing spike

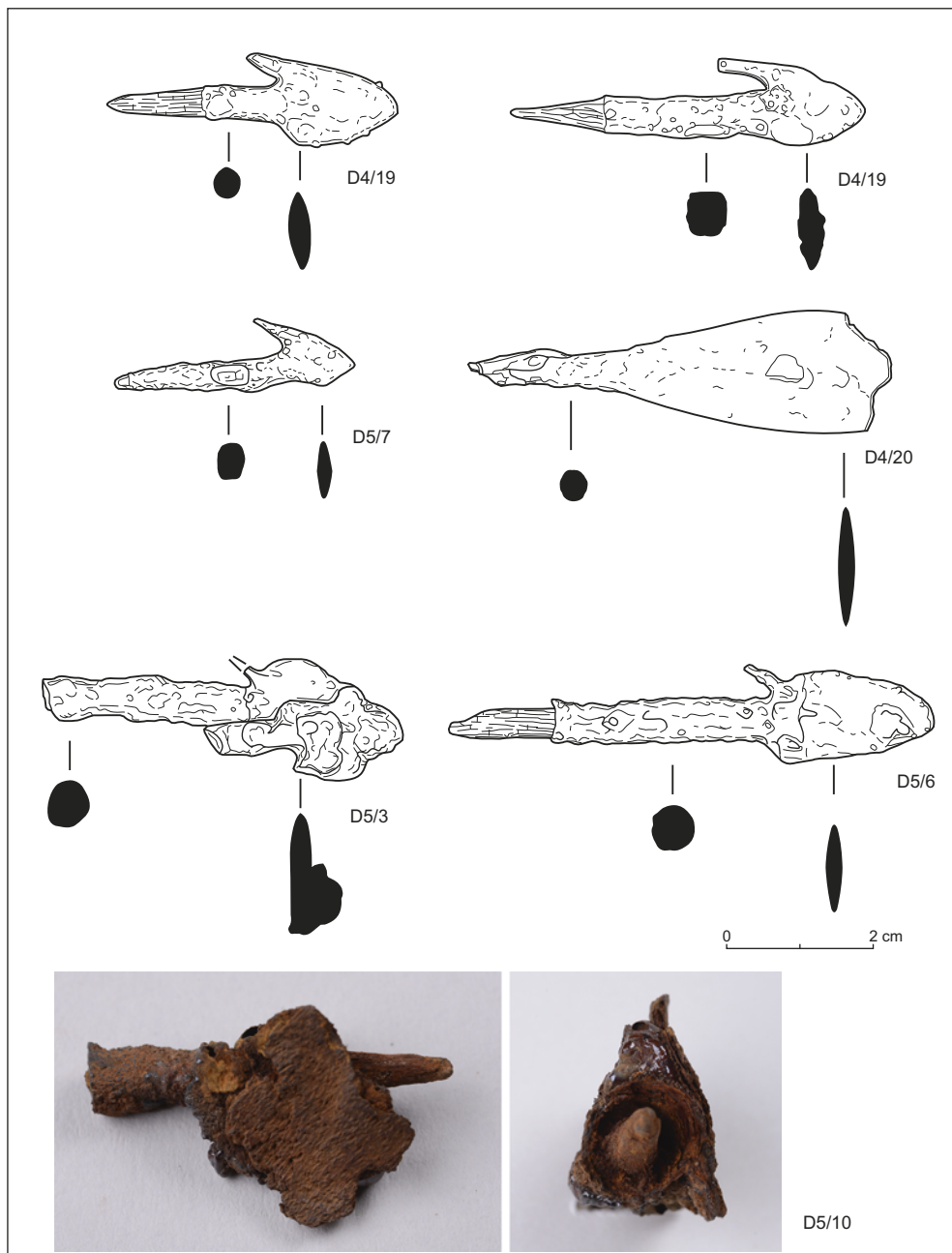


Fig. 13. Forged iron arrowheads
(All drawing and photos Ł. Zieliński)

fragment; negative imprints of leather (quiver) and wooden arrow shaft (Dia. 0.7 cm) preserved by corrosion

Parallels/remarks: Preserved arrow shafts are very rare in Nubia; the only case known to the author are the complete arrows from Meroe W.122 grave (Shinnie 1967)

7. Arrowhead fixing spike, fragment

Inv. No. D2/19

Context: Tumulus 7, shaft, from vessel D2/5

Dimensions: 1.4 cm, cross-section 0.5 x 0.4 cm

Material: Iron

Description: Broken arrowhead fixing spike fragment

8. Arrowhead(?)

Inv. No. D4/32

Context: Tumulus 4, burial chamber

Dimensions: Dia. approximately 0.8 cm

Material: Iron

Description: Heavily corroded and cracked fragment, bearing negative imprints of wood; probably arrowhead fragment

9. Javelin head [Fig. 14]

Inv. No. D5/4

Context: Tumulus 5, shaft, 2.20 m below ground level, near vessels nos 3 and 4

Dimensions: W. maximum 2.5 cm; L. preserved 2.6 cm; fixing spike Th. approximately 0.7–0.8 cm

Material: Layer-forged iron

Description: Broken and bent javelin head (leaf-shaped), preserved wood fragments from javelin shaft; layer-forging visible in cross-section (core and two coating layers, one on each side)

Parallels: Javelin finds from el-Zuma (Ł. Zieliński, personal observation), el-Hobagi (Lenoble et al. 1994), Qustul (Williams 1991; Emery and Kirwan 1938)

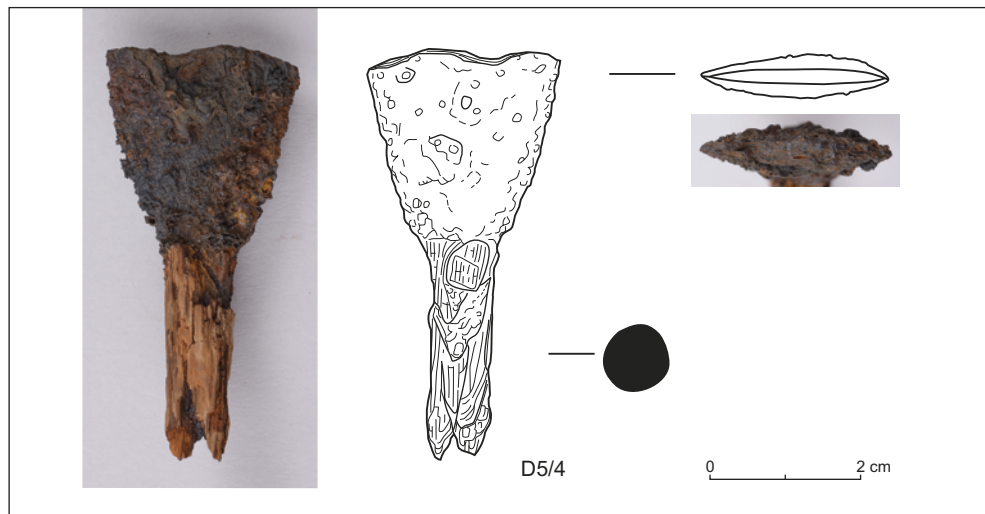
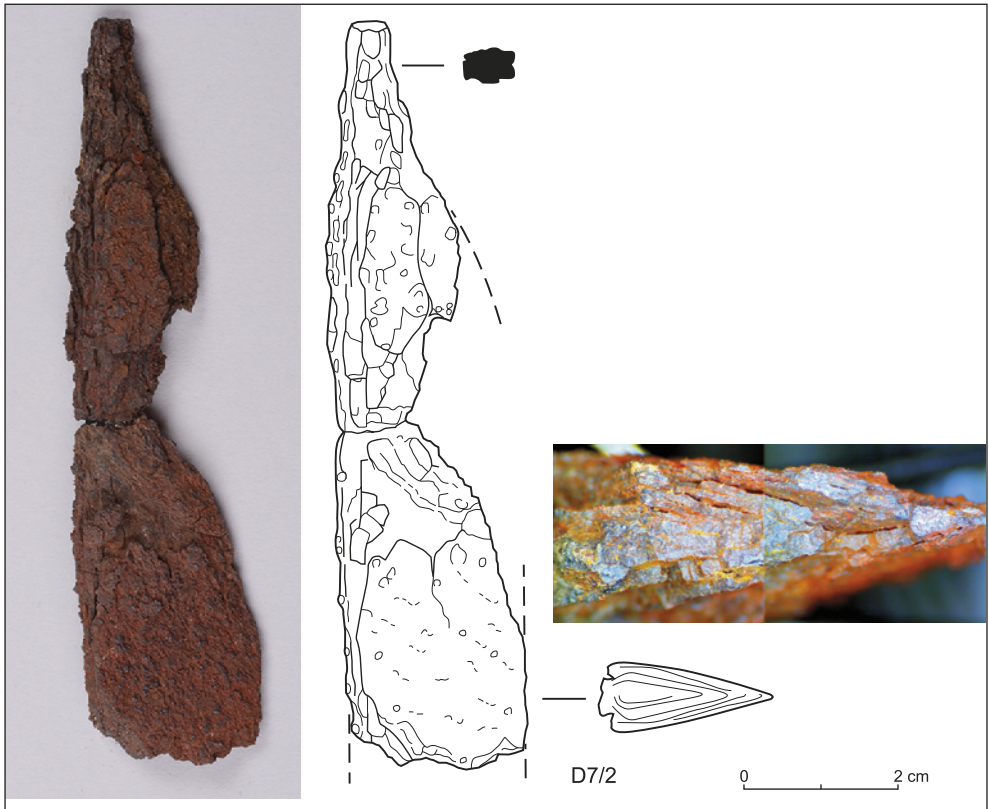


Fig. 14. Broken javelin head

10. Knife fragment [Fig. 15]*Inv. No.* D7/2*Context:* Tumulus 7, shaft, approximately 1.50 m below ground level*Dimensions:* W. maximum 2.3 cm (original blade edge); Th. maximum 0.9 cm (original approximately 0.7 cm); L. preserved 9.7 cm*Material:* Layer-forged iron (repeatedly rolled pancake structure)*Description:* Iron single-edged knife fragment (triangular cross-section); preserved part of the blade section with original edge (1 cm long) and piece of handle spike (mostly broken off)*Parallels:* Knife finds from el-Zuma (Ł. Zieliński, personal observation) and Qustul (Emery and Kirwan 1938)**11. Object (lock or padlock) [Fig. 16]***Inv. No.* D4/30*Context:* Tumulus 4, burial chamber, southeastern part*Dimensions:* Total L. 12 cm; L. main part 7.7 cm; W. fan-shaped part 2.8 cm; lock part: L. 4 cm, square cross-section 1.4 cm x 1.4 cm, decorated with five metopes Th. 0.6 cm; silver and copper strip incrustation W. 0.2 cm in the middle of each metope surface; on the*Fig. 15. Knife fragment; right, microscopic section photo*

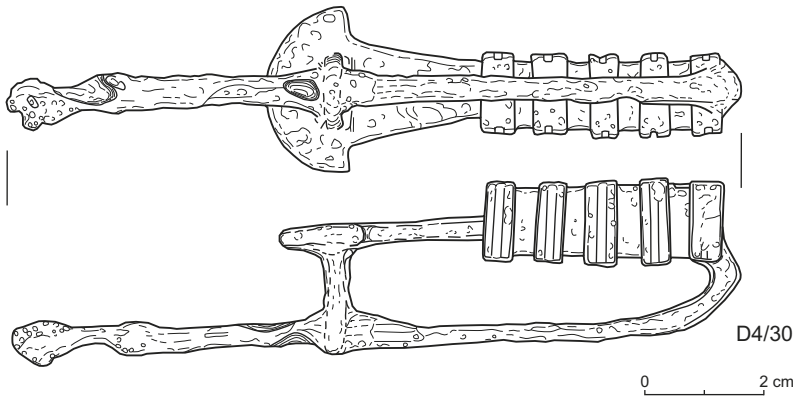


Fig. 16. Lock or padlock; microscopic photos: top left, rear view of lock section; top right, lock slot and tongue; bottom right, traces of copper oxides near metopes; bottom left, traces of copper oxides near the bow/rail section

bottom lock slot L. 3.1 cm; W. 0.4 cm
Material: Forged iron, with copper and silver incrustations and copper plating
Description: A kind of lock or padlock consisting of a cuboid lock mechanism decorated with metopes, fan-shaped bail part

12. Fan-shaped plate (adze) [Fig. 17]

Inv. No. D4/29

Context: Tumulus 4, burial chamber

Dimensions: L. 16.5 cm; sleeve Dia. outer 4.3 cm, inner 3.3 cm; sleeve W. 1.9 cm; Th. 0.6 cm; blade edge

L. 9.3 cm (“preserved part”); blade Th. max. 0.9 cm

Material: Layer-forged iron

Description: Well preserved adze; smith mark/signature: shape of drop and long line below, on the inner surface

Parallels: Contemporary adzes and finds from Ballaña and Qustul (Emery and Kirwan 1938)

13. Carpenter’s chisel(?) [Fig. 17]

Inv. No. D4/28

Context: Tumulus 4, burial chamber

Dimensions: L. 17.5 cm; helix Dia. outer

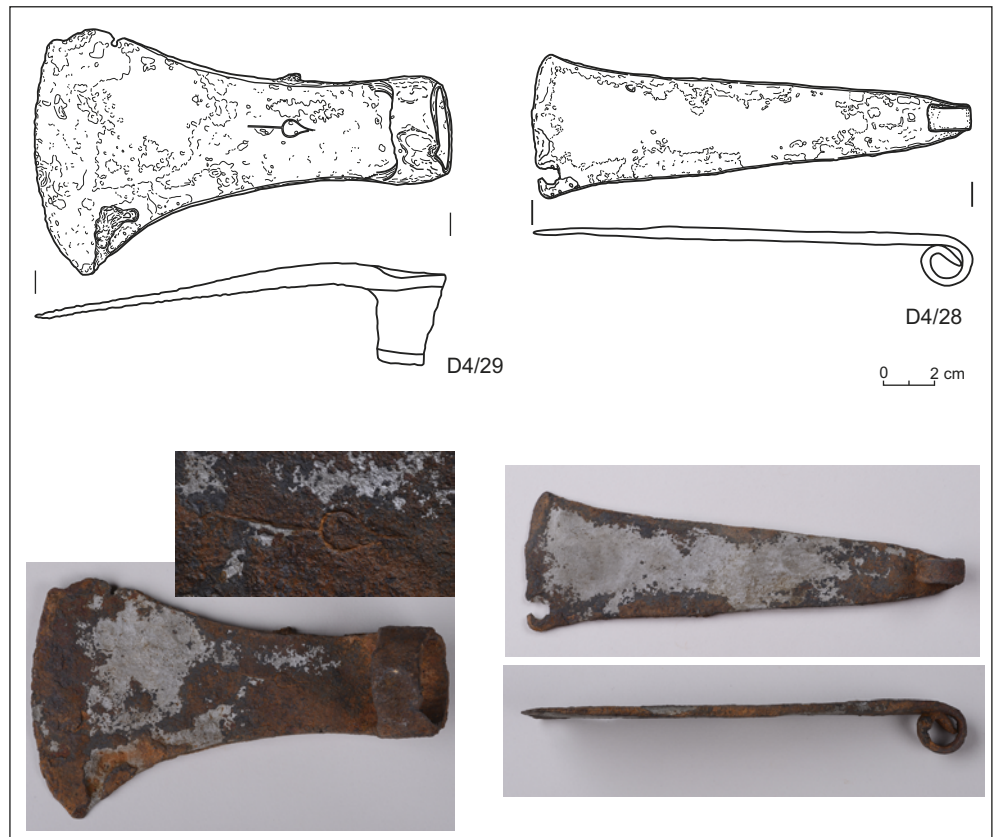


Fig. 17. Tools: left, adze, and right, carpenter’s chisel(?)

1.9 cm; semicircular inner space 0.7–1.3 cm; W. 2.1 cm; blade edge L. 5.7 cm; blade Th. max. 0.5 cm

Material: Forged iron

Description: Well preserved tool, probably carpenter's chisel or some kind of hoe; distal end convoluted into a sort of helix (handle)

14. Copper lamina [Fig. 18]

Inv. No. D4/18

Context: Tumulus 4, burial chamber, central part, near the bones

Dimensions: W. approximately 4 cm; L. approximately 5 cm (without margins 4.4 cm); Th. approximately 0.03 cm; two bent margins (0.2 cm and 0.4 cm)

Material: Copper

Description: Heavily bent copper blank, attached small piece of fabric in plain weave

15. Roundel/ring [Fig. 18]

Inv. No. D4/3

Context: Tumulus 4, burial chamber, southeastern part

Dimensions: Dia. outer 1.3 cm, inner 0.4 cm; Th. 0.3 cm; W. 0.5 cm

Material: Iron

Description: Small iron ring/roundel

16. Lamina fragment

Inv. No. D2/1

Context: Tumulus 2, shaft, about 2.10 m below top

Dimensions: 3.1 x 7.1 cm; Th. 0.2 cm

Material: Iron

Description: Iron blank fragment with heavily corroded surfaces, from unidentified object

17. Fragment

Inv. No. D2/2

Context: Tumulus 2, burial chamber, blockage, material mixed with human bones

Dimensions: 3.4 x 1.3 cm; Th. 0.8 cm

Material: Iron

Description: Heavily corroded fragment, from unidentified object

18. Fragment

Inv. No. D4/37

Context: Tumulus 4, burial chamber

Dimensions: 3.2 cm x 1.1 cm x 0.5 cm

Material: Iron

Description: Heavily corroded fragment, from unidentified object

19. Splinters (from unidentified object)

Inv. No. D7/5

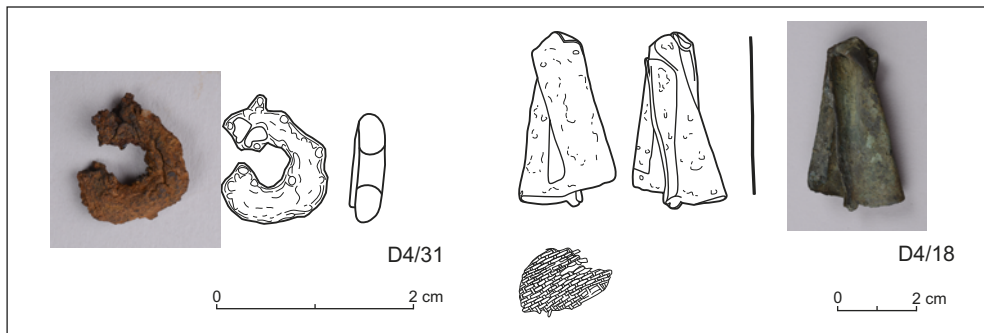


Fig. 18. Iron roundel and copper lamina

Context: Tumulus 7, burial chamber, near the skull

Dimensions: Biggest fragment L. 2 cm; Th. maximum preserved 0.3 cm

Material: Iron

Description: Many iron splinters (probably from a single unidentified object); negative imprint of wood preserved on one surface

20. Fragment

Inv. No. D7/34

Context: Tumulus 7, burial chamber, northern end of central part

Dimensions: 2.1 cm x 1.4 cm x 0.2 cm

Material: Iron

Description: Heavily corroded fragment, with only one original flat surface

Assoc. Prof. Mahmoud El-Tayeb

Polish Centre of Mediterranean Archaeology, University of Warsaw

00-497 Warsaw, Poland, ul. Nowy Świat 4

mahmoudeltayeb@hotmail.com

Ewa Czyżewska-Zalewska

Polish Centre of Mediterranean Archaeology, University of Warsaw

00-497 Warsaw, Poland, ul. Nowy Świat 4

ewa.czyzewska@uw.edu.pl

Zofia Kowarska

zofiakowarska@wp.pl

Szymon Lenarczyk

szymonlenarczyk@wp.pl

Łukasz Zieliński

zielu-05@o2.pl

REFERENCES

- Ali Mohammed, A.R. and Hussein, K. (1993). Two seasons in the Fourth Cataract Region. Preliminary results. *Sudan & Nubia*, 3, 60–70
- El-Tayeb, M. (1994). Excavations at El-Ghaddar – Old Dongola. In C. Bonnet (ed.), *Études nubiennes: conférence de Genève. Actes du VII^e Congrès international d'études nubiennes, 3–8 septembre 1990*, II. *Communications* (pp. 65–79). Geneva: C. Bonnet
- El-Tayeb, M. (2010). Early Makuria Research Project. El-Zuma excavations. Preliminary report on the second season, 2007. *PAM*, 19, 467–479
- El-Tayeb, M. (2012). *Funerary traditions in Nubian early Makuria* [= *GAMAR Monograph Series* 1]. Gdańsk: Muzeum Archeologiczne w Gdańsku
- El-Tayeb, M. and Czyżewska, E. (2011). Early Makuria Research Project. Excavations at ez-Zuma. The third season, Jan.–Feb. 2009. *Sudan & Nubia*, 15, 108–118
- El-Tayeb, M. and Kołosowska, E. (2007). Pottery analysis report: sites HP45 and HP47. *GAMAR*, 5, 37–50
- Emery, W.B. and Kirwan, L.P. (1938). *The royal tombs of Ballana and Qustul I. Text*. Cairo: Government Press

- Garcea, E.A.A. and Sebastiani, R. (1998). Advantages and limitations of surveys: The case of the Napatan region. *ANM*, 8, 55–83
- Iwaszczuk, U. (2016). Animals from the tumuli in el-Detti in Sudan: from bone remains to studying ritual. *PAM*, 25, 431–446
- Kirwan, L.P. (1939). *The Oxford University excavations at Firka*. Oxford: Oxford University Press
- Klimaszewska-Drabot, E. (2010a). Pottery from the cemetery in El-Zuma (2007 season). *PAM*, 19, 480–487
- Klimaszewska-Drabot, E. (2010b). Pottery assemblage from the Tanqasi cemetery. Early Makuria Research Project (PCMA). In W. Godlewski and A. Łajtar (eds), *Between the cataracts: Proceedings of the 11th Conference for Nubian studies, Warsaw University, 27 August – 2 September 2006*, II.1. *Session papers* [=PAM Supplement Series 2.2/1] (pp. 219–226). Warsaw: Warsaw University Press
- Kołosowska, E. (2010). A cemetery site at El-'Ashamin village in the Fourth Nile Cataract Region. *GAMAR*, 6, 91–108
- Kołosowska, E. and El-Tayeb, M. (2007). Excavations at the Kassinger Bahri cemetery sites HP45 and HP47. *GAMAR*, 5, 9–36
- Lenoble, P., Disseaux, R.-P., Ali Mohamed, A., Ronce, B., and Bialais, J. (1994). La fouille du tumulus à enceinte el Hobagi III, A.M.S. NE-36-0/7-N-3. *Meroitic Newsletter*, 25, 53–88
- Phillips, J. and El-Tayeb, M. (2003). The pottery assemblage from the Hammur Abbasiya tumulus field (SDRD Hammur 2). In B. Żurawski, *Survey and excavations between Old Dongola and Ez-Zuma* [=Nubia 2; Southern Dongola Reach Survey 1] (pp. 458–462). Warsaw: Neriton
- Shinnie, P.L. (1967). *Meroe: A civilization of the Sudan* [=Ancient Peoples and Places 55]. London: Thames and Hudson
- Williams, B. (1991). *Noubadian X-Group remains from royal complexes in cemeteries Q and 219 and from private cemeteries Q, R, V, W, B, J, and M at Qustul and Ballana* [=Oriental Institute Nubian Expedition 9]. Chicago: Oriental Institute of the University of Chicago
- Zieliński, Ł. (2014). Metal objects from el-Zuma cemetery, 2011. *PAM*, 23/1, 375–390
- Żurawski, B. (2003). *Survey and excavations between Old Dongola and Ez-Zuma* [=Nubia 2; Southern Dongola Reach Survey 1]. Warsaw: Neriton