

POLISH ARCHAEOLOGY IN THE MEDITERRANEAN

# PAM

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## **POLISH ARCHAEOLOGY IN THE MEDITERRANEAN (PAM)**

Annual of the Polish Centre of Mediterranean Archaeology, University of Warsaw

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## **POLISH ARCHAEOLOGY IN THE MEDITERRANEAN (PAM)**

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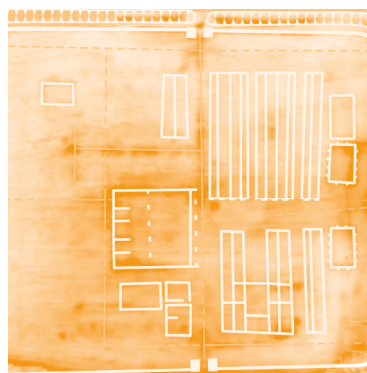
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# Roman auxiliary fort in Pojejena (Caraș-Severin County, Romania). The results of non-invasive and archival research (2017–2019)



**Abstract:** A non-destructive survey conducted in 2017–2019 in the proximity of the auxiliary fort brought forth new data regarding the military base on the bank of the Danube, in the frontier zone between the Roman provinces of Moesia Superior and Dacia Inferior. It became clear that the previously acknowledged large stone fort was preceded by an unknown small earth-and-timber fort likely dated to the late 1st – early 2nd century.

Analysis of the internal planning of the large fort, as well as the results of test trenching near the East Gate not only allowed to verify some geophysical results but also gave insight into the chronology of the large fort and contributed to the discussion of the changes to the fort's garrison. The evidence shows that the base functioned until the 260s CE, and while the Roman military was probably present in the area at some point in the 4th century, it was a relatively short episode during an attempt to reconquer the Dacian riverbank.

**Keywords:** Roman limes, auxiliary fort, Danube, Moesia Superior, Dacia

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## INTRODUCTION

The Roman fort in the modern village of Pojejena, Romania, is located near the Iron Gates gorge, on the left bank of the Danube [Figs 1, 2]. The military base, whose ancient name is unknown, was built on a plateau rising from the vast Danubian terrace surrounded by the Carpathian

Mountains. From the 1st century CE, the fort guarded the frontier of the Roman Empire. From the conquest of Dacia until the Roman retreat from this area in about 260 CE, it manned a frontier zone between the Roman provinces of Moesia Superior and Dacia Superior (Piso 2018).

## STATE OF THE ART

The fort has been known to scholars for a long time — its remains were noted already by an Italian traveler, Count Luigi Fernando Marsili (Marsili 1726/II: 11). Nevertheless, it was not thoroughly investigated. The first regular investigations were conducted in the 1970s by Romanian scholars Nicolae Gudea, Ilie Uzum and Ovidiu Bozu (Gudea and Uzum 1973; Gudea 1975; Gudea and Bozu 1979; Gudea 2001: 59–61). The researchers recognized the general outline of the fort and de-

termined its area (about 2.7 ha) [Fig. 3]. Importantly, they excavated parts of the fortification system, determining that the defensive walls were about 1.3 m wide and built in the *opus incertum* technique (Gudea and Uzum 1973: 87; Gudea 2001: 60). Next to the wall, they detected an embankment and a ditch 7–9 m wide and 2.5 m deep (Gudea and Uzum 1973: 87). Three gates were excavated: *porta decumana* (West Gate), *porta principalis sinistra* (North Gate) and *porta principa-*

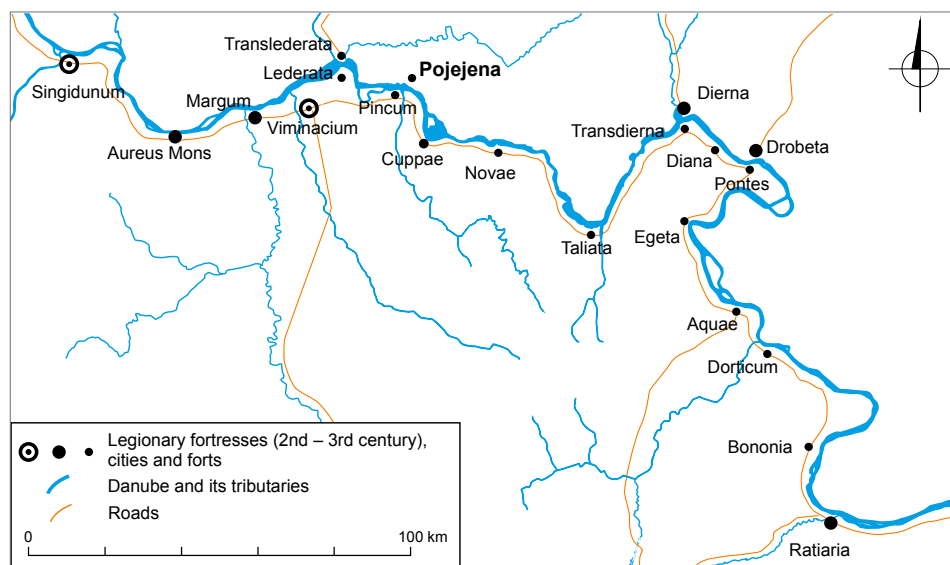


Fig. 1. Upper Moesian Danube in the 2nd–3rd century (Prepared by E. Jęczmienowski)

*lis dextra* (South Gate) [Figs 3, 4]. Each was flanked by two internal rectangular towers projecting slightly (by 0.4–0.5 m) from the curtain wall (Gudea 1975: 334, 336–337, Figs 2–3; Gudea and Bozu 1979: 182, Fig. 2, 183). Three corner internal towers, trapezoidal in plan, have been excavated as well [Figs 3, 5] (Gudea and Bozu 1979: 181–183), but the results of the excavations in the NE corner tower were published only in a brief report focusing on the discovery of Mithraic votive reliefs (Gudea and Bozu 1977: 118, 128–130).

The 1970s research determined the width of a number of streets: the *via principalis* near the North Gate was 4 m wide (Gudea 1975: 338), and 3.5 m wide side streets were located near the *principia* (Gudea and Bozu 1979: 183). Remains of a few buildings in the central part of the

fort were revealed [see Fig. 3] and identified as fragments of the headquarters (*principia*) and a wattle-and-daub barrack built *per strigas* (about 40 m × 10 m, total area of 400 m<sup>2</sup>). One of the walls in the central area was provided with counterforts, which led to its incorrect identification as a wall of the *horreum* (Gudea and Bozu 1979: 182, Fig. 1, 183; Gudea 2001: 59–60).

Nicolae Gudea distinguished two chronological phases of the fort's development: in the first, it was an earth-and-timber construction (142 m × 179 m) dated by him to the second half of the 1st century (Gudea 2001: 13, 15, 59). This dating was based solely on 1st-century coin finds from Pojejena (Gudea and Bozu 1979: 184) coupled with information on the presence of *cohors V Gallorum*

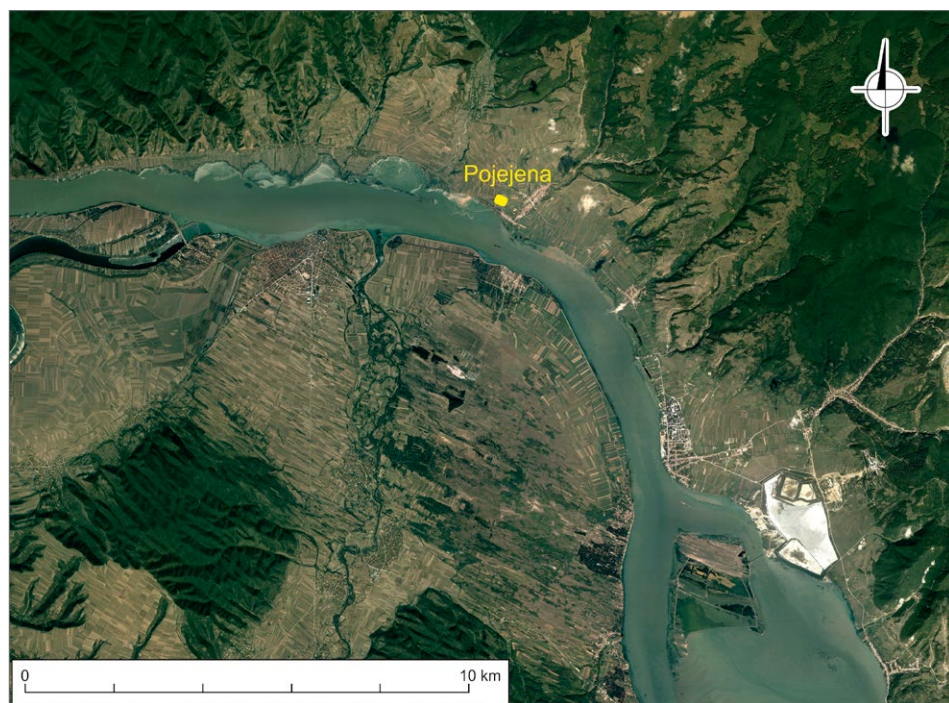


Fig. 2. Surroundings of Pojejena (Google Earth satellite imagery processed by E. Jęczmienowski)

in Moesia in 75 CE, attested in a military diploma from Donji Milanovac, also in the Iron Gates (RMD I 2), combined with later evidence of this unit's presence in Pojejena. In the second building phase, the size of the fort was almost the same (148 m × 185 m). Initially, excavators assumed that the stone walls were erected in the mid-2nd century and remained in use until the mid-3rd century (Gudea and Uzum 1973: 86–87, 95; Gudea 1975: 339–340; Gudea 1977: 225; Gudea and Bozu 1979: 184); later, however, Gudea changed the dating of the construction to the Trajanic–Hadrianic period (Gudea 2001: 19, 31–32, 59–60).

Epigraphical sources are scarce in Pojejena. Only three inscriptions provide information about the fort's military garrison (ILD 179; AE 1963: 165 = IDR III/1 10; AE 1972: 490 = IDR III/1 11 — discussed below). Nevertheless, thanks to them and numerous stamped bricks, as well as military diplomas from various sites, researchers have ascertained

the presence of at least two military units in Pojejena: *ala Frontoniana Tungrorum* and *cohors V Gallorum* (Gudea 2001: 13, 18, 20–21, 35–38, 59–60) with the latter unit remaining in the fort at least until the end of the 2nd century (Matei-Popescu and Țentea 2018: 57).

The end of the Roman presence in Pojejena is unclear, yet some Roman finds dated to the 4th century have been discovered prior to our investigations, including a hoard of bronze coins of the Constantinian dynasty found in the surroundings of Pojejena in 1883 (Toma-Demian 2000). For a considerable time, bricks and roof tiles with the stamp *LEGVIICL* found in Pojejena, attributed to the *VII Claudia* legion, were thought to bear an additional letter C at the end (see Fig. 16:d depicting a drawing of such a stamp found by our team). It was understood as the abbreviated name of the late Roman fort at Cuppae, and for that reason they were dated to the 4th century (IGLR 427; Gudea and Uzum 1973: 94, 96). Lately, however, Ioan Piso, Adrian Ardeț and Călin Timoc compared these impressions with other stamps of *legio VII Claudia* and established that they should be dated to the 2nd century, and the letter C is in fact a relic of a *tabula ansata* decoration (IDR App. III 34–35, 55 XXXVI/1).

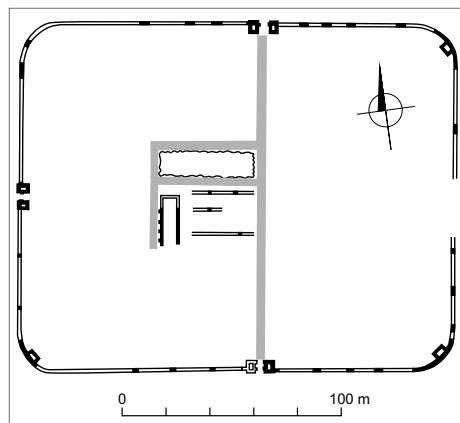


Fig. 3. Fort in Pojejena after excavations in the 1970s (Prepared by E. Jęczmienowski based on Gudea and Bozu 1979: 182, Fig. 1; Gudea 2001: 59)

## GOALS

The main objective of the project was to establish the internal plan of the fort and to evaluate the evidence of its fate after the Roman withdrawal from Dacia, especially in the light of efforts to reconquer these lands under Diocletian and Constantine



referred to in literary sources (*Pan. Lat.* V(=VII), 3; Euseb. *Vita Const.* 1.8).

Another important aim was to establish the size and character of the civil-

ian settlement next to the military base, as the extramural area has not yet been a subject of investigation. The results will be published separately.

## METHOD

The present project applied complementary prospection methods, including fieldwalking, remote sensing, and multi-method archaeo-geophysical surveys for the purpose of collecting a variety of data in order to reconstruct the ancient landscape in and around the fort.

Fieldwalking was the primary method focused on outlining the areas where

surface finds were registered outside the walls of the fort. A UAV photogrammetry survey was carried out in order to acquire high-definition imagery of the research area. Captured series of vertical aerial photographs, along with GNSS-RTK-measured Ground Control Points (GCP) allowed us to render high-resolution Structure from Motion (SfM) Digital Surface Models (DSM). Two UAV photogrammetry surveys have been undertaken, the first one in 2017, documenting an area of about 30 ha, and the second one in 2019, documenting roughly 18 hectares. The output DSM resolution was approximately 16 cm/pix, and the orthophoto was about 4 cm/pix.

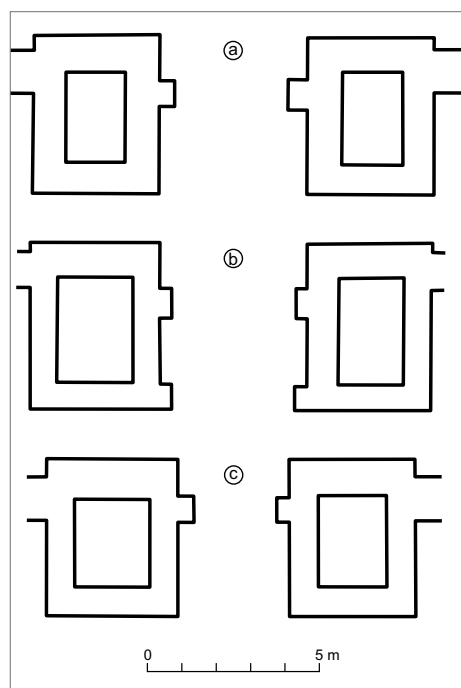


Fig. 4. Gates excavated in 1970s: a – North Gate (*porta principalis sinistra*); b – South Gate (*porta principalis dextra*); c – West Gate (*porta decumana*) (Prepared by E. Jęczmienowski based on Gudea 1975: 336–337, Figs 2–3; Gudea and Bozu 1979: 182, Fig. 1)

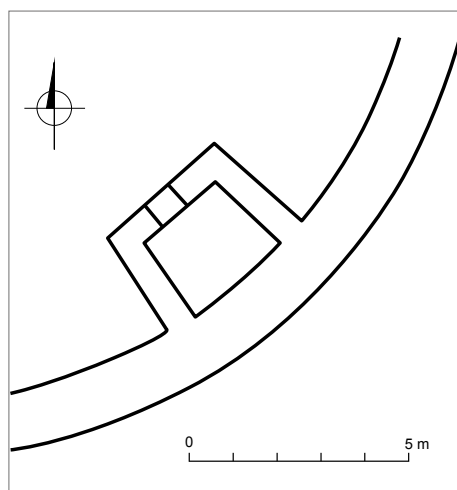


Fig. 5. SE corner tower after excavations in the 1970s (Prepared by E. Jęczmienowski based on Gudea and Bozu 1979: 183, Fig. 3)

The geographical scale around which the research questions were framed led us to carry out geophysical surveys on all three survey strategy levels proposed by Gaffney and Gater (2003) and implemented as part of the state-of-the-art guidelines for the use of geophysics in archaeology (Schmidt et al. 2015). Level I (“prospecting”) was carried out by means of a magnetic susceptibility (MS) survey. It was performed with a Bartington MS2 magnetic susceptibility meter equipped with a MS2D field loop. MS values were captured in 10–20 m interval transects and similar inlines. The MS values were recorded, along with an accurate position of the sample, using GNSS-RTK. A total number of about 500 readings covering roughly 6 ha were measured.

At Level II (“assessment”), a research magnetometer survey was applied. For this purpose, a pushed-cart-based multi-channel single-axis gradiometer system was used. In 2017 and 2018, an 8-channel SENSYS MX V3 with a 25 cm sensors separation distance was utilized, while in 2019 the survey was completed with a SENSYS MXPDA 5-channel system and the same sensors separation distance. Both systems were equipped with FGM650/3 single-axis fluxgate sensors and GNSS-RTK for real-time sample location. The magnetometer survey covered a total area of about 11 ha.

Evaluation of the site using the results of the magnetometer survey helped us to indicate the areas of further interest for the application of the Level III (“investigation”) survey. The main method applied for this purpose was Earth Re-

sistance (ER). Grid-based measurements were carried out with a Geoscan Research RM85 meter in a multi-depth twin probe configuration (three simultaneous readings with AM electrode separation distances of 0.5 m, 1.0 m, and 1.5 m). The ER survey covered an area of about 4.15 ha.

The final stage of the Level III survey was a small-scale targeted survey with the use of three complementary geophysical methods: Electrical Resistivity Tomography (ERT), Ground Penetrating Radar (GPR) and Seismic Refraction Tomography (SRT). The main focus of this part of the research was to evaluate the response of complementary geophysical methods (Pisz, Mieszkowski, and Jęczmienowski 2019: 129–131). Since the three abovementioned methods have been applied on a small area of interest (20 m × 40 m) selected on the basis of the results of magnetometer and ER surveys, the results of all of the abovementioned measurements contributed to the archaeological evaluation of the buried features.

To improve the archaeological interpretation of the data, the geophysical and spatial analysis of the prospection results was supported with test trenching near the East Gate, mapped out using the results of the geophysical surveys. The trench covered about 53 m<sup>2</sup> and had the shape of a long strip measuring 26 m × 2 m, provided with a rectangular extension (2.5 m × 1.5 m) to the south at its east end. The excavation was planned in such a way as to cut through the fortifications and *intervallum* and to reach the first building inside the fort in order to identify the structures and to recognize the relations between them.

## RESULTS

Our survey brought a considerable amount of new data regarding the phases and planning of the fort. Each method brought different results. While the ER proved to be more informative regarding the internal planning of the fort, the magnetometer survey revealed meaningful information about its earliest phase. At the same time, the test trench allowed to verify some of the geophysical results. Unfortunately, due to the presence of thick rubble layers we were unable to reach virgin soil in all parts of the trench.

### LAYOUT AND PHASES OF THE FORT

The geophysical examination has shown that the fort undoubtedly had at least two main phases [Figs 6, 7], with the possibility of further subdivision of Phase 2. In both phases it had a rectangular plan with rounded corners. The most important discovery was a previously unknown smaller fort (Phase 1) oriented along an east – west axis, with a total area of approximately 1.6–1.7 ha (about 140 m × 120 m) including the defensive walls. At some point (Phase 2) the fort was likely enlarged to the west, north and east (but not to the south due to the steep slope of the plateau on that side). The overall dimensions of the larger fort were 188 m × 148 m (2.74 ha).

### PHASE 1

The geophysical images [see Fig. 6] appear to indicate that the fort in Phase 1 was surrounded by two ditches, a wider external (about 5–7 m) and a narrower internal one (about 4–5 m), separated by a distance of 3–4 m [see Fig. 7]. The absence of high-resistivity anomalies along

the ditches suggests the absence of masonry walls, implying the likelihood of earth-and-timber fortifications. If that was the case, the fort would have been surrounded by an embankment, which is also not visible on the images obtained from geophysical measurements.

Due to intensive agricultural activity probably combined with a natural erosion of the terrace, the south frontage of the fort in both phases is very difficult to recognize, but it is very possible that the stone fortifications overlap the earlier embankment. There are no visible breaks along the ditch line to indicate the position of the gates.

Some anomalies visible solely on the magnetometry results [see Fig. 6] — especially in the north half of the fort but also to the south of the *principia*— could come from timber structures inside the earliest fort. They do not cross the perimeter of the inner ditch and are located at a distance of over 10 m from it. In some cases these anomalies could reflect barracks.

### PHASE 2

#### Defences

Unlike in Phase 1, the fort in Phase 2 was surrounded by a single ditch [Figs 6, 7, 8]. Traces of the new ditch were detected along three sides. In the trial trench near the East Gate we uncovered a short segment of the ditch of Phase 2 [Figs 9, 10, 11]. It was V-shaped, 6–7 m wide, about 1.8 m deep, dug out some 1.5–2 m from the curtain wall and partly filled with stones. Two lines visible on the geophysical image outside the curtain walls belonging to

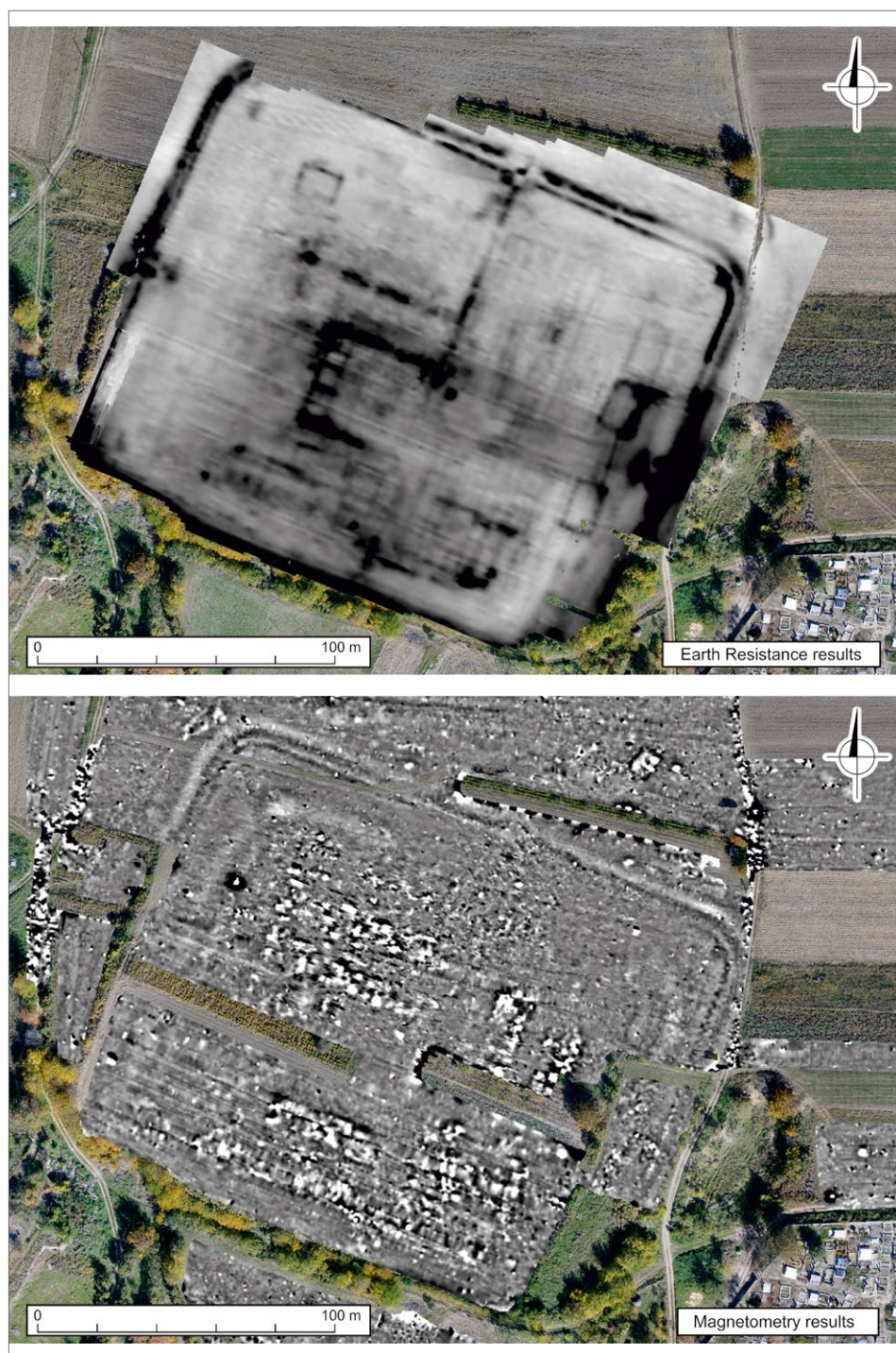


Fig. 6. Earth Resistance and magnetometry results (Prepared by M. Pisz, E. Jęczmienowski)



Phase 2 [see Fig. 6] result from dismantling the stone walls, which took place at an undefined point in time. A high-resistance line closer to the walls denotes a section of the ditch filled with stone debris. The defensive wall can be traced only as a 1.3 m wide robber trench [see Fig. 9]. Remains of the approximately 6.7–7 m wide rampart (*agger*) leaning to the wall were also recorded.

### Gates

All four gates of the stone fort are visible on the geophysical images [see Figs 6, 8], although the South Gate is barely traceable. Both *portae principales* were erected some 10 m to the east of the middle of their fortification walls (i.e. in about 5.5/10 of their lengths) while both *portae praetoria* and *decumana* were centrally placed.

The only unexcavated gate was the *porta praetoria*. The geophysical survey revealed that it was located precisely where it was supposed to be: in the middle of the east side of the fort. The gate was flanked by two internal rectangular towers, probably 4 m × 5 m large [Fig. 11]. The exact dimensions could not be established precisely since their east sides are badly preserved, most probably due to dismantling, like the adjacent section of the curtain wall. Nevertheless, they seem to project some 0.4–0.5 m from the line of the wall. Tower gates of *porta praetoria* had entrances roughly 1 m wide in their rear sides. It seems that there were two pairs of counterforts attesting the presence of a confined space between the towers — a *propugnaculum*.

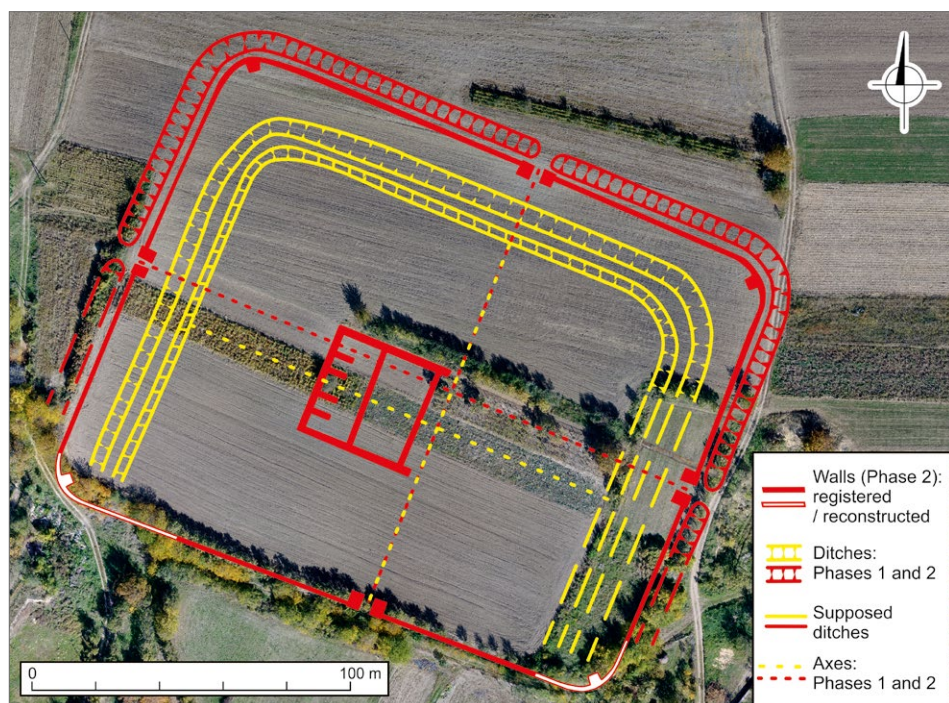


Fig. 7. Outline and axes of Phases 1 and 2 of the fort in Pojejena (Prepared by E. Jęczmienowski)

The remains of the hitherto undiscovered NW corner tower seem to be faintly visible on the ER image [see *Figs 6, 8*]. The tower is probably heavily damaged, and the geophysical measurements allow us only to suppose that its dimensions could be close to  $4\text{ m} \times 3.5\text{ m} \times 4.5\text{ m} \times 4.5\text{ m}$ . The NE corner tower—excavated in the 1970s but not published in detail—appears to have had dimensions of about  $4.5\text{ m} \times 3\text{ m} \times 4\text{ m} \times 4\text{ m}$ .

### **Principia**

The comparison of the plan published by the Romanian excavators [see *Fig. 3*]

with our ER image [see *Fig. 6*] indicates that the walls previously interpreted as fragments of two buildings (a granary and the *principia*) should be identified as the remains of the *principia* alone. It was also possible to establish that the headquarters building covered a surface of about  $37\text{ m} \times 35\text{ m}$  ( $1295\text{ m}^2$ ).

The building [*Figs 8, 12*] seems to have comprised a hall  $16\text{ m} \times 35\text{ m}$  large (*basilica principiorum*) and a courtyard of roughly  $18\text{ m} \times 35\text{ m}$  (about  $630\text{ m}^2$ ), but the putative wall separating these parts is only faintly perceptible on the geophysical image. A portico (about



Fig. 8. Layout plan of the fort in Phase 2 based on Earth Resistance results (Prepared by E. Jęczmieniowski)

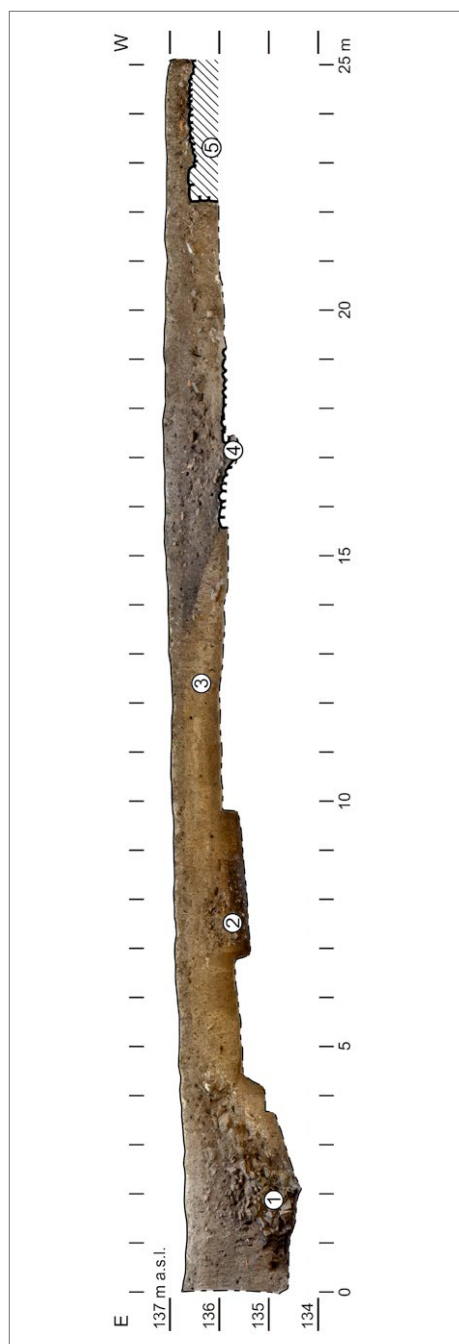


Fig. 9. Test trench near the East Gate: Southern profile. 1. Ditch; 2. Defensive wall (robber trench); 3. *Agger*; 4. *Via sagularis*; 5. *Horreum* (Prepared by E. Jęczmienowski)

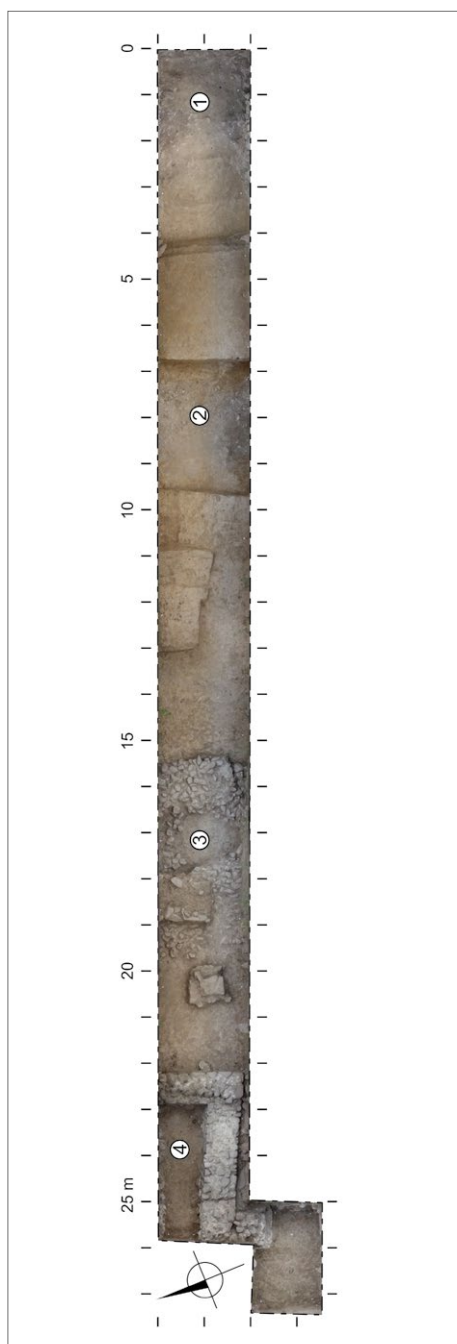


Fig. 10. Trial trench near the East Gate: Orthophoto. 1. Ditch; 2. Defensive wall (robber trench); 3. *Via sagularis*; 4. *Horreum* (Prepared by E. Jęczmienowski)



3 m deep) probably ran along the *via principalis*.

Five rooms, with the largest one (7 m × 7 m) in the center, can be discerned in the rear part of the headquarters complex [see Fig. 12]. The size and position of the central room points to its identification as the chapel (*aedes principiorum*). The other rooms had fairly uniform internal dimensions: two rooms adjoining the *aedes* measured 4 m × 7 m, while the corner ones were about 6 m × 7 m. Unfortunately, the geophysical image shows no trace of the entrance to the building.

## Streets

Traces of the main streets, which probably belong to Phase 2, are faintly visible on the geophysical image, but the best-visible section belongs to the *via principalis* [see Figs 6, 8]. It was 3–4 m wide. Some anomalies visible on the ER image suggest that the *principia* had a portico running along the *via principalis*.

The line of the *via praetoria* is rather unclear, for it is visible mostly on the surface as a line of small stones heading from east to west, although some faint anomalies suggest that the *via praetoria* did not run perpendicular to the *via principalis*, but

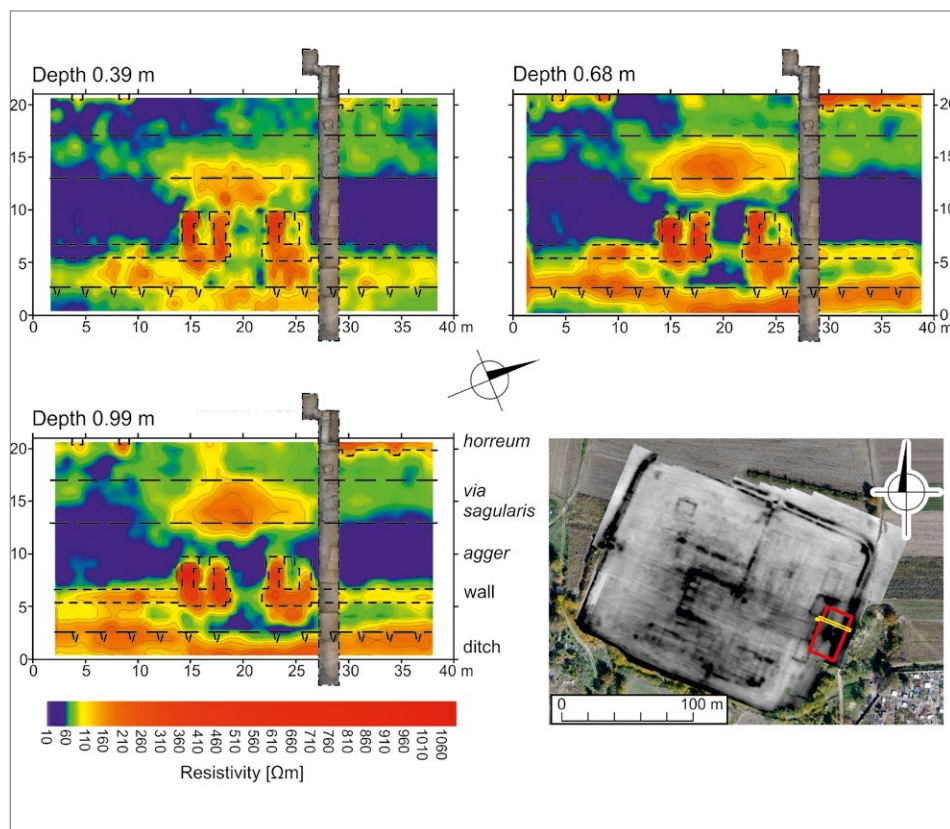


Fig. 11. Area of the East Gate: Electrical Resistivity Tomography results and orthophoto of the test trench (Prepared by R. Mieszkowski, M. Pisz, E. Jęczmienowski)



diagonally, in order to connect the East Gate with the middle of the front side of the headquarters building [see *Figs 6, 8*].

Faint traces of a short section of the *via decumana* are visible near the rear wall of the *principia* [see *Figs 6, 8*]. Its width observed on the ER results is 2–3 m. This section of the street is precisely on the axis of the two gates, indicating that the *via decumana* did not head towards the middle of the rear wall of the headquarters but to the north of it, closer to the buildings' corner.

The *via sagularis*, which ran along the defensive wall, is visible fairly clearly [see *Figs 6, 8*]. A 3–4 m wide segment of this street was exposed in the trial trench near the East Gate [see *Figs 9, 10, 11*]. It had at least three phases, each represented by a pavement of small and medium-sized stones. The *via sagularis* was constructed at a distance of roughly 6.7–7 m from the defensive wall and directly behind the rampart (*agger*) that abutted the wall. The distance separating the street and the east side of the north *horreum* measured approximately 2.6 m (third phase) and 3.4 m (first and possibly second phase of the street). It is possible that it was accompanied by a portico running along the wall of the granary [see *Fig. 10*]. The abundance of shoe nails found on the surface of the street attests to its intensive use by Roman soldiers.

Sections of less important streets have been traced on the geophysical image as well, especially at some distance (about 15 m) to the north and west of the *principia* [see *Figs 6, 8*]. To the west of the headquarters there are sections of a street parallel to the *via principalis*, while to the north of this building is a transverse street that

connected these two routes. Based on geophysics alone, the width of these streets can be estimated to about 2.5–3 m.

## Granaries

In the *praetentura*, close to the *porta praetoria*, we found traces of a pair of buildings of similar shape and size, measuring approximately 17 m × 12 m and 17.5 m × 11 m [see *Figs 6, 8*]. Both of them flanked the *via praetoria* with their short sides facing towards it. The geophysical image shows that the walls of both buildings were supported with buttresses [see *Figs 6, 11, 13*]. The trial trench exposed the southeast corner of one of these buildings [see *Figs 9, 10*]. Its 0.80 m thick walls were constructed in *opus incertum* with stones of various sizes joined with lime mortar. The buttresses, measuring about 0.60 m × 0.60 m with foundations of 1 m × 1 m, were built to strengthen the walls, which had been designed to support raised floors (Rickman 1971: 2, 85, 221–331, 269; Johnson 1987: 171; D. Campbell 2009: 41). Their presence, as well as the location of the two buildings, indicates that they were granaries (*horrea*). Buildings with similar features were discovered in other Roman military bases, including Dacian forts (Johnson 1987: 162–178; D. Campbell 2009: 41; Marcu 2009: 31, 43, 61–63, 97, 126–127, 135, 195, 215, 231; Găzdac and Isac 2007: 64). Some 2.5–1.5 m to the east of the north *horreum* were the remains of what may be the foundation of a column or a pillar, perhaps from the portico running along the *via sagularis*.

The thick layer of rubble originally forming the walls and roof of the building was rich in finds, primarily coins and stamped military tiles.

## Barracks

The barracks were identified in the *praetentura* of the fort [see Figs 6, 8]. The buildings were erected *per scamna*, i.e. with their short sides facing the north wall. Their plan permits to identify two double barracks and one single barrack next to the north *horreum*. The double barracks had approximate dimensions of 55–56 m × 16–17 m (about 960 m<sup>2</sup>) and their rooms were about 3–4 m (*armae*) and 4.5–5.5 m (*papilio*) wide.

The rooms of the single barrack were slightly narrower, measuring respectively about 3.5 m and 4–4.5 m. The length of the building was not established, but if it corresponded to the double barracks in shape, then the total dimensions should be about 55–56 m × 7.5–8 m (about 430 m<sup>2</sup>). All buildings in the left *praetentura* were separated by passages about 3–3.5 m wide.

Another building, possibly a shorter barrack oriented *per scamna*, is visible in the right *praetentura*, next to the south *horreum* [see Figs 6, 8]. It was divided into two long strips roughly 3 m (west) and 5 m (east) in width, resembling the division into rows of the *arma* and *papilio*.

Traces of the barracks visible on the ER image are faint, indicating their poor preservation.

## Other buildings

Our survey revealed traces of other buildings, whose function is hard to determine. In the *latera praetori*, close to the *porta principalis sinistra*, very faint anomalies seem to belong to a structure oriented *per scamna* [see Figs 6, 8]. It appears that the building measured about 27 m × 10–11 m and was divided lengthwise into two equal parts. It is considerably shorter and

wider than the barracks we detected in the *praetentura* and noticeably shorter than the alleged barrack excavated in the 1970s (Gudea and Bozu 1979: 182, Fig. 1, 183).

In the *latus dextrum* we found three orderly arranged rectangular buildings [see Figs 6, 8] separated by narrow corridor-like passages (about 1.5 m wide), with a total area of about 490 m<sup>2</sup>. The *latus dextrum* was a frequent location of a commander's house, so such identification would be tempting, yet the layout of the complex does not reveal traces of a courtyard — a common feature of Roman *praetoria*.

Vague traces of another building were detected in the right *praetentura* to the west of the barrack [see Figs 6, 8]. It seems to be the same length (about 45 m), but it looks like it had a U-shaped layout and possibly an inner courtyard. The building probably measured about 45 m × 31 m (1380 m<sup>2</sup>) and occupied about 5.27% of the internal area of the fort. Traces of hydraulic mortar were detected on the surface near the southeast corner of this building. The presence of hydraulic mortar suggests that the building could have been the *thermae*, although its presence inside the walls is unusual for auxiliary forts in Dacia (Marcu 2009: 146).

Another structure was detected in the left *praetentura*, some 3 m to the north of the *horreum*. It is similar in width to the granary (11–11.5 m), but longer (about 19 m) [see Figs 6, 8]. It is not so well preserved and there are no traces of buttresses suggesting a different purpose than of nearby granaries.

The only clearly discernible building in the *retentura* is visible near the north-

east corner of the fort [see *Figs 6, 8*]. It has a rectangular plan of about 14 m ×

10 m and is oriented along the east – west axis.

## DISCUSSION

### FORT'S LAYOUT AND PHASES

The small fort (Phase 1) is the earlier (if not the earliest) military base in Pojejena, as indicated by the position of the *principia* of the larger fort of Phase 2 [see *Figs 6, 7*]. It is placed precisely in the center of the Phase 1 fort. During Phase 2, after the enlargement of the base in all directions except the south, where the steep slope prevented expansion, the headquarters remained in its original location and ended up to the south of its usual place on the axis between the two *portae principales* [see *Fig. 7*]. A similar phenomenon was observed in the fort of Gilău (Găzdac and Isac 2007: 71–72, *Figs 23–24*).

Former excavators thought that the stone fort was preceded by an earth-and-timber fort of almost the same dimen-

sions (Gudea 2001: 13, 15, 59). Old results do not necessarily support this, but the possibility of an initial earth-and-timber phase of the large fort should be considered. Moreover, it was initially assumed that the stone walls were erected in the mid-2nd century (Gudea and Uzum 1973: 86–87, 95; Gudea 1975: 339–340; Gudea 1977: 225; Gudea and Bozu 1979: 184) and only later this dating was changed to the Trajanic–Hadrianic period (Gudea 2001: 19, 31–32, 59–60). A single coin of the emperor Antoninus Pius found in the *agger* (some 40 cm below its highest preserved level) near the East Gate may indicate some mid- or late 2nd century works. In Gilău, a smaller earth-and-timber fort, built around 106 CE, was enlarged in the same technique in 117/118

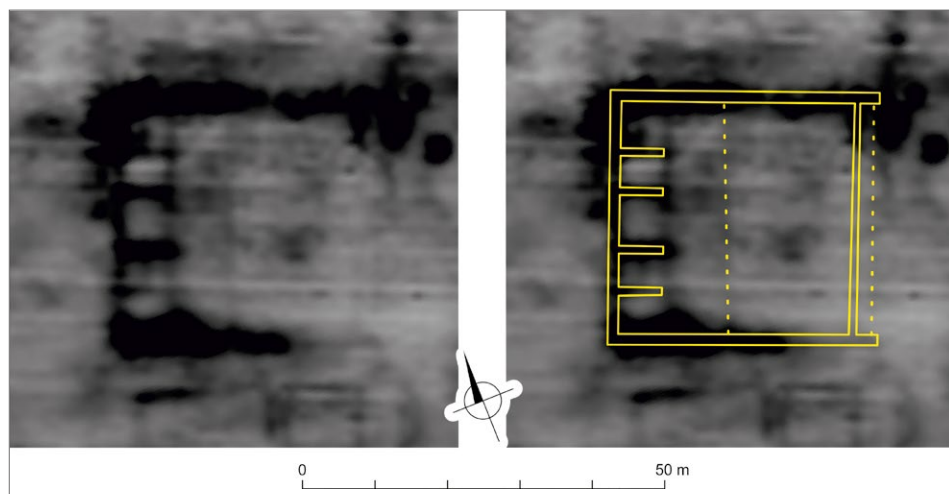


Fig. 12. *Principia*. Earth Resistance results and their interpretation. Dotted line marks uncertain elements – wall between the *principia* and the portico along the *via principalis* (Prepared by E. Jęczmienowski)

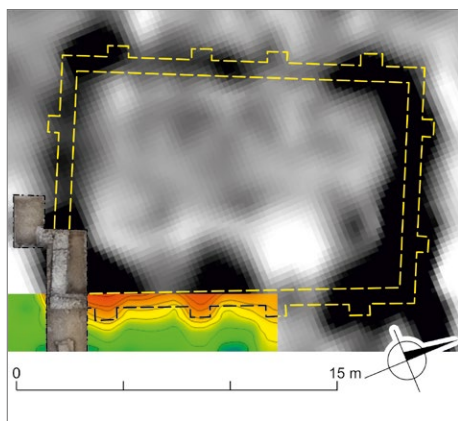


Fig. 13. North *horreum*. Plan reconstructed based on the trial trench, Electrical Resistivity Tomography and Earth Resistance results (Prepared by E. Jęczmienowski)



Fig. 14. Coin of Constantius II issued in 350–355 CE, found among the debris previously forming the corner of the north *horreum* (Prepared by E. Jęczmienowski, C. Timoc)

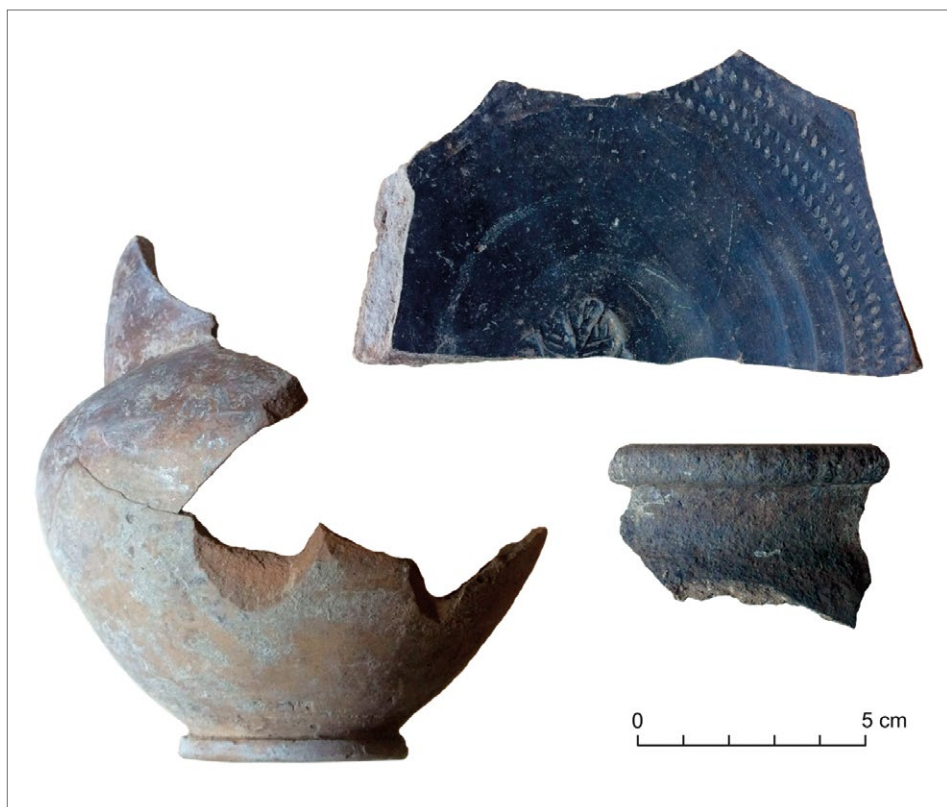


Fig. 15. Selection of 4th-century Roman pottery found during fieldwalking surveys outside the fort in 2017–2019 (Prepared by C. Timoc, E. Jęczmienowski)

CE and later rebuilt in stone, possibly under Hadrian, if not later (Găzdac and Isac 2007: 30–34; cf. Marcu 2009: 71–72). If older interpretations are considered credible, then the following phases could be proposed: Phase 1 – the small earth-and-timber fort probably dating from the late 1st or turn of the 2nd century, Phase 2a – the large earth-and-timber fort from the early 2nd century, and Phase 2b – the large stone fort, most probably not earlier than the mid-2nd century. The coins found among the debris of the *horreum* (issued by Severus Alexander, Gordian III, Trebonianus Gallus and Gallienus) indicate that the stone fort (Phase 2b) was used by the Romans until the second half of the 3rd century, probably the 260s CE, since the coin of Gallienus may have been issued during his sole reign (260–268 CE).

The geophysical image does not show any traceable structures that could be associated with the Tetrarchy period or later. However, the test trench excavated in 2019 produced one coin of Constantius II issued in 350–355 CE [Fig. 14]. It was found among the debris that previously formed the corner of the north *horreum*, while pottery sherds typical for Roman production of the 4th century [Fig. 15] were recorded during the fieldwalking surveys outside the fort in 2017 and 2018. These finds may suggest at least a temporary, perhaps Roman presence in the area of the Pojejena fort in the third quarter of the 4th century.

### PHASE 1

Although measurements could not be conducted on the slope of the Danubian terrace directly to the south of the fort, it is possible that its presence made the ditch

unnecessary (Gudea and Uzum 1973: 96).

The embankment cannot be identified, leading to the assumption that it was leveled during enlargement of the fort, and the soil from it was used to fill the former ditches. There are no visible breaks along the ditch line, but the position of the *principia* suggests that the north and south passages should be located along the same axis as the gates of the large fort, while the West and East Gates of Phase 1 ought to be placed approximately 13 m to the south of the later fort's axis [see Figs 6, 7]. The two gates, as well as the corner and interval towers, were likely made of timber (Johnson 1987: 88–103).

According to Hyginus and Vegetius, the *porta praetoria* of the Roman fort should face the enemy or —as Vegetius alone indicates— east (Hygin. 56; Veget. 1.23; Richardson 2005: 415). In Pojejena, the position of the *principia* shows that the fort was oriented along the north-west – southeast axis with the *porta praetoria* facing southeast [see Fig. 7], towards the strip of foothills stretching along the Danube and squeezed between the river to the south and the mountains to the north [see Fig. 2].

The main streets were not traced geophysically, but their course can be rather securely reconstructed along the probable axes linking the earliest gates [see Fig. 7]. Structures visible on magnetometry imaging inside the perimeter of the inner ditch partly overlap stone buildings of Phase 2 recorded on the ER [see Figs 6, 7, 8]. They were made of less durable materials and their function is uncertain, but at least some of them could be identified as barracks.



These structures may be linked to Phase 1, yet their dating is uncertain, for one of them was partly excavated in the 1970s but not precisely dated: the 40 m × 10 m (400 m<sup>2</sup>) wattle-and-daub barrack to the north of the *principia*. It was only reported that the artifacts from the central area of the fort (along with the *principia* and streets) were dated to the late 1st – mid-3rd century (Gudea and Bozu 1979: 183–184; Gudea 2001: 59–60).

## PHASE 2A/B

### Defences

Traces of the ditch were detected along three sides and, again, a ditch along the south wall may have been unnecessary (Gudea and Uzum 1973: 96). The uncovered short section of the V-shaped ditch [see Figs 9, 10] was similar to its sections observed in the 1970s along the west, north and east walls (Gudea and Uzum 1973: 87). These were 7–9 m wide and 2.5 m deep, while the width of the robber trench (about 1.3 m) [see Fig. 9] corresponds to the preserved sections of the wall built in *opus incertum* (Gudea and Uzum 1973: 87; Gudea 2001: 60).

The remains of the rampart (*agger*) abutting the wall [see Fig. 9] may have served as an embankment of the initial large earth-and-timber fort (Phase 2a), which would have been provided with wooden gates, corner towers and possibly also interval towers (Johnson 1987: 70–81, 88–103).

It appears that after the fort was enlarged both *portae principales* remained on the same axis as the gates of the earlier phase, while *portae praetoria* and *decumana* must have been moved

roughly 13 m to the north of the alleged axis from Phase 1. The geophysical survey and previous excavations allow to assume that all four gates had a very similar layout [see Figs 4, 6, 11] and were built at the same time. Yet, the *porta decumana* had the narrowest passage, which may reflect its specific role, secondary in comparison to the other gates (Johnson 1987: 112; Sommer 1988: 533–534). At the same time, only *portae praetoria* and *principalis dextra* were provided with two pairs of counterforts attesting the presence of *propugnacula* — a confined space between the towers. It may reflect the importance of the gates opening on the south (towards the *vicus* and probably the hypothetical harbor) and on the east (towards the expected enemy).

It seems that all corner towers had similar dimensions [see Figs 6, 8]. The results of geophysical measurement have shown that both north corner towers probably measured 4 m × 3.5 m × 4.5 m × 4.5 m (NW) and 4.5 m × 3 m × 4 m × 4 m (NE). Dimensions of both south corner towers published by the Romanian researchers are 4 m × 3.25 m × 2.5 m × 2.5 m (SE) and 4 m × 2.9 m × 2.5 m × 2.5 m (SW) (Gudea and Bozu 1979: 181–183; Gudea 2001: 60). These measurements exclude the thickness of the defensive wall (1.3 m), which forms the front side of the towers. Counting the wall, they measured about 4.25 m × 3.25 m × 3.8 m × 3.8 m (SE), 4 m × 2.9 m × 3.8 m × 3.8 m (SW). The towers were provided with 0.85–0.90 m wide entrances in their rear walls (Gudea and Bozu 1979: 181–183).

The geophysical image shows no traces of interval towers along the line

of the wall [see Fig. 6], although they are a common element of Roman fortifications (Johnson 1987: 88–89), and they occur in other nearby forts, even ones smaller than Pojejena (Gudea 2001: 81–84; Jęczmienowski 2013: 41, Fig. 10; Tudor 1965: 36, IV; Vasić 1984: 98, Sl. 6). However, the absence of interval towers was reported e.g. in the forts at Slăveni and Râşnov (Marcu 2009: 218, 227–228, 295, Pl. 35, 297, Pl. 37; Gudea 1997: 83–85, 93), as well as at Hadrian's Wall at Birdoswald, where interval towers were built only on the side projecting towards the north (Wilmott 1997: 192). Either there were no interval towers in Pojejena, or we were unable to detect them due to their construction method. If the structures were made of timber rather than stone, their traces in the form of post holes would be nearly impossible to recognize using geophysical methods.

### **Principia**

The atypical location of the headquarters building may be attributed to the preservation of the building's position after enlargement of the fort [see Fig. 7]. This phenomenon is known from Gilău, where the headquarters retained its place after the fort's expansion during the reign of Hadrian (Găzdac and Isac 2007: 32–39, 71–72, Figs 23–24; Marcu 2009: 71–73).

It remains obscure why the *principia* of Pojejena were not moved to the north when the fort was enlarged. Possibly the headquarters and other buildings in its vicinity were still in use and it was decided not to rearrange this area of the fort. Hypothetically, it cannot be ruled out that the stone *principia* were erected

prior to the decision to enlarge the fortifications. At Novae (Svištov), the construction of the legionary *principia* began as early as the Flavian period, while the stone fortifications were built during the reign of Trajan (Sarnowski et al. 2012: 50). Nevertheless, analogies from Dacia and Moesia Superior suggest that the stone *principia* of auxiliary forts emerged concurrently with stone fortifications or even later. At Novae (Čezava), this happened during the reign of Trajan (Vasić 1984: 98–99), and in Gilău at the end of the 2nd – early 3rd century, i.e. after construction of the stone walls in the middle of the 2nd century (Găzdac and Isac 2007: 33–34; Marcu 2009: 71–73). If that was also the case in Pojejena, and if the dating of construction of the fortification walls to the middle of the 2nd century is correct, then the stone headquarters may have replaced some wooden *principia* around that time, if not later.

The building in Pojejena seems to lack additional rooms surrounding the internal courtyard [see Fig. 12]. Such rooms were often found inside the headquarters buildings of the Upper Moesian and Dacian forts, for example in Drobeta (Drobeta-Turnu Severin) (Tudor 1965: 34, III), Transdrobeta (Kostol) (Petrović and Vasić 1996: 24, Fig. 3), Tibiscum (Jupa) (Benea 2018: Figs 28–29), Buciumi (Marcu 2009: 264, Pl. 4), Samum (Căşciu) (Marcu 2009: 265, Pl. 5), Slăveni (Marcu 2009: 297, Pl. 37), Câmpulung-Jidava (Marcu 2009: 298, Pl. 38), Răcari (Marcu 2009: 301, Pl. 41), and possibly Čezava (Novae) (Vasić 1984: 98, Sl. 6). While *principia* without these rooms are less common, their lack is not rare. Such headquarters were found, for example, in Gilău (Marcu

2009: 267–268, Pls 7–8), Vărădia (Marcu 2009: 277, Pl. 17), and Racovița (Marcu 2009: 295, Pl. 36).

The building from Pojejena was markedly similar to the *principia* found in Gilău, in particular its first two phases dated to the Trajanic–Hadrianic period (Găzdac and Isac 2007: 30–35; Marcu 2009: 71–73). There were five rooms in the rear of the building and a portico running along the *via principalis*, but no clear traces of a *basilica* separated from the courtyard. The building was made of timber and was roughly two times smaller than the one in Pojejena (Marcu 2009: 72). Later, during the stone phase of the headquarters, a colonnade separated the *basilica* from the *forum militare* (Găzdac and Isac 2007: 72, Fig. 24; Marcu 2009: 268, Pl. 8).

Even though the plan of the *principia* in Pojejena is somewhat less common, it still serves as a rather typical example of a headquarters building. The share of the area it covered inside the walls of the fort (about 4.94%) confirms this. The size of similar buildings in other forts and legionary fortresses in Dacia and Moesia varied, yet they tended to cover a similar part of the area inside the walls. Almost identical percentages are attested for two significantly smaller headquarters buildings from Čezava (about 775 m<sup>2</sup> and 4.61%) (Vasić 1984: 100, Sl. 7) and Gilău (Trajanic – about 645 m<sup>2</sup> and 4.5%) (Marcu 2009: 72). This percentage sometimes varies. After the significant enlargement of the fort of Gilău at the beginning of Hadrian's reign (about 789 m<sup>2</sup> and 2.6%), and of the headquarters itself in the middle of the 3rd century (about 1086 m<sup>2</sup> and 3.57%), the building

still covered a smaller part of the area than in the case of Pojejena (Marcu 2009: 71–73). Also the headquarters of the legionary fortress in Novae (6200 m<sup>2</sup> and about 3.5%) covered a smaller percentage (Sarnowski et al. 2012: 50). However, the *principia* of Drobeta (about 1170 m<sup>2</sup> and 6.85%) (Tudor 1965: 34, III) and Transdrobeta (about 1122 m<sup>2</sup> and 7.43%) (Petrović and Vasić 1996: 24, Fig. 3) occupied larger parts of the forts. The percentage of the fort's area that the headquarters in Pojejena covers falls within this range.

The close analogy of Gilău suggests that the Phase 1 fort in Pojejena may have had *principia* that were not only wooden, but also smaller. This is very probable; otherwise the building would have covered as much as about 10% of the internal space of the earliest fort. The internal area of the fort during Phase 1 must have been smaller than 1.6–1.7 ha, presumably 1.3–1.4 ha. In that case, the hypothetical *principia* of the Phase 1 fort might have covered about 455–1050 m<sup>2</sup> (3.5–7.5% of the presumed internal area of the fort), possibly approximately 520–700 m<sup>2</sup> (4–5%).

## Streets

The width of the *via principalis* on the geophysical image is between three and four meters [see Fig. 6]. This measurement is consistent with the width observed during excavations near the North Gate in the 1970s (4 m, Gudea 1975: 338). Additionally, the passages of the *porta principalis sinistra* and the *porta principalis dextra* have spans of about 3.25 m and 3.55 m, respectively [see Fig. 4].

The position of the *principia* established in Phase 1 remained unchanged despite the new locations of the *portae*

*decumana* and *praetoria*. As a result, *via praetoria* and *via decumana* are not aligned with the building's axis [see Figs 6, 7, 8]. Only the presence of *via decumana* was firmly detected during the geophysical surveys. It follows the axis of the fort and seems to be the narrowest of the main streets. The ER results indicate its width to be about 2–3 m, which corresponds with the width of the West Gate passage (approximately 2.4 m). The *via praetoria* would not have run straight, but diagonally to connect the gate with the center of the front of the headquarters building. It may resemble the *via principalis* in Râşnov, running obliquely to the *principia* in order to connect both principal gates (Marcu 2009: 290, Pl. 30). The position of the buildings flanking the *via praetoria* [see Fig. 8] also supports the possibility that the street was not aligned with the axis of the fort. If the width of the street matched the passage of the *porta praetoria* (3.2 m), it would also be comparable to the *via principalis*.

Past excavations [see Fig. 3] revealed roads 3.5 m wide, built directly next to the west and north walls of the *principia* (Gudea and Bozu 1979: 183). One could expect a similar street along the south wall of the headquarters building, but we were unable to distinguish it solely on the basis of the geophysical results. The street directly to the west of the *principia* might have been the *via quintana*, and the anomaly visible to the south of it on the ER image could be its continuation [see Figs 6, 8].

### Granaries

The coins of Severus Alexander, Gordian III, Trebonianus Gallus and Gallienus found among the debris show that the

north granary building was in use at least from the first half of the 3rd century up to the end of the Roman presence. The precise date of its construction cannot be established, but the stamped military tiles found there may suggest that it was built in the 2nd century. The identified stamps were produced by *legio IIII Flavia* during the rule of Trajan or in the early years of Hadrian (IDR App. III I/1–3) [Fig. 16:a] and by *legio VII Claudia* in the 2nd century but not before the Hadrianic period (IDR App. III XXXIV/2–3) [Fig. 16:b]. Others were dated more generally in the 2nd century – first half of the 3rd century (IDR App. III XXXII/12, XXXVI/14) [Fig. 16:c, d]. The imprecise dating of the building is due to the broad chronology of some of the stamped tiles, which indicates it could have been erected in the Trajanic–Hadrianic period or later in the 2nd century. The later reuse of these materials is also possible. It cannot be ruled out that the north granary was used, if not partly restored, in the second half of the 4th century, as a coin of Constantius II dated to 350–355 CE [see Fig. 14] was found inside the building, very close to the wall, inside the debris that used to form the building's corner walls.

While the overall layout of the granaries seems to have been rather accurately reconstructed [see Figs 8, 13], the location of the entrances remains uncertain. The usual position of the entrance to a granary was on the short side of the building (Johnson 1987: 171; Marcu 2009: 134). This would have facilitated the transport and loading of goods delivered through the *porta praetoria*. In most forts in Dacia and in other provinces, the granaries were situated along the *via principalis* or near one of the *portae principales* (Marcu 2009:

262, 264–265, 297–298, 301; D. Campbell 2009: 12–13, 28–29, 48). In cases where two granaries were present, they were usually built in *latera praetorii* along the *via principalis*, on both sides of the headquarters or close to both gates (Marcu 2009: 279; D. Campbell 2009: 15–16, 29). The location of the granaries in Pojejena near the *via praetoria* may have depended on access roads and the fort's position [see Fig. 2]. The most accessible open area was on the east side of the fort.

According to Felix Marcu (2009: 63), granaries usually occupied 1.5–2% of the total surface area in a Roman fort. The two granaries found in Pojejena filled

1.51% of the intramural area (about 396.5 m<sup>2</sup>). The dimensions of these buildings were consistent with a stone granary in Samum (Cășeu), Dacia (*Horreum* 1, 379.5 m<sup>2</sup>, 1.39% of the total surface), later replaced by another granary of similar size (*Horreum* 2, 365 m<sup>2</sup>, 1.34%) (Marcu 2009: 62–63). The *horreum* found inside the fort of Răcari in Dacia corresponded in area to one granary from Pojejena (about 180 m<sup>2</sup>) and occupied almost the same percentage of the fort's internal space (about 0.7%) (Marcu 2009: 215).

The capacity of the Pojejena granaries, based on the total area inside their walls, was roughly 310 m<sup>2</sup>, with the north

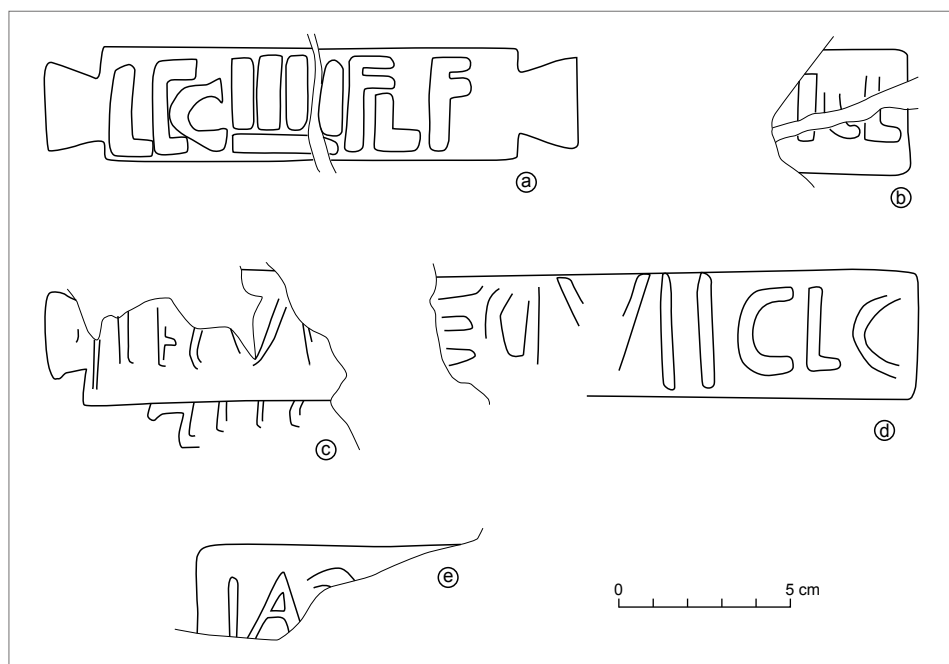


Fig. 16. Selection of stamped military tiles: a – *LEG(ionis) IIII FL(aviae) F(elicis)* (Trajanic – early Hadrianic period, IDR App. III I/1); b – *[LEG(ionis) VI] I CL(audiae)* (2nd century, not earlier than the Hadrianic period, IDR App. III XXXIV/3); c – *LEG(ionis) VI] I CL(audiae)*] (2nd century – first half of the 3rd century, IDR App. III XXXII/12); d – *[LE]G(ionis) VII CL(audiae)* (2nd century – first half of the 3rd century, IDR App. III XXXVI/14); e – *[COH(ortis) V] GAL(lorum)* (probably 2nd century, IDR App. III LXVIII/2) (Prepared by E. Jęczmienowski, C. Timoc)



building measuring about 160 m<sup>2</sup> and the south one about 150 m<sup>2</sup>. The amount of grain that may have been stored inside can be estimated using a formula proposed by Stephen R. Matthews (2018: 34, 136, 268), according to which each square meter of a building's total internal area corresponds to 0.751 ton of grain piled up to a height of 1 m. The two granaries in Pojejena could therefore hold 232.81 tons of grain. Taking Polybius' testimony of the daily ration per soldier at 0.809 kg, the buildings could potentially hold an annual supply of grain for 788 men (Polyb. 6.39; Matthews 2018: 268–269).

### Barracks

The stone-built or stone-substructured barracks discovered by our team [see Fig. 8] and the structure investigated in the 1970s [see Fig. 3] had surface areas of about 380 m<sup>2</sup>, 400 m<sup>2</sup> and 430 m<sup>2</sup> for single barracks, and 480 m<sup>2</sup> in the case of double barracks. These dimensions correspond to the average buildings of this type (Davison 1989: 8). Almost all the known barracks in Dacian auxiliary forts were of virtually the same size varying between 324 m<sup>2</sup> and 475 m<sup>2</sup> (Marcu 2009: 46). The faint traces of these buildings visible on ER imaging indicate their poor state of preservation [see Fig. 6]. However, their position allows us to suppose that the centurions' houses were located closer to the *via sagularis*, as in other Roman forts (D. Campbell 2006: 53).

The structures visible on the magnetometry results may potentially be linked with Phase 1 [see Fig. 6]. However, the artifacts from the central area of the fort —where, among others, the barrack partly excavated in the 1970s was locat-

ed— are very generally dated to the late 1st – mid-3rd century (Gudea and Bozu 1979: 184), implying that some of the discernible structures were constructed later or simply remained in use during Phase 2. The mentioned wattle-and-daub barrack erected *per strigas*, and measuring 40 m × 10 m (about 400 m<sup>2</sup>) (Gudea and Bozu 1979: 183; Gudea 2001: 59–60), seems to fit into the Phase 2 street grid visible on the ER image, as does the structure to the north of it. Moreover, there are no traces of stone structures erected above the partly excavated barrack. The structure to the north of it, as well as the ones to the south of the *principia*, partly overlap the stone buildings visible on the ER image. However, the date of construction of the stone buildings is unknown, and it is possible that some earth-and-timber structures erected in Phase 1 survived into Phase 2. They would have functioned alongside the stone-built (or stone-substructured) barracks in the *praetentura* until the partial remodeling of these areas during the 2nd and/or 3rd century.

### Retentura

The ER image shows an almost complete lack of recognizable structures in the *retentura*; on the magnetometry, in turn, some anomalies are visible but difficult to interpret [see Fig. 6]. This may result from the very poor state of preservation of the buildings and/or their timber construction, practically untraceable on the ER results. This, along with the fact that the *via decumana* was the narrowest of the four main streets, may indicate that this part of the fort was the least developed.

## Garrison's strength and units

Based on the writings of Polybius and Hyginus, as well as field observations, Alan Richardson found a paradigm allowing the calculation of the hypothetical strength of garrisons of Roman auxiliary forts. The concept assumes that the army comprised multiples of a basic unit (notional cohort) that required a fixed amount of space inside the walls (eight *acti quadrati* — about 1.010 ha), and that the *intervallum* in such structures occupied a similar percentage of the area (about 23%) (Richardson 2002). To put it simply, one notional infantry cohort of 480 soldiers required an average area of 1.315 ha inside the walls (about 1.010 ha without *intervallum*). In Phase 1, the fort covering the total area of 1.6–1.7 ha (with the internal area close to 1.3–1.4 ha) was consistent with Richardson's Group 1 (1.315 ha). Such a fort could easily accommodate one regular infantry cohort of 480 soldiers. The Phase 2 fort (2.62 ha inside the walls) corresponded to Group 5 (average 2.63 ha) and could house either two infantry cohorts totaling 960 men or one *ala quingenaria* cavalry unit consisting of 480 soldiers.

The presence of the two granaries discussed above supports the evaluation of the fort's strength in Phase 2. Although the nominal number of soldiers in the unit was 960 and the capacity of the two granaries could potentially hold an annual supply for only 788 men, it is a well-known fact that units were never based in their full strength (B. Campbell 2006: 3, 110).

The barracks also provide clues concerning the garrison's strength. A typical barrack could house a *centuria* of 80 men (Hygin. 1, 28; D. Campbell 2009: 25), so six barracks (two double and two single

ones) visible on the ER imaging could house 480 men, or one cohort, in the *praetentura* alone. The *latera praetorii* featured a wattle-and-daub barrack excavated to the north of the *principia* in the 1970s, as well as three buildings of uncertain identification and dating. If all four were barracks, then the *latera praetorii* could house another 320 men. Together, the barracks in the *praetentura* and in the *latera praetorii* would accommodate a total of 800 men — a number similar to the above estimations. These calculations would require adjustment if the structures in the *retentura*, unrecognized on the geophysical image due to their construction material or poor state of preservation, were in fact barracks.

The presence of *ala Frontoniana Tungrorum* in Pojejena is based on two textual sources. One is a *tabula ansata*-type bronze tablet found in Pojejena, which reads *A(la) I Frontonian(a) / (turma?) Valeri Firmi* (ILD 179). The other is a funerary monument found in Vršac, some 50 km from the fort, set up by a *signifer* of the unit for his spouse (CIL III 6274 = IDR III/1 107). These two finds are dated no later than Trajan's rule, while already in 114 and 113/115 CE this unit is mentioned on diplomas from Pannonia Inferior, and later in the territory of Dacia Porolissensis, where it is recorded for the first time in 128 CE (Ciongradi, Bota, and Voişian 2009; Matei-Popescu and Țentea 2018: 29). Based on this evidence, Florian Matei-Popescu and Ovidiu Țentea (2018: 29–30) assume that the unit was moved to the north of the Danube in the beginning of Trajan's rule and manned the fort of Pojejena for some time during this emperor's reign.

The second unit connected with Pojejena —*cohors V Gallorum*— is attested by two inscribed stone altars uncovered in the area of the fort (AE 1963: 165 = IDR III/1 10; AE 1972: 490 = IDR III/1 11) and by stamped building materials found during past fieldwork (Gudea and Bozu 1979: 184; IDR App. III LVII/1 = CIL III 12632 = IDR III/1 23b; IDR App. III LXVIII/1 = IDR III/1 23a; IDR App. III LXVIII/2; IDR App. III LXIX/1 = IDR III/1 23c; IDR App. III LXX/1), as well as latest fieldwalking surveys [Fig. 16:e] (IDR App. III LXVIII/2). It seems that this unit remained in Pojejena at least until the end of the 2nd century (Matei-Popescu and Țentea 2018: 57).

Military diplomas suggest the existence of two auxiliary units bearing the same name but different secondary epithets. It seems that initially it was a single unit of *cohors V Gallorum*, recorded on military diplomas from Moesia and then Moesia Superior, dated to 75 CE (RMD I 2), 94 CE (CIL XVI 39; RMD V 335) and 100 CE (CIL XVI 46; AE 2008: 1731; AE 2014: 1644; RMD IV 218). This unit, or its part, was probably moved to Dacia due to Trajan's campaigns and is attested on military diplomas until 119 CE (RMD III 148; CIL XVI 163 = IDR I 3; RMD V 351 = AE 2005: 1703). At some point, two different units emerged: *cohors V Gallorum et Pannoniorum*, attested certainly for the first time in 126 CE under Upper Moesian command (Eck and Pangerl 2015: 231–236, no. 4), and *cohors V Gallorum Dacica*, placed under Dacian command and recorded first in 124 CE (AE 2010: 1857). The latter unit may have been created from the part of *cohors V Gallorum* that remained in Dacia after the

war, while the part remaining in Moesia Superior evolved either from the detachment of *cohors V Gallorum* that never left this province or from the one that was moved back south of the Danube after the war. The inscriptions in stone and tile stamps found in Pojejena bear no secondary epithets. Although Pojejena lies on the left side of the river, it did not necessarily remain under Dacian military command. Therefore, it is impossible to determine which unit was stationed there. The military command over units garrisoned on the left bank of the Danube changed over time. An example is *cohors III Campestris* from Drobeta, which remained under Upper Moesian command during the conquest of Dacia (CIL XVI 49; CIL XVI 54; RMD V 339; AE 2008: 75; Marcu 2009: 139; Matei-Popescu and Țentea 2018: 43–44) and subsequently from after 124 until 168 CE (RMD I 55; RMD IV 247; RMD V 418; AE 2008: 1712, 1718, 1742, 1744–1747; AE 2014: 1652; Eck and Pangerl 2015: 236–239, no. 5; 2017; 2018; Matei-Popescu and Țentea 2018: 43–44). However, it was under Dacian command from the conquest until at least 124 CE (CIL XVI 57; IDR I 2; RMD III 148; RMD IV 220, 225; AE 2010: 1857; AE 2011: 1790; Matei-Popescu and Țentea 2018: 43–44), and then again after 168 CE (RMD II 123; Matei-Popescu and Țentea 2018: 43–44).

Matei-Popescu and Țentea (2018: 56–58) argued that *ala Frontoniana Tungrorum* was replaced by *cohors V Gallorum Dacica*, yet we believe that it was in fact *cohors V Gallorum et Pannoniorum*, which was under Upper Moesian command around the same time as *cohors III Campestris* from Drobeta. The fort in Pojejena might have

been under Dacian command around the time when *ala Frontoniana Tungrorum* was present there, i.e., for some time before 113–115 CE. Stamped bricks of the *legio IIII Flavia* dated to the Trajanic–Hadrianic period are well attested in Pojejena (ten pieces) (IDR App. III I/1–3, IV/3, V/7, VI/7–9, 11, XII/1). This legion was based in Berzobis after Trajan's Dacian war and remained there until the reign of Hadrian, who moved it back to Singidunum (Matei-Popescu and Țentea 2018: 12). After some time, when *cohors V Gallorum* was the only unit present in Pojejena, the garrison was placed under the command of the Moesian legate (sometime between 124 and 126 CE). Around the same time, Drobeta on the left bank of the Danube was also under Upper Moesian command. Numerous finds of stamped bricks of *legio VII Claudia* from Moesia Superior (36 pieces) may point to relations between this legion and the garrison of Pojejena. These pieces are broadly dated to Roman rule in Dacia, but mostly to the 2nd century and, in some cases, more precisely to the reign of Hadrian (IDR App. III XXI/1, XXX/1–2, XXXII/3, 12, 18, 20, XXXIV/1–3, XXXVI/1–5, 7–24, XXXVII/2, 4, XXXVIII/1).

However, only *ala Frontoniana Tungrorum* corresponds to the garrison's estimated strength in Phase 2 based on the fort's area, capacity of its granaries, and probable number of barracks. *Cohors V Gallorum*, which was a quingenary infantry cohort, would hypothetically correspond to the earlier fort of Phase 1. The chronological order of the phases seems to contradict the estimations of the garrison's strength in both phases and the epigraphical data concerning the changes to the fort's crew,

but it is highly unlikely that the small fort was later than the large one.

It can be supposed that in Phase 1 the fort was a temporary wartime base garrisoned by a *cohors quingenaria peditata*, perhaps the *cohors V Gallorum*, or detachments of *ala Frontoniana Tungrorum*. After some time—during the Trajanic wars or in their wake—changes were probably made to the fort's garrison resulting in the need for enlargement of the base (Phase 2). We can assume that either the whole unit of *ala Frontoniana Tungrorum* manned the fort alone, or the infantry unit (*cohors V Gallorum*) shared the fort with a cavalry detachment. Sometime later, i.e. before 113–115 CE, the cavalry left Pojejena (CIL XVI 164; CIL XVI 61; RMD II 87; RMD III 152–153, 228; RMD V 345). Then, *cohors V Gallorum*—i.e. a unit requiring much less space—became the sole force inside the fort. After some time, this unit may have been divided into two parts, one of which remained in Pojejena; with time, this part was brought to full strength and renamed *cohors V Gallorum et Pannoniorum* under command of the Moesian legate.

The number of legionary stamps on the building materials dated to the 2nd and 3rd centuries (46 pieces) far exceeds the number of stamps signed by *cohors V Gallorum* (five pieces). The stamps of *legio VII Claudia* are all dated to the 2nd – mid-3rd century and are more numerous (36 pieces) than the bricks and tiles of *legio IIII Flavia* (ten pieces) dated exclusively to the Trajanic–Hadrianic period. They do not prove that detachments of legions were present in Pojejena, but it cannot be ruled out. Hypothetically, it was possible after about 114 CE, when the fort ostensibly became too large for one cohort.

The excavations carried out in the 1970s showed a continuous military presence in Pojejena from the late 1st/early 2nd century until the mid-3rd century (Gudea and Bozu 1979: 184). The results of the survey confirmed this. Apart from a single coin of Constantius II (350–355

CE), the latest coins found in the area of the *horreum* are two pieces minted during the reign of Gallienus (253–268 CE), one of them possibly during his sole rule (260–268 CE). It cannot be determined which unit was present there in the 3rd century.

## CONCLUSIONS

The most important result of our survey is the discovery of the small earth-and-timber fort in Pojejena (Phase 1). Further analysis, based both on interpretations of previous excavators and on our results, led to the conclusion that Phase 2 may have had an intermediate Phase 2a (initial earth-and-timber phase of the large fort), which preceded Phase 2b (large stone fort). They may be dated to the late 1st century or the beginning of the 2nd century (Phase 1), early 2nd century (Phase 2a) and the middle of the 2nd century (Phase 2b).

The new discoveries of the barracks and the two granaries, considered against the backdrop of the size of the fort, yielded new data that may be helpful in determining the fort's garrison. It seems that at least one regular cohort could have been based in the fort in Phase 1, and the strength of the garrison could have doubled after the enlargement of the fort. Moreover, new information about the phases of the fort, collated with the known data about the military units at-

tested in Pojejena, allowed the putting forward of theses about changes in the fort's military crew.

The coins of the late 1st century found in the 1970s, the bricks and roof tiles dated to the Trajanic–Hadrianic period found among the ruins of the granary, the coin of Antoninus Pius unearthed inside the *agger*, as well as the coins issued during the reigns of Severus Alexander, Gordian III, Trebonianus Gallus and Gallienus, discovered among the debris of the *horreum*, all seem to indicate that the base was in constant use by the military until the second half of the 3rd century, probably the 260s CE, so until the Roman retreat from Dacia. Geophysical imagery shows no structures that could be easily associated with the Tetrarchy or later periods. Some Roman military personnel might have been present in the area at some point in the 4th century, but the scarcity of finds suggests a rather short episode during an attempt to reconquer the Dacian riverbank.



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## Abbreviations

- AE *L’Année épigraphique. Revue des publications épigraphiques relatives à l’antiquité romaine*
- CIL *Corpus Inscriptionum Latinarum*
- IDR I Russu, I.I. (1975). *Inscriptiones Daciae Romanae I. Prolegomena historica et epigraphica, diplomata militaria, tabulae ceratae*. Bucarest: Editura Academiei Republicii Socialiste România

IDR III/1	Russu, I.I., Dušanič, M., Gudea, N., and Wollmann, V. (1977). <i>Inscriptiones Daciae Romanae III.1. Dacia Superior. Pars Occidentalis</i> . Bucurest: Editura Academiei Republicii Socialiste România
IDR App. III	Piso, I., Ardeţ, A., and Timoc, C. (2019). <i>Inscriptiones Daciae Romanae, Appendix III. Inscriptiones laterum museorum Banatus Temesiensis</i> . Cluj-Napoca: Editura Mega
IGLR	Popescu, E. (1976). <i>Inscripțiile grecești și latine din secolele IV–XIII descoperite în România</i> . Bucurest: Editura Academiei Republicii Socialiste România
ILD	Petolescu, C.C. (2005). <i>Inscriptii latine din Dacia – Inscriptiones Latinae Daciae</i> . Bucurest: Editura Academiei Române
RMD	Roxan, M.M. and Holder, P.A. (1978–2006). <i>Roman military diplomas I–V</i> . London: University College London Institute of Archaeology

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# Early Byzantine terracotta lamps in the Fethiye Museum (Kbr-T10, Kbr-T26)



**Abstract:** The study examines 18 terracotta lamps housed at the Fethiye Museum and obtained by confiscation or purchase. Nos 9, 11, 12, and 17 were recovered from Esenköy (Fethiye District), while No. 15 was found during excavations at the Telmessos theater. Findspots of the remaining lamps are unknown. Instead of creating new types or groups for this museum assemblage, it was deemed more appropriate to analyze it according to a typology developed in previous comprehensive studies. Hence, lamps dated to the 5th–7th centuries AD were studied according to the Cibyra lamp typology. Nos 1–7 are wheel-made lamps (Kbr-T10), very similar to one another in form. The remaining 11 are mold-made and represent subgroups of type Kbr-T26. Unlike the wheel-made examples, the lamps produced using molds vary in form and decoration. Although the findspots of most of them are unknown, the characteristics of clay and form of specimens in this assemblage suggest that they were produced in the same place or even the same workshop.

**Keywords:** Fethiye Museum, Telmessos, Early Byzantine, lighting tools, terracotta lamps

## INTRODUCTION

The lamp collection in the Fethiye Museum spans from the Archaic period to the Byzantine period and includes some unique examples. In the past, bronze lamps were

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examined by Arzu Metin in a master's thesis (A. Metin 2017), and a group of Roman-period wheel-made lamps was analyzed by the present author (H. Metin 2021).

This study covers 18 Early Byzantine lamps from the exhibition hall and the storeroom of the Fethiye Museum [Figs 1–3]. Most of the lamps were entered in the museum inventory as purchases or confiscated objects. Four were found in Esenköy (Fethiye District) [Figs 2:9, 11, 12; 3:17]. Another lamp [Fig. 3:15] is from the ancient city of Telmessos (present-day Fethiye), where it was discovered during excavations in the theater. It is important to note that a few of the specimens whose findspots are unknown were purchased from Güner Akdeniz, a collector registered with the Fethiye Museum. It is plausible that some artifacts exhibited in local museums were found in the same region. This seems to be the case especially with regard to the examined lamps.

The aim of the present study is to introduce, date, and describe the lamps, as well as to offer a common typology and terminology usable for objects dated to the same period. It is hoped that researchers interested in the subject will

likewise attempt to use existing frameworks, rectifying any deficiencies they might have, instead of devising new typologies or terminologies.

The study of Early Byzantine lamps—their form, workshops and origin—is crucial for examining the material cultural assets of the Byzantine Empire in Anatolia and tracing its interactions with regions outside Asia Minor. Although the findspots of the Fethiye Museum lamps are largely unknown, regional production is discussed below in order to go beyond a simple catalog presentation of the material.

The present author's doctoral thesis concerned lamps excavated at Cibyra in the same region. The typology devised for the Cibyra artifacts, most of which were dated to the Late Roman – Early Byzantine period, has proved useful for this study due to evident formal similarities between the Cibyra assemblage and the museum items (H. Metin 2012; 2021). Therefore, the Early-Byzantine wheel- and mold-made lamps in the Fethiye Museum presented below are categorized and analyzed according to the Cibyra Late Roman – Early Byzantine lamp typology.

## EARLY BYZANTINE TERRACOTTA LAMPS IN THE FETHIYE MUSEUM

### WHEEL-MADE LAMPS

#### Kbr-T10

The group comprises seven wheel-made lamps from the exhibition hall and the storeroom of the Fethiye Museum [Figs 1:1–6; 2:7]. This type of lamp, wide-

spread in the Early Byzantine period, is characterized by a beak-like nozzle and a high, strip-shaped handle. Instead of a discus, it features a wide, high neck, resulting in a fairly large oil hole diameter. All Kbr-T10 lamps from the Fethiye Museum are nearly identical in form. It

should be noted that although examples of Kbr-T10 lamps with two-knotted strip handles have been recorded elsewhere, this variant is unattested in the Fethiye assemblage. Most of the Kbr-T10 lamps in the museum collection (Nos 2–7) are made in a reddish yellow clay.

It has been suggested that the Kbr-T10 lamps were produced from the Late Hellenistic period to the Late Roman period (Bailey 1975: 196, Pls 86–87, Fig. 460). However, during excavations in the odeum in Cibyra they were found in abundance in a layer dating from the 5th–6th centuries AD. As other specimens classified as Kbr-T10 were also produced within this timespan, the group of lamps under study has been dated to the 5th–6th centuries AD (H. Metin 2012).

## MOLD-MADE LAMPS

### Kbr-T26-a1

Only one lamp in the Fethiye Museum was identified as Kbr-T26-a1 [Fig. 2:8]. The triangular nozzle, as well as the tongue motif decoration on both its sides, are characteristic traits of early examples of this type, and over time the frequency of both features decreased (H. Metin 2012). Footprint stamps are also common for this type, especially for early examples. No. 8 is a second-rate molded example of the type. Since the shoulder part is quite worn, its decoration is difficult to discern (vine branch or grape bunch (?)). It is possible that both sides of the nozzle were decorated with tongue motifs, as in the early examples, but definite identification is hindered by the fact that the lamp was produced using a heavily worn mold. Although the depiction

of a peacock is attested in early lamps, the thick wall, sloppy workmanship, and the channel between the discus and the nozzle suggest a later dating. However, a lamp with similar figural decoration was dated to the second half of the 4th century – the 5th century AD (H. Metin 2012: 418–419, K280). It is plausible, therefore, that No. 8 is a poor copy of earlier forms. It can be broadly dated to the 5th–7th century AD.

### Kbr-T26-a2

This type is represented by a single lamp from the Fethiye Museum [Fig. 2:9]. Kbr-T26-a2 lamps feature monograms and vegetal motifs on the discus (H. Metin 2012: 173–174, K293–323) and can be distinguished by a channel between the discus and nozzle. Early examples are decorated with tongue motifs on the nozzles, while later lamps exhibit greater diversity in this respect. Some examples have no clear decoration on the discus, as they came out of worn molds. This is also the case of No. 9. In addition, both the decoration and the base/body details of this lamp attest to its poor quality. However, the fact that it was used indicates that it was produced for the local market.

The triangular nozzle decorated with a double tongue motif and the narrow channel between the discus and the nozzle observed in Kbr-T26-a2 lamps both appear in the second half of the 4th century AD (H. Metin 2012: 173–174, K293–305; Perlzweig 1961: 160, Fig. 2046). These lamps were exported to Athens (Perlzweig 1961: 160), and their local imitations dominated the market in Attica until the end of the 6th century AD (Böttger 2002: 296, Fig. 4711).

The main variants of Kbr-T26-a2 found in Corinth are thought to have been influenced by Attic models (Broneer 1930: 241, Fig. 1059). From the information available it seems that lamps of this type were produced over a long period. The lamp from the Fethiye Museum may be a late example of this group. Therefore, it is possible to date the lamp broadly to the 5th–7th centuries AD. A lamp recovered from Sagalassos is also dated to a similar period (Roovers 1993: 155, Fig. 114b).

### Kbr-T26-a5

The only lamp identified as T26-a5 [Fig. 2:10] was purchased from Güner Akdeniz, a collector registered with the Fethiye Museum. In general, this type comprises lamps with palmette handles or handles decorated with vegetal motifs. A vast majority of examples feature a channel between the discus and nozzle.

Ephesus, Sardis (Bailey 1988: Pl. 114, Q3202–3219), Miletus (Barın 1995: 12–13, Pls 4–5), and Cibyra (H. Metin 2012: K409–427) are among the ancient cities identified as production centers of this type. As a matter of fact, the production of lamps with palmette handles in Cibyra dates from a very early period, around the late 1st – 2nd century AD (H. Metin 2012: 121–122, K92–95). In addition, the find of a T26-a5 mold on the site is also relevant in this context (H. Metin 2012: Ka4), though such molds were attested in almost every city in Western Anatolia that functioned as a settlement in the Early Byzantine period. For instance, in Ephesus, a lamp manufacturing center of the Early Byzantine period, intensive production of this type was attested (Bailey 1988).

There is no consensus concerning the dating of the T26-a5 lamps. While discussing the Yassı Island finds, Bass and van Doorninck noted that similarly shaped lamps found in a shipwreck from the 4th century AD may have in fact originated from another shipwreck dating to the 7th century AD. They also stated that lamps of this type occurred in a form almost unchanged from the end of the 4th century AD to the middle of the 7th century AD (Bass and van Doorninck 1971: 36–37). No. 10 may be dated to the second half of the 6th century AD – first half of the 7th century AD.

### Kbr-T26-a6

Three lamps of this type were identified in the museum's collection [Figs 2:11–12; 3:13]. Nos 11 and 12 were found in Esenköy (Fethiye District), while the find-spot of the third lamp is unknown. This lamp type is characterized by a narrow, undecorated discus and a pear-shaped body. A decorative motif in the form of grape vines on their broad shoulders is prevalent, though lamps decorated with embossed dots, like No. 13, have also been attested. Certain features of this type are similar as in T26-a3 group 3 lamps, though the latter type is smaller and not pear-shaped. Footprint stamps on the bases, rare in T26-a3 group 3, are absent in T26-a6. The Kbr-T26-a6 lamps were dated to the 6th–7th centuries AD.

### Kbr-T26-b1

There are three Kbr-T26-b1 lamps in the Fethiye Museum [Fig. 3:14–16], and they represent the highest-quality subgroup of T26. Their discuses are decorated with animal figures as well as mythological

creatures. The characteristic features of the form include a short, straight nozzle, a wide discus, notches on the handle and under the nozzle, and a ring base. Many of the lamps have a footprint stamp on the bottom. In general, their length varies between 8 and 10 cm, and their width ranges from 6 to 7 cm.

Lamp No. 14 is decorated with a pig figure, which is not common for this type, but the motif was widely used on lamp discuses of the 1st century AD. Conversely, the most common decoration type of T26-b1 group 1 is represented by grape bunches with vine branches on the lamp's shoulder. Decoration notwithstanding, this particular lamp is a good example of the Kbr-T26-b1 type with its footprint stamp, notches under the handle and nozzle, short nozzle, and ring base.

Lamps Nos 15 and 16 both feature depictions of Eros on the discuses. No. 15 was unearthed at the Telmessos theater, probably in a fill layer. The figure of Eros on No. 15 is depicted as holding a grape basket with both hands, though the details are not clear due to erosion. In the case of No. 16, Eros is shown fishing with his left hand. It should be noted that the depiction of Eros is one of the most prevalent figural decorations among T26 lamps and it occupies an important place in the typology of lamps in Cibyra (H. Metin 2012: K457–466). Similar forms were also found at Ephesus (Bailey 1988: Pl. 105, Fig. 3108; Evren 1996: 31–32). The fact that similar examples were found outside of Anatolia attests to the popularity of such lamps in the Early Byzantine period (Bovon 1966: Fig. 458; Perlzweig 1961: 193, Fig. 2381; Garnett 1975: Fig. 32; Katsioti 2018; Bournias 2014: Fig. 16).

### Kbr-T26-b2

There is no difference between this type of lamps [Fig. 3:17] and the above-mentioned T26-b1 examples in terms of form. Nearly all specimens have notches between the handle and the nozzle. The difference between the two types lies in their discus decorations. While T26-b1 is decorated with mythological and animal figures, the discus in T26-b2 is decorated with plant ornaments and monograms.

No. 17 was found in Esenköy (Fethiye District). Like other examples of this type, it has a reddish yellow paste and is dated to the 6th century AD. A nine-petal rosette bordered by two intertwined triangles encircles the oil hole located in the middle of the concave discus. This arrangement of triangles is very similar to the Star of David, which occupies an important place in Jewish beliefs.

### Kbr-T26-b3 group 3

The T26-b3 type constitutes one of the most numerous subsets of Kbr-T26. For this reason, it was further subdivided into three groups: those with a ringed discus (group 1), those with a wide discus (group 2), and those with a narrow discus (group 3) [Fig. 3:18]. Lamp No. 18 is a perfect example of this last group. Such lamps are characterized by an oval form and a narrow discus. Although the decoration of their broad shoulders may vary, the most common motif is that of a grape bunch with vine branches, as seen in No. 18. The diameters of the lamps are smaller than those of the other subgroups of T26, but they are very similar to those of T26-a3 group 3. The most significant difference between these two types, which are otherwise very similar



in terms of decoration and form, is the transition between the discus and the nozzle. These poorly executed lamps are a result of mass production. Therefore, they must have been produced in many cities in Anatolia, such as Cibyra. Such

lamp forms have also been excavated in Ephesus (Bailey 1988), Miletus (Barın 1995: 49, Fig. 38c–d), Sardis (Hanfmann and Waldbaum 1975: 147, Fig. 403), and Aphrodisias (Smith and Ratté 2000: 234, Fig. 14).

## CONCLUSION

The lamp repertoire at the Fethiye Museum is quite diverse. Finds from this category, acquired through excavation or purchase, date from the Archaic period to the Early Byzantine period. In this study, a group of Early Byzantine lamps was examined, described and dated according to the typology developed for lamps recovered from Cibyra (Göhlhisar District, Burdur Province), a settlement located close to the Fethiye Museum.

Seven of the lamps were made on a potter's wheel (Nos 1–7), and 11 were formed in molds (Nos 8–18). The wheel-made Kbr-T10 lamps are surprisingly uniform, whereas the mold-made ones show a greater variety of forms. This is typical of mold production, because a large number of decorative types can be produced using four or five different mold models. In the Fethiye Museum, more than half of the lamps produced using Early Byzantine molds are decorated (Nos 8, 9, 14–17). It should be stressed, however, that the

majority of the lamps from this period have no discus decoration. A similar situation was observed among the Cibyra lamp types. Apart from these observations, the lamps in the Fethiye Museum do not have any striking features. The analyzed specimens were dated to the 5th–7th centuries AD.

Nos 9, 11, 12 and 17 were recovered from Esenköy (Fethiye District), while No. 15 was found in the Telmessos theater. The findspots of the other lamps are unknown. Nonetheless, their clay characteristics and forms suggest that they were produced in the same or similar workshops. Of sites in the region, Oinoanda and Balboursa are affiliated to the Fethiye Museum, while Boubon and Cibyra are affiliated to the Burdur Museum. However, given the fact that these cities lie in the same geographical area and share the same cultural networks, it is not surprising that contemporary artifacts exhibited in both museums display close similarities.

## CATALOG

### 1. KBR-T10 [FIG. 1:1]

*Location:* Unknown

*F. M. Inv. No.:* 1.16.66-843

*Clay:* 2.5 YR 5/1 Gray

*Glaze:* 5 YR 4/2 Dark Reddish Gray

*Dimensions:* length: 7.5 cm; width: 5.3 cm; height: 3.4 cm; diameter of mouth: 2.4 cm

*Description:* Nozzle tip broken and missing. Hard-fired clay with scarce mica, lime, and sand temper. Wheel-made, flat

disc body. High neck and wide oil hole. Strip handle. Oval nozzle on the shoulder. Round, flat base.

*Date:* 5th–6th century AD

## 2. KBR-T10 [Fig. 1:2]

*Location:* Unknown

*F. M. Inv. No.:* 5.90.72-869

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* 5 YR 4/4 Reddish Brown

*Dimensions:* length: 9.2 cm; width: 5.5 cm; height: 3.7 cm; diameter of mouth: 2.1 cm

*Description:* Hard-fired clay with scarce mica, lime, and sand temper. Wheel-made, flat disc body. High neck and wide oil hole. Strip handle. Oval nozzle on the shoulder. Round, flat base. Burn marks in the wick hole.

*Date:* 5th–6th century AD

## 3. Kbr-T10 [Fig. 1:3]

*Location:* Unknown

*F. M. Inv. No.:* E.3975

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 8.9 cm; width: 5.5 cm; height: 4.0 cm; diameter of mouth: 2.7 cm

*Description:* Moderately hard-fired clay with scarce mica, lime, and sand temper. Wheel-made, flat disc body. High neck and wide oil hole. Strip handle. Oval nozzle on the shoulder. Round, flat base. Burn marks in the wick hole.

*Date:* 5th–6th century AD

## 4. Kbr-T10 [Fig. 1:4]

*Location:* Unknown

*F. M. Inv. No.:* E.4392

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 8.5 cm; width: 5.9 cm; height: 3.9 cm; diameter of mouth: 2.5 cm

*Description:* Nozzle broken and missing. Moderately hard-fired clay with scarce mica, lime, and sand temper. Wheel-made, flat disc body. High neck and oil hole. Strip handle. Oval nozzle on the shoulder. Round, flat base.

*Date:* 5th–6th century AD

## 5. Kbr-T10 [Fig. 1:5]

*Location:* Unknown

*F. M. Inv. No.:* E.4537

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 9.5 cm; width: 6.0 cm; height: 4.1 cm; diameter of mouth: 2.8 cm

*Description:* Moderately hard-fired clay, scarce mica, lime, and sand temper. Wheel-made, flat disc body. High neck and wide oil hole. Strip handle. Oval nozzle on the shoulder. Round, flat base. Burn marks in the wick hole.

*Date:* 5th–6th century AD

## 6. Kbr-T10 [Fig. 1:6]

*Location:* Unknown

*F. M. Inv. No.:* E.4495

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 8.4 cm; width: 5.8 cm; height: 3.4 cm; diameter of mouth: 2.2 cm

*Description:* Handle broken and missing. Hard-fired clay with scarce mica, lime, and sand temper. Wheel-made, flat disc body. High neck and wide oil hole (broken). Oval nozzle on the shoulder. Round, flat base. Burn marks in the wick hole.

*Date:* 5th–6th century AD

## 7. Kbr-T10 [Fig. 2:7]

*Location:* Unknown

*F. M. Inv. No.:* E.4538

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 8.7 cm; width: 6.1 cm; height: 3.9 cm; diameter of mouth: 2.8 cm

*Description:* Handle broken and missing. Hard-fired clay with scarce mica, lime,

and sand temper. Wheel-made, flat disc body. High neck and wide oil hole (broken). Oval nozzle on the shoulder. Round, flat base. Burn marks in the wick hole.

*Date:* 5th–6th century AD



Fig. 1. Wheel-made lamps from the Fethiye Museum: 1–6 – Kbr-T10 (Photos H. Metin)

**8. Kbr-T26-a1 [Fig. 2:8]**

*Location:* Unknown

*F. M. Inv. No.:* E.4540

*Clay:* 5 YR 6/6 Reddish Yellow

*Glaze:* 7.5 YR 4/2 Brown

*Dimensions:* length: 8.1 cm; width: 5.0 cm; height: 2.1 cm; diameter of discus: 3.5 cm

*Description:* Hard-fired clay with much mica, lime, and sand temper. Mold-made, oval body, flattened reservoir. Concave discus within a circular border, figured decoration (peacock) between two oil holes. Narrow, long channel between the discus and the nozzle. Handle on the shoulder amid worn decoration of vine branches and leaves (?). Dual tongue motifs (?) on the nozzle. Flat bottom.

*Date:* 5th–7th century AD

**9. Kbr-T26-a2 [Fig. 2:9]**

*Location:* Esenköy (Fethiye)

*F. M. Inv. No.:* 2.2.71-716

*Clay:* 7.5 YR 7/6 Reddish Yellow

*Glaze:* 2.5 YR 5/8 Red

*Dimensions:* length: 9.6 cm; width: 6.6 cm; height: 2.8 cm; diameter of discus: 4.0 cm

*Description:* Hard-fired clay with much mica, lime, and sand temper. Mold-made, circular body, flattened reservoir. Concave discus within a circular border. Floral rosette around the oil hole. Narrow, long channel between the discus and the nozzle. Handle on the shoulder amid vine branches and leaves (?) decoration. Dual tongue motifs (?) on the nozzle. Ring base. Burn marks in the wick hole.

*Date:* 5th–7th century AD

**10. Kbr-T26-a5 [Fig. 2:10]**

*Location:* Unknown

*F. M. Inv. No.:* E.4314

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 7.3 cm; width: 5.1 cm; height: 2.0 cm; diameter of discus: 3.7 cm

*Description:* Moderately hard-fired clay with much mica, lime, and sand temper. Mold-made, circular body, flattened reservoir. Concave discus, oil hole in the middle. Wide, long channel between the discus and the nozzle. Triangular leaf handle. A row of sparsely spaced concentric circles in relief on the shoulder. Short nozzle. Ring-based, notches under the handle and the nozzle.

*Date:* Second half of the 6th century AD – first half of the 7th century AD

**11. Kbr-T26-a6 [Fig. 2:11]**

*Location:* Esenköy (Fethiye)

*F. M. Inv. No.:* 2.2.71-720

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* 7.5 YR 4/2 Brown

*Dimensions:* length: 9.6 cm; width: 6.6 cm; height: 2.8 cm; diameter of discus: 4.0 cm

*Description:* Moderately hard-fired clay with much mica, lime, and sand temper. Handle broken and missing. Mold-made, pear-shaped body, flattened reservoir. Concave discus within a circular border. Oil hole in the middle, a relief ring around it. Narrow, long channel between the discus and the nozzle. Vine branches and leaves decoration on the shoulder. Short, triangular nozzle. Ring base. Notches under the nozzle. Burn marks in the wick hole.

*Date:* 6th–7th century AD

**12. Kbr-T26-a6 [Fig. 2:12]**

*Location:* Esenköy (Fethiye)

*F. M. Inv. No.:* 5.2.71-718

*Clay:* 5 YR 6/6 Reddish Yellow

*Glaze:* —

*Dimensions:* length: 9 cm; width: 5.8 cm;

height: 3 cm; diameter of discus: 2.8 cm  
**Description:** Moderately hard-fired clay with scarce mica, lime, and sand temper. Mold-made, pear-shaped body, flattened reservoir. Concave discus within a circular border. Oil hole in the middle, a relief ring

around it. Narrow, long channel between the discus and the nozzle. Vine branches and leaves decoration on the shoulder. Long nozzle. Ring base. Notches under the nozzle. Burn marks in the wick hole.  
**Date:** 6th–7th century AD



Fig. 2. Lamps from the Fethiye Museum: wheel-made specimen 7 – Kbr-T10; mold-made specimens 8 – Kbr-T26-a1; 9 – Kbr-T26-a2; 10 – Kbr-T26-a5; 11–12 – Kbr-T26-a6 (Photos H. Metin)

**13. Kbr-T26-a6 [Fig. 3:13]**

*Location:* Unknown

*F. M. Inv. No.:* E.4541

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* 2.5 YR 5/6 Red

*Dimensions:* length: 9.7 cm; width: 5.4 cm; height: 2.9 cm; diameter of discus: 3.6 cm

*Description:* Hard-fired clay with much mica, lime, and sand temper. Mold-made, circular body, flattened reservoir. Concave discus within a drop-shaped border, oil hole in the middle. Narrow, long channel between the discus and the nozzle. Double row of embossed dots on the shoulder. Long nozzle. Oval, flat base.

*Date:* 6th–7th century AD

**14. Kbr-T26-b1 group 1 [Fig. 3:14]**

*Location:* Unknown

*F. M. Inv. No.:* 64.7.76-1277

*Clay:* 5 YR 6/6 Reddish Yellow

*Glaze:* 5 YR 5/4 Reddish Brown

*Dimensions:* length: 8.9 cm; width: 6.2 cm; height: 2.7 cm; diameter of discus: 4.0 cm

*Description:* Hard-fired clay with scarce mica, lime, and sand temper. Mold-made, oval body, flattened reservoir. Concave discus within a circular border, figured decoration (pig?) between two oil holes. Handle and vine branches and leaves decoration on the shoulder. Bunch of grapes on the short, straight nozzle. Ring base, footprint stamp in the middle. Notches under the nozzle.

*Date:* 6th century AD

**15. Kbr-T26-b1 group 1 [Fig. 3:15]**

*Location:* Telmessos Theater

*F. M. Inv. No.:* E.2888

*Clay:* 7.5 YR 6/6 Reddish Yellow

*Glaze:* 2.5 YR 5/6 Red

*Dimensions:* length: 9.2 cm; width: 6.1 cm;

height: 2.5 cm; diameter of discus: 4.3 cm

*Description:* Hard-fired clay with scarce mica, lime, and sand temper. Mold-made, oval body, flattened reservoir. Concave discus within a circular border, figured decoration (Eros), oil holes on two sides. Handle and vine branches and leaves on the shoulder. Bunch of grapes on the short, straight nozzle. Ring base, footprint stamp in the middle. Notches under the nozzle. Burn marks in the wick hole.

*Date:* 6th century AD

**16. Kbr-T26-b1 group 1 [Fig. 3:16]**

*Location:* Unknown

*F. M. Inv. No.:* E.4548

*Clay:* 7.5 YR 6/4 Light Brown

*Glaze:* 2.5 YR 5/6 Red

*Dimensions:* length: 9.3 cm; width: 6.5 cm; height: 2.8 cm; diameter of discus: 4.3 cm

*Description:* Hard-fired clay with scarce mica, lime, and sand temper. Mold-made, oval body, flattened reservoir. Concave discus within a circular border, figured decoration (Eros holding a fish). Handle on the shoulder amid vegetal decoration. Short, straight nozzle. Ring base, footprint stamp in the middle. Notches under the nozzle. Burn marks in the wick hole.

*Date:* 6th century AD

**17. Kbr-T26-b2 [Fig. 3:17]**

*Location:* Esenköy (Fethiye)

*F. M. Inv. No.:* 2.2.71-715

*Clay:* 5 YR 6/8 Reddish Yellow

*Glaze:* 5 YR 5/6 Red

*Dimensions:* length: 10.1 cm; width: 7.0 cm; height: 2.9 cm; diameter of discus: 4.7 cm

*Description:* Hard-fired clay with scarce mica, lime, and sand temper. Mold-made, circular body, flattened reservoir.



Concave discus within a circular border. Nine-petal (?) rosette around the oil hole in the middle, a star formed by intertwined triangles (Star of David). Narrow, long channel between the discus and the

nozzle. Handle and dots in relief on the shoulder. Long nozzle with double tongue motifs. Ring base. Notches under the nozzle. Burn marks in the wick hole.

*Date:* 6th century AD



Fig. 3. Mold-made lamps from the Fethiye Museum: 13 – Kbr-T26-a6; 14-16 – Kbr-T26-b1; 17 – Kbr-T26-b2; 18 – Kbr-T26-b3 group 3 (Photos H. Metin)

**18. Kbr-T26-b3 group 3 [Fig. 3:18]**

*Location:* Unknown

*F. M. Inv. No.:* E.4539

*Clay:* 5 YR 6/6 Reddish Yellow

*Glaze:* 7.5 YR 4/2 Brown

*Dimensions:* length: 7.5 cm; width: 5.0 cm; height: 2.2 cm; diameter of discus: 2.4 cm

*Description:* Moderately hard-fired clay

with much mica, lime, and sand temper. Mold-made, oval body, flattened reservoir. Concave discus within a circular border. Handle and vine branches and leaves decoration on the shoulder. Short nozzle. Ring base. Notches under the handle and nozzle.

*Date:* 6th century AD

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# Hellenistic tableware from Well S.50 in the Agora of Nea Paphos (Cyprus)



**Abstract:** The paper presents tableware (TW) from a Hellenistic deposit found in Well S.50 located in the Agora of Nea Paphos, a city situated on the southwest coast of Cyprus. Based on TW pottery, this closed deposit is dated from approximately the mid-2nd century to 30 BC. The data obtained permitted to observe a three-stage process of backfilling the well in the Hellenistic period. In the second phase, it probably served as a burial place, as human remains intentionally deposited in the well may attest. The TW pottery was examined using a macroscopic method based on fabric characteristics and typology. The assemblage was divided into groups according to function, ware, and macroscopic characteristics. In addition, statistical analysis was applied to calculate the Minimum Number of Vessels (MNV) and the Estimated Vessel Equivalent (EVE), and the CReA-Patrimoine web application was used for estimating the capacity of selected vessels. The results suggest a dominant role of local Color-coated Ware (CCW) produced in the Paphos region. The recurrence of forms, the quantitative share of specific shapes within functional categories, and the capacity measurements form a basis for preliminary observations concerning the eating and drinking habits in the Hellenistic city.

**Keywords:** Agora of Nea Paphos, Hellenistic period, tableware pottery, closed well deposit, macroscopic analysis of fabric, pottery function, vessel capacity, eating and drinking habits

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The Paphos Agora Project (PAP) has been conducted since 2011 by the Jagiellonian University in Kraków, Poland, under the auspices of the Department of Antiquities of Cyprus. The expedition, initiated and directed by Professor Ewdoksia Papuci-Władyka, focuses on the discovery and exploration of the cultural heritage of Paphos and the introduction and use of modern research methods in archaeology.

I am grateful to Prof. Ewdoksia Papuci-Władyka for the opportunity to study the tableware pottery found in Well S.50 in the Agora. This research was conducted in 2016–2019 as part of my master's thesis, under a National Science Centre Grant 2014/14/A/HS3/00283 (MAESTRO 6, Principal Investigator Prof. Ewdoksia Papuci-Władyka).

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## INTRODUCTION

The 2016 campaign of the Jagiellonian University expedition, conducted within the framework of the Paphos Agora Project (PAP), included the excavation of a Hellenistic well.<sup>1</sup> This structure, labeled with number 50 (S.50), contained a significant quantity of movable finds forming a deposit that has not been analyzed in detail thus far.

This paper focuses on tableware (TW), which accounts for 53% of all pottery fragments found in Well S.50. It begins with a brief presentation of the archaeological context followed by a broader discussion of the methodology applied in the study of the TW pottery. The detailed analysis

of the pottery centers on the typology and fabrics, which have allowed division of the assemblage into six groups related to technological features of the vessels, and into 14 macroscopic groups (MGs) based on fabric characteristics. In addition, four groups have been distinguished based on the vessels' functions. Lastly, the Minimum Number of Vessels (MNV) in the assemblage and the Estimated Vessel Equivalent (EVE) have been calculated, along with the capacities of selected specimens. The results have been discussed in the context of eating habits<sup>2</sup> and supplemented with a preliminary interpretation of the entire deposit.

## ARCHAEOLOGICAL CONTEXT: WELL S.50

Well S.50 is located in the southeastern part of Trench I, in the central part of the Agora of Nea Paphos [Fig. 1]. The relationship of S.50 to other structures uncovered within the Agora is currently impossible to determine beyond the fact that it was later than Building A.<sup>3</sup> The well was carved in bedrock to a depth of 0.52 m above sea level. It is thought to have initially served as a source of

drinking water (cf. Michalik 2019). After falling out of use around the mid-1st century BC, the well was backfilled in three phases, the most significant being the middle phase, when human remains were deposited inside (Niziołek 2019: 93; cf. Misk 2020: 137; 2021: 217–218). The resulting closed deposit<sup>4</sup> included a variety of materials with a dating span from approximately the mid-2nd century to

1 For more information, see <https://paphos-agora.archeo.uj.edu.pl/>. For the chronology, see Papuci-Władyka 2020: 80, Table 1; Marzec and Kajzer 2020: 238, Table 1: phases 3 and 4.

2 The issue of what should be considered “food” is very complex, but for the purposes of this article “food”, “foodways” and “eating” refer to solid food and beverages as an integral part of the meal. For more about definitional issues in the archaeology of food, see Twiss 2015: 92–98.

3 The issues of the chronology and function of Building A remain open (for more information, see Misk 2020; Rosińska-Balik 2020).

4 The term “closed deposit” refers to all three stages of backfilling the well and is used to designate a group of vessels and their fragments deposited on purpose or accidentally, simultaneously or gradually over a limited period (cf. Papuci-Władyka 1995: 25 after Drougou, Touratoglou 1994: 128–129).

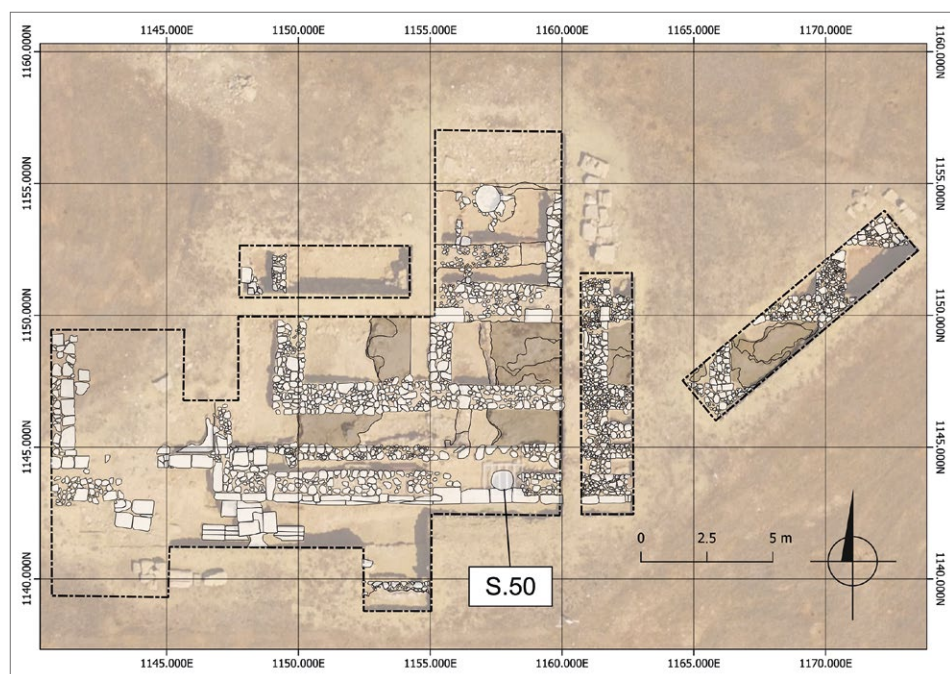


Fig. 1. Location of Well S.50 within Trench I. The well was dug into the inner face of the southern wall of Building A (Paphos Agora Project | orthophoto W. Ostrowski; processing M. Michalik)

30 BC. The chronology is mainly based on pottery, in particular on the TW. Apart from this category, the pottery assemblage included kitchenware, amphorae, plain wares, storage vessels, and lamps. In addition, the deposit contained other

objects, i.e. ceramic building materials, plaster fragments, coins, other metal items, glass objects, and animal bones. The presence of human remains inside Well S.50 is unusual<sup>5</sup> and is discussed in detail below (see Discussion).

## METHODOLOGY

The TW pottery was examined using a macroscopic method consisting of several steps. The first step focused on technological features, permitting division of the pottery into groups, e.g. Color-coated Ware (CCW) or Eastern Sigillata. This classification was based on publications devoted to Hellenistic ta-

bleware (cf. Hayes 1991; Papuci-Władyka 1995; Marzec and Kajzer 2020). Secondly, the MGs were distinguished through fabric examination (cf. Marzec, Kajzer, and Noćniak 2020). The observations were carried out in natural light, using the naked eye and a handheld magnifying glass (10x). The characterization of MGs

<sup>5</sup> In the area of ancient Nea Paphos, finds of human remains outside the necropolis are rare. One other example related to an earthquake is known from the residential area of Maloutena (Daszewski 1993: 88–89).

was based on macroscopic descriptions published by Marzec and Kajzer (2020) in a work devoted to investigations in the Agora of Nea Paphos. When possible, specific groups were associated with a probable provenance on the basis of macroscopic descriptions of fabrics in published typological studies. Following assignment to the above groups, the vessels were categorized according to shape and function. The functional classification adopted was principally the one applied in the Athenian Agora by S.I. Rotroff (1997). The main classes included vessels for food service, drinking cups, vessels for wine service, and vessels for pouring other liquids. Particular shapes were distinguished relying on Rotroff's typology (1997) and publications from the excavations at Nea Paphos (Hayes 1991; Papuci-Władyka 1995; Marzec 2018) [see below, *Table 2*].

In addition, quantitative methods were applied to assess the number of vessels present in the well (Orton and Hughes 2013: 203–218; Banning 2020: 105–128). Although fraught with a number of limitations, e.g. differential preservation, vessels' lifespans, etc. (see, e.g., Orton and Hughes 2013; Banning 2020), quantification remains critical for the assessment of the frequency of occurrence of particular shapes, fabrics, etc. However, in order to obtain meaningful results, one must carefully choose the quantitative method best suited to the particular research problem (Banning 2020: 106). One of the ways to estimate the number of whole specimens in the assemblage is to calculate the Minimum Number of Vessels (MNV), which involves counting the most frequently

occurring parts of vessels, usually the rims. In order to establish the MNV, it is necessary to calculate the proportions of the rim circumference for all rim sherds, taking into consideration the vessel diameters measured using a rim chart, and to add them, rounding up fractional values (Banning 2020: 109–110). However, if one wishes to establish the proportions of different shapes in the assemblage, the Estimated Vessel Equivalent (EVE) seems better suited, since the proportions based on minimum numbers are biased and sensitive to the sample size and aggregation (Banning 2020: 110, 116). The initial steps are identical to those in the MNV, except that the EVE does not require rounding up fractional values (Banning 2020: 116). The main difference between the MNV and the EVE is, therefore, that in the first method calculations are based on whole vessels, and in the second on their fractions. The paper presents results calculated using both methods; however, the final calculations are based on the EVE.

Finally, keeping in mind that capacity is crucial to the determination of vessel use and function, the maximum and optimum capacities of selected specimens from the assemblage have been calculated. For this purpose, CReA-Patrimoine, an online tool requiring scale drawings of pottery, was used (see Engels et al. 2009). The maximum capacity was measured from the bottom to the top of the rim, and the optimum capacity from the bottom to a level considered as optimal to keep the content of the vessel from spilling. The calculated results are presented and discussed below (see Results: Capacity and *Table 5* below).

RESULTS

PRODUCTION TECHNOLOGY AND MACROSCOPIC GROUPS

The initial stage of macroscopic analysis led to a division of the pottery into smaller groups reflecting the technology of vessel manufacture, i.e. Black Gloss Ware (BG), Color-coated Ware (CCW), Red Slip (RS), and Eastern Sigillata (ESA and ESD).<sup>6</sup> Subsequently, 14 MGs were recognized within these categories. Most of these groups correspond to Hellenistic Tableware MGs (HTW MGs) distinguished by Marzec and Kajzer (2020). The wares and MGs are presented in *Table 1* together with the proposed provenance, EVE, and MNV.

SHAPE AND FUNCTION ANALYSIS

Following assignment to technological and macroscopic groups, the vessels were classified according to shape and function. The classification applied at the

Athenian Agora by S.I. Rotroff (1997) was first adopted to divide the assemblage into basic functional categories: vessels for food service, drinking cups, vessels for wine service, and vessels for pouring other liquids. According to Rotroff (1997), such a classification may provide indications of the pottery users’ diet and eating habits. Within these categories, 28 vessel forms were identified, the most numerous being rolled rim plates and incurved rim bowls. All the shapes are described below and shown in *Table 2*.

Vessels for food service

The large group of vessels for food service included various plates, CCW outturned rim bowls, and a large ESA bowl form 5. Arguably, the most common shape of Hellenistic TW, especially within the CCW category, is the plate. Based on the

Table 1. Pottery categories according to manufacturing technique, proposed provenance, MNV, and EVE. N/A (=not applicable) indicates that the identified MG finds no parallels in Marzec and Kajzer 2020, and/or no provenance has been suggested

Ware	MG in Marzec and Kajzer 2020 (HTW MG)	Proposed provenance	MNV	MNV [%]	EVE	EVE [%]
BG	N/A	N/A	1	0.8	0.02	0
CCW	9	Paphos	61	50.4	33.54	75.4
CCW	10	Cyprus	7	5.8	0.83	1.9
CCW	11	N/A	3	2.5	0.66	1.5
CCW	12	Levant	6	5.0	0.3	0.7
CCW	13	Rhodes	5	4.1	1.26	2.8
CCW	14	Knidos	2	1.7	0.02	0
CCW	7	Egypt	1	0.8	0.01	0
CCW	16	Ephesos	4	3.3	0.41	0.9
ESA/RS	N/A	Levant?	1	0.8	0.01	0
RS	N/A	Cyprus?	2	1.7	0.19	0.4
ESA	18	N. Levant	16	13.2	4.61	10.4
ESD	19	Cyprus	1	0.8	0.01	0





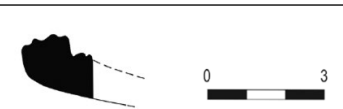



6 The terms ESA and ESD, widely used in publications, follow K.M. Kenyon (1957) and R. Rosenthal (1978); compare Marzec and Kajzer 2020.


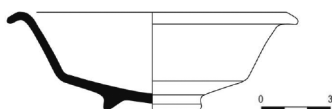

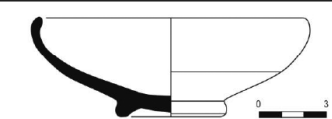
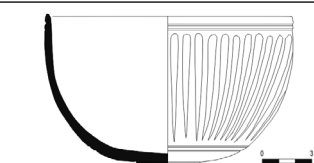




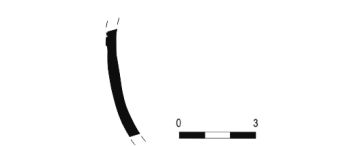

form of the rim, several variants of the shape may be distinguished: rolled, flaring or outturned, thickened, projecting, and rilled. The most popular variant appears to be the plate with a rolled rim, produced in the Paphos region [Fig. 2:a]. The shape, common during the Hellenistic period and even later, was particularly popular in the 2nd and 1st centuries BC (Papuci-Władyka 1995: 50). Classic fishplates, a trademark of the Hellenistic period (cf. Papuci-Władyka 1995: 48), were not found in the assemblage from the well. Instead, the set contained locally produced vessels with slightly concave

bottom centers, which seem to represent a degenerate variant of this form.


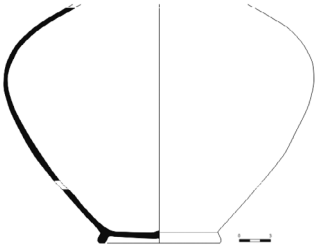
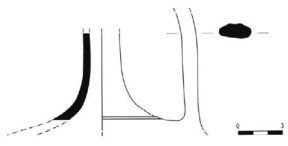
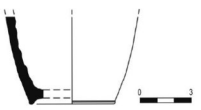
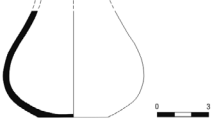
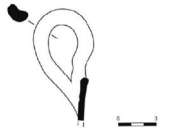


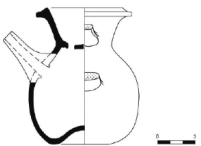
In addition, ESA plate forms 2, 4, and 6 were recorded. Plate or platter form 2 has an inturned rim and a projecting ring foot. Its dating spans from around the 2nd century BC until the mid-1st century BC (Hayes 1985; 2008). Plate form 4, usually quite large in diameter (14–29 cm), has a slightly incurved rim and a wide ring foot. The thickness of the walls increases towards the bottom of the vessel. The plate is characterized by decoration in the form of grooves and wheel bands on the bottom, as well as stamped deco-

Table 2. Functional categories, shapes, wares and MGs of vessels documented in Well S.50

Function	Shape (form/type)	Ware	MG(s)	Drawing	Photo
food service	plate (rolled rim)	CCW	9, 10, 12, 16		Fig. 2:a
	plate (flaring/ outturned rim)	CCW	9, 12		N/A
	plate (thickened rim)	CCW	9		N/A
	plate (projecting rim)	CCW	12		N/A
	plate (rilled rim)	CCW	7		N/A
	degenerate fishplate	CCW	9		N/A
	plate (form 2)	ESA	18		N/A
	plate (form 4)	ESA	18		N/A

Function	Shape (form/type)	Ware	MG(s)	Drawing	Photo
food service	plate (form 6)	ESA	18		N/A
	bowl (outturned rim)	CCW	9		<i>Fig. 2:b</i>
	bowl with flaring wall (form 5)	ESA	18		<i>Fig. 2:c</i>
drinking cup?	bowl (incurved rim/echinus bowl)	CCW	9, 10, 11		<i>Fig. 3</i>
	bowl (incurved rim/echinus bowl; form P 17?)	ESD	19	N/A	<i>Fig. 4:a</i>
	hemispherical bowl/cup	CCW	9		N/A
		RS	N/A		N/A
	hemispherical bowl/cup (mold-made relief bowl)	CCW	16		<i>Fig. 4:b</i>
drinking cup	"Palestinian bowl/cup"	CCW	13		<i>Fig. 5:a</i>
	parabolic cup (form 18)	ESA	18		N/A
	form 19	ESA	18		N/A
	hemispherical footed cup/bowl (form 22)	ESA	18		N/A



Function	Shape (form/type)	Ware	MG(s)	Drawing	Photo
drinking cup	footed bell-shaped cup (form 23)	ESA	18		<i>Fig. 5:b</i>
	jug	CCW	9, 7		N/A
wine service	lagynos	RS	N/A		<i>Fig. 6:a</i>
		ESA/RS	N/A	N/A	N/A
	olpe	CCW	9		N/A
	juglet	CCW	12, 14		N/A
	kyathos	CCW	14		<i>Fig. 6:d</i>
pouring other liquids	krater	BG	N/A		<i>Fig. 6:b</i>
		CCW	10		N/A
	strainer jug	CCW	13		<i>Fig. 7</i>

ration in the form of palmettes, usually three to five, sometimes together with a small rosette in the center. ESA plate form 4, together with the very similar form 3 (not recorded within the deposit),<sup>7</sup> are the most popular shapes among plates throughout the Eastern Mediterranean, with a date span from around the late 2nd to the last decade of the 1st century BC (Hayes 1985: 15–16; 2008: 23–24).

The large plate form 6 is characterized by an offset rim, slightly molded and grooved on top. The decoration of the bottom is very similar to form 4, mentioned above. This form, which was among the most popular during the first half of the 1st century BC, occurred from the late 2nd century BC until about 50 BC (Hayes 1985: 17–18; 2008: 25).

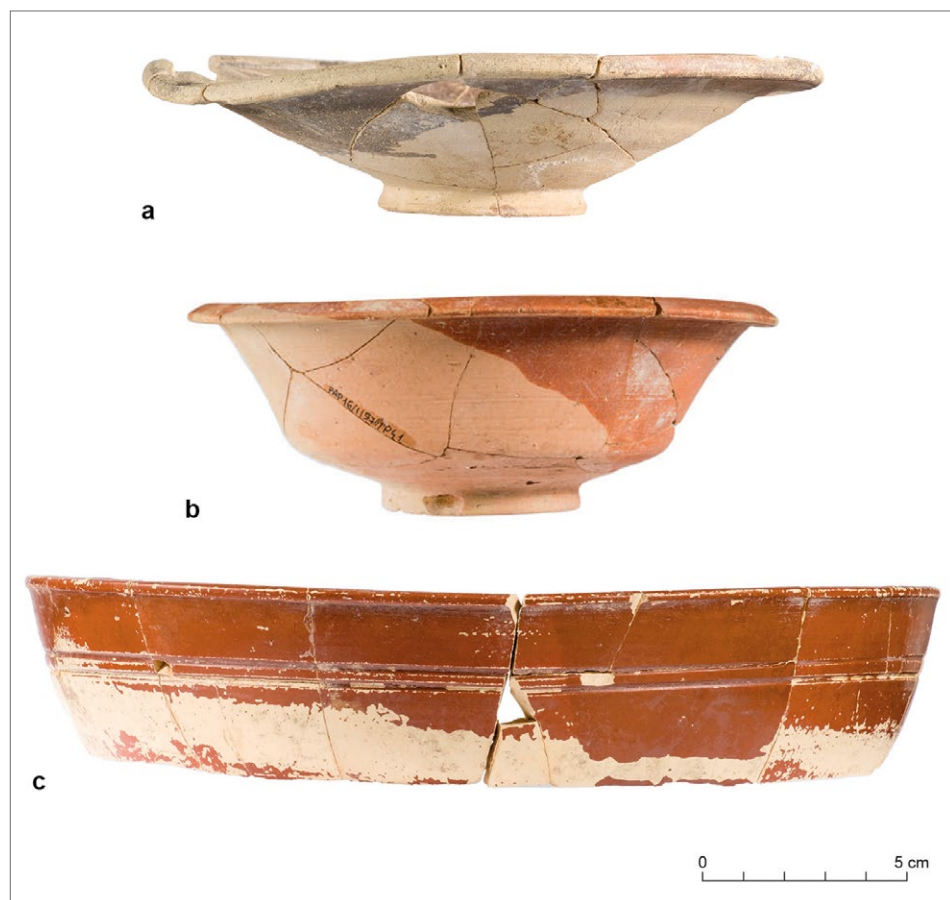


Fig. 2. Vessels for food service: a – locally produced rolled rim plate; b – locally produced CCW out-turned rim bowl; c – ESA form 5 (Paphos Agora Project | photos A. Oleksiak)

7 ESA plate form 4 is very similar to form 3, usually larger in diameter (26–40 cm), with a narrow and projecting ring foot. Forms 3 and 4 cannot be distinguished from each other on the basis of rims, therefore the term “form 3/4” is often used.

Only a few examples of local CCW outturned rim bowls were found in the well [Fig. 2:b]. Characteristic features of this shape are convex lower and concave upper walls. The origins of the outturned rim bowl date back to the Classical period (cf. Marzec 2018: 67, Table 4.2).

The large bowl with flaring walls, ESA form 5 [Fig. 2:c], is characterized by a wide foot, oblique walls, and a slightly inturned rim. It was produced from the late 2nd century BC until the beginning of the 1st century AD (Hayes 1985: 17; 2008: 26).

### Drinking cups

The following shapes were classified as drinking vessels: incurved rim bowls (or echinus bowls), various cups including so-called “Palestinian bowls/cups”, and ESA bowl or cup forms 18 and 22.

The assemblage from the well included numerous echinus bowls belonging to the CCW category, mostly of local production [Fig. 3], and one rim fragment of an ESD echinus bowl [Fig. 4:a], likely form P17 (Hayes 1985: 83). The echinus bowl, a small handleless vessel with incurved rim, a prevalent CCW form common in the Mediterranean, is a problematic

shape in terms of vessel function. Due to their small diameter (about 10–13 cm), echinus bowls have been classified as drinking vessels (cf. e.g. Marzec 2018: 144). This assumption is supported by a remarkable scarcity of drinking vessels in the assemblage. However, according to some researchers, incurved rim bowls were used for individual servings of food, especially wet foodstuffs, including soups, stews, and mashes, as well as side dishes of fruits and nuts (cf. Rotroff 1997: 161; Daems et al. 2019: 84–85). It has been suggested that an incurved rim may have facilitated scooping out the content of the bowl using a piece of bread, while experiments have shown that the shape is ill-suited for drinking (Cleymans et al. 2017).

A few fragments of cups found in the well belonged to handleless cups, hemispherical in cross-section, with a flat or slightly concave foot. Among CCW hemispherical bowls, an already published example (Marzec and Kajzer 2019) with shallow, vertical incised decoration deserves particular attention. This kind of vessel has been attested on several sites in Cyprus (cf. Pieridou 1969; Młynarczyk 2005; 2010; Lund 2015: 115–117; Marzec and Kajzer 2020) and is dated to the Hellenistic period. A very similar shape was produced in ESA, form 19B, and in ESD, form 18A, both occurring in chronologically similar contexts (Marzec and Kajzer 2019: 317). One fragmentarily preserved rim found in the well represents a cup of this type manufactured in RS ware.

Another form variant that combines production technology with a specific shape is the mold-made relief bowl. It was made by pressing the vessel's external sur-



Fig. 3. Locally produced CCW echinus bowl (Paphos Agora Project | photo A. Oleksiak)

face into a mold covered with floral and/or figural decoration and subsequently applying slip or gloss. Relief bowls were likely first produced in Athens at the beginning of the last quarter of the 3rd century BC, but the production technology soon spread throughout the Mediterranean (Hayes 1991:

13–17; Papuci-Władyka 1995: 41–42; Rotroff 2018; Marzec and Kajzer 2020: 233). A small sherd of the relief bowl found in Well S.50 represents CCW likely manufactured in Ephesos and is decorated with a leaf motif [Fig. 4:b]. It broadens the repertoire of vessel shapes in the assemblage.

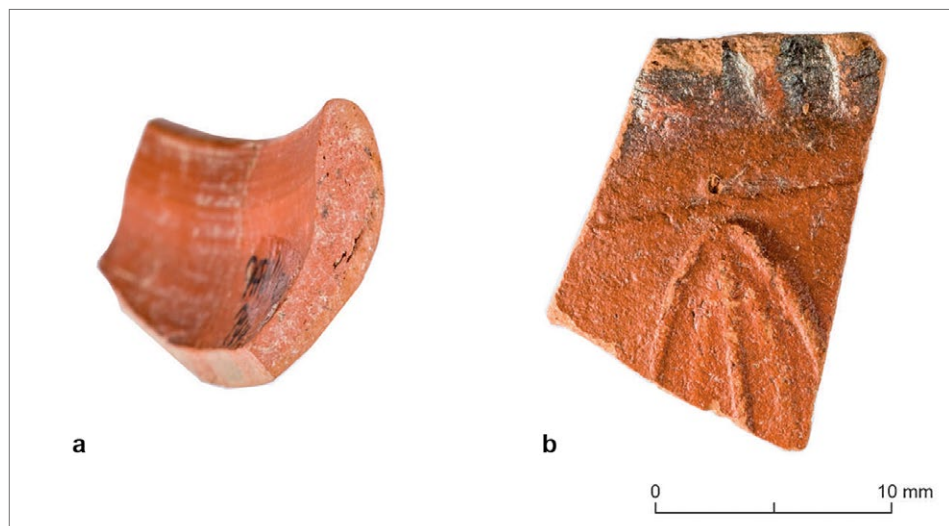


Fig. 4. Drinking cups: a – fragment of an ESD echinus bowl; b – fragment of an Ephesian CCW relief bowl (Paphos Agora Project | photos A. Oleksiak)

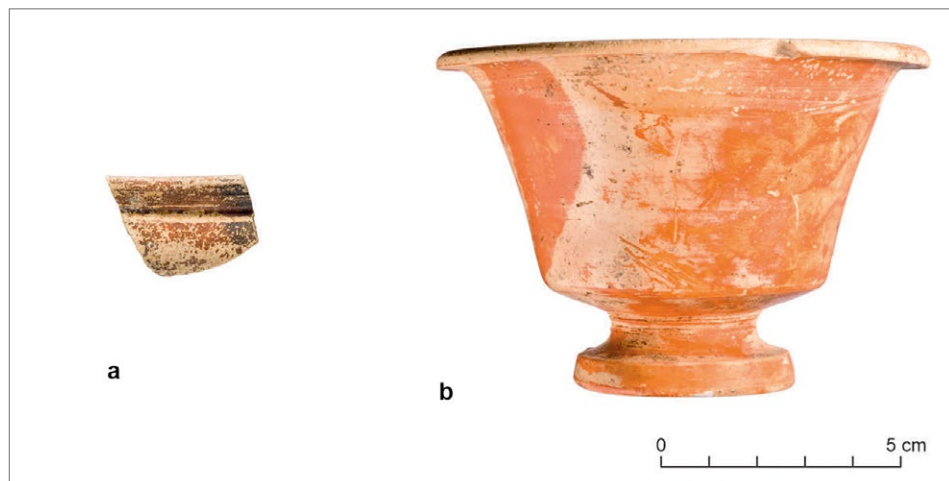


Fig. 5. Drinking cups, continued: a – fragment of a so-called Rhodian CCW “Palestinian bowl/cup”; b – ESA form 23 (Paphos Agora Project | photos A. Oleksiak)

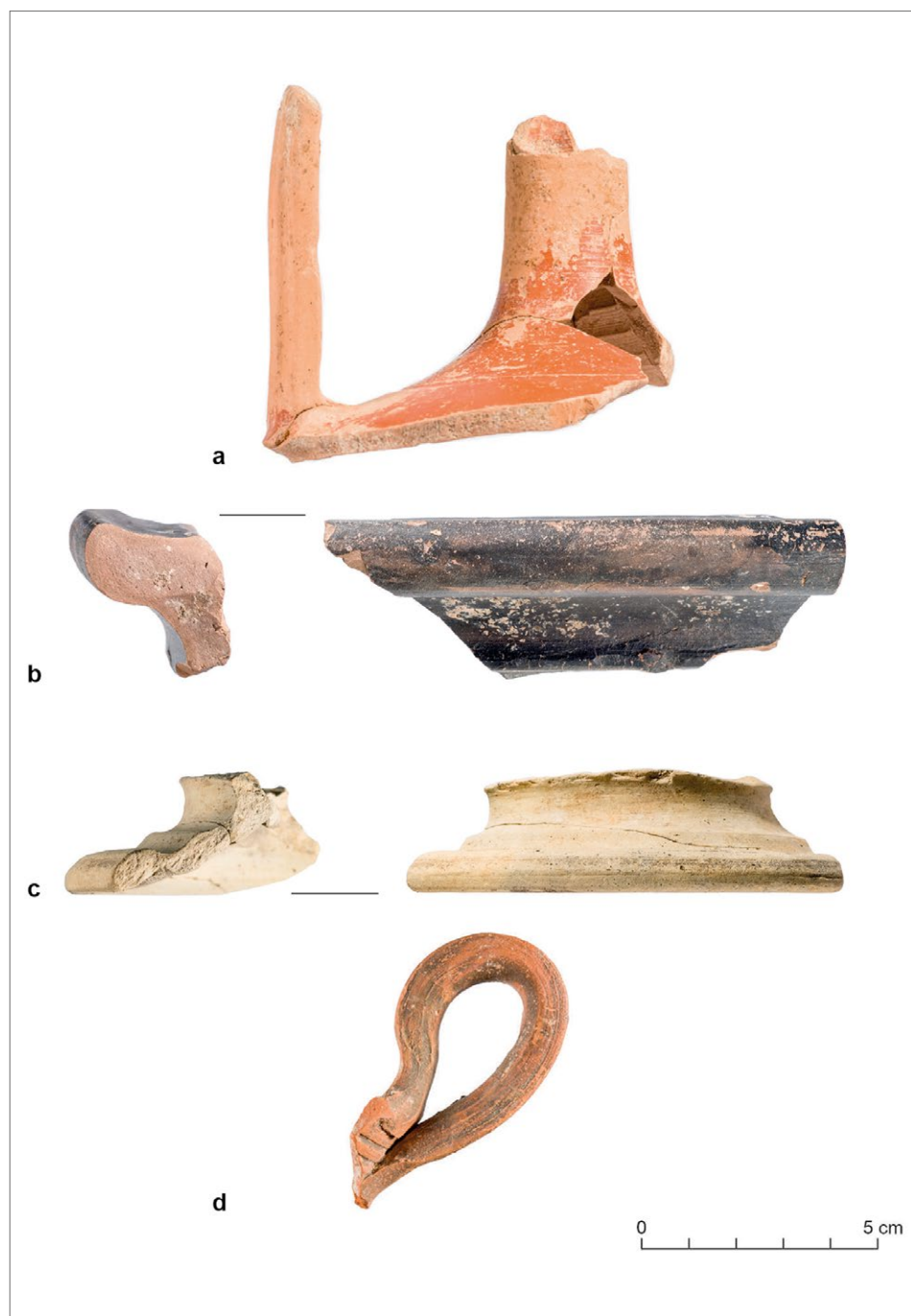


Fig. 6. Vessels for wine service: a – RS lagynos; b – fragment of a CCW krater in the so-called Standard Early Hellenistic fabric; c – molded foot of a krater or krater-bowl of unknown provenance; d – handle of a Knidian kyathos (Paphos Agora Project | photos A. Oleksiak)

Two fragmentarily preserved rims indicate the presence of the so-called Rhodian CCW<sup>8</sup> “Palestinian bowl/cup” in the assemblage [Fig. 5:a]. The form is relatively broad, the upper body is incurved and the rim everted. The cup has two small handles in the form of horizontal loops pinched back against the rim. The “Palestinian bowl”, known throughout the Mediterranean (Hayes 1991: 23–24; Papuci-Władyka 1995: 45; Marzec and Kajzer 2020: 231), was produced in the Eastern Mediterranean from the early 3rd century BC (Marzec 2018: 142; cf. Kögler 2011: 1129). In Nea Paphos, this form presumably appeared in the middle of the century and lasted until the end of the 2nd century BC (Papuci-Władyka 1995: 46; Marzec and Kajzer 2020: 231).

Several forms of ESA intended for drinking were also found in the well. A hemispherical cup classifiable as ESA form 18, with thin walls and two grooves that often appear on the rounded bottom, is dated to the late 2nd or early 1st century BC (Hayes 1985: 22). Another hemispherical cup, probably ESA form 19 represented by a wall fragment, is distinguished by incised decoration that covers the external walls and part of the bottom of the vessel (Hayes 1985: 22; Marzec and Kajzer 2019: 314). Examples of a popular ESA hemispherical footed cup/bowl form 22 (Hayes 1985: 23–24; Bes and Stone 2020: 655–656) were also identified in the assemblage. The ring foot of this cup is usually molded and the interior features

grooves or wheel bands. The shape was very common in the 1st century BC, appearing alongside ESA cups and plates forms 3–4, with which it may form a kind of serving set (Hayes 2008: 23). It was produced from the late 2nd century BC to about 10 AD (Hayes 1985: 23–24; 2008: 27). The assemblage also included a footed bell-shaped cup, ESA form 23 with a narrow, molded foot, dated to around 100–50 BC (Hayes 1985: 24; 2008: 28) [Fig. 5:b].

### Vessels for wine service

Another group comprises vessels for wine service, which include the following shapes: jugs, lagynoi, olpai, juglets, kraters, and a kyathos.

None of the jugs found in the assemblage were complete. However, partly reconstructed shapes, as well as fragments of rims and feet may indicate the presence of at least a few types.

The presence of lagynoi, which are among the most popular Hellenistic shapes commonly found in Cyprus (Hayes 1991: 18; Papuci-Władyka 1995: 59), is also confirmed in the well. This kind of jug has a characteristic carinated shape, a narrow neck, and a handle attached almost perpendicular to the body. In the assemblage, it is represented by a preserved upper part of a body and handle of a vessel produced in the RS technology [Fig. 6:a], and by an unidentified vessel, possibly RS or ESA.<sup>9</sup>

The most popular form of Hellenistic jug is the olpe (Hayes 1991: 28). Its

8 Color-coated Ware A according to Hayes (1991).

9 Sometimes fragments of RS and ESA vessels are difficult to distinguish due to macroscopic similarities, particularly in the case of closed forms, i.e. jugs. ESA jugs seem to have been produced in a slightly coarser fabric variant (compare Schneider 2000: 532).



distinctive features include small size, slender form, and lack of foot. Two locally produced olpai with slightly concave bottoms were found in the assemblage.

Two fragments of small, wide-mouthed juglets were also identified in Well S.50. Both were probably imported, one from Knidos, and the other from the Levant.

Only a few small fragments of BG and CCW (so-called Standard Early Hellenistic fabric) kraters were found in the assemblage [Fig. 6:b]. The deep vase with horizontal handles and small projecting rim, used for mixing wine with water, is uncommon in the Hellenistic period (cf. Rotroff 1997: 135). A poorly preserved

molded foot of unknown provenance [Fig. 6:c] could also be considered as part of a krater or krater-bowl.

In addition, one looped handle with a rim fragment was found to be of Knidian provenance. It is probably part of a small, deep, open vessel – a kyathos, a kind of dipper [Fig. 6:d].

### Pouring vessels for other liquids

Fragments of three Rhodian CCW small jugs with long tubular spout and strainer were also found in the well [Fig. 7]. These vessels feature a deep, funnel-like mouth and an integrated, small side handle. Due to the uncertain function of strainer jugs, they were assigned to a separate group of pouring vessels for other or unknown liquids. The appearance of this shape takes place no earlier than the 3rd century BC (cf. Rotroff 1997: 180–183; Papuci-Władyka 2011).

### QUANTITATIVE ANALYSIS

The performed quantitative analyses yielded a Minimum Number of Vessels equal to 121 and an Estimated Vessel Equivalent of 44.51. The results for vessels with established functions are presented in Table 3 and Fig. 8 below. Although these figures do not reflect the real number of vessels, they provide an indication of the shares of vessels of different functions within the TW pottery group.

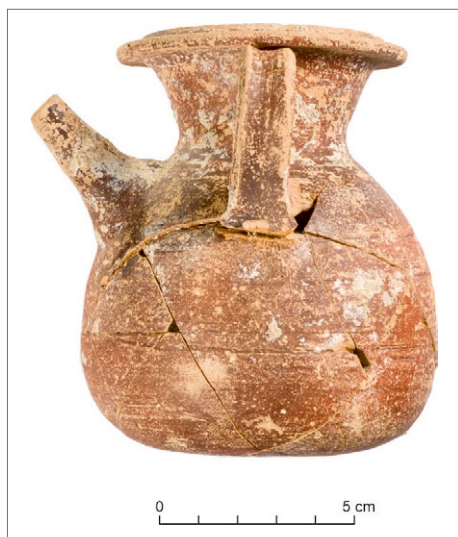


Fig. 7. Rhodian CCW strainer jug (Paphos Agora Project | photo A. Oleksiak)

Table 3. Results of quantitative analysis of vessels grouped according to function

Function	Food service	Drinking cup	Wine service	Pouring vessel for other liquids
MNV	64	37	17	3
MNV [%]	52.9	30.6	14	2.5
EVE	24.09	17.91	1.27	1.24
EVE [%]	54.1	40.2	2.9	2.8

The largest group of forms comprises vessels used for serving food [Table 4]. Dominant among them are plates with various rim shapes. The rims are rolled, flaring or outturned, thickened, projecting, and rilled. A degenerate variant of fishplate was also recognized. Moreover, there are several examples of ESA plates representing forms

2, 4, and 6. The group also includes bowls with outturned rims. The vast majority of vessels for serving food was classified as CCW produced locally, in the Paphos region. Documented among imported CCW plates was also one vessel with a massive rolled rim and one with a rilled rim, both produced perhaps in Ephesian workshops.

Table 4. Results of quantitative analysis (MNV and ESV) of vessels divided according to function, shape, and ware

Function	Shape (form/type)	Ware	MNV	MNV [%]	EVE	EVE [%]
food service	plate (rolled rim)	CCW	22	<b>18.2</b>	10.65	<b>23.9</b>
	plate (flaring/outturned rim)	CCW	12	<b>9.9</b>	4.73	<b>10.6</b>
	plate (thickened rim)	CCW	4	<b>3.3</b>	1.47	<b>3.3</b>
	plate (projecting rim)	CCW	1	<b>0.8</b>	0.1	<b>0.2</b>
	plate (fishplate)	CCW	3	<b>2.5</b>	1.02	<b>2.3</b>
	plate (rilled rim)	CCW	1	<b>0.8</b>	0.01	<b>0.0</b>
	plate (type not specified)	CCW	10	<b>8.3</b>	1.81	<b>4.1</b>
	plate (form 2)	ESA	2	<b>1.7</b>	0.31	<b>0.7</b>
	plate (form 4)	ESA	4	<b>3.3</b>	1.3	<b>2.9</b>
	plate (form 6)	ESA	1	<b>0.8</b>	0.2	<b>0.4</b>
	bowl (outturned rim)	CCW	3	<b>2.5</b>	1.91	<b>4.3</b>
	bowl (large bowl form 5)	ESA	1	<b>0.8</b>	0.58	<b>1.3</b>
drinking cup	bowl (inturned rim)	CCW	21	<b>17.4</b>	15	<b>33.7</b>
	bowl (inturned rim)	ESD	1	<b>0.8</b>	0.01	<b>0.0</b>
	bowl/cup (hemispherical)	CCW	2	<b>1.7</b>	0.09	<b>0.2</b>
	bowl/cup (hemispherical)	RS	1	<b>0.8</b>	0.18	<b>0.4</b>
	bowl/cup (hemispherical, relief)	CCW	2	<b>1.7</b>	0.39	<b>0.9</b>
	cup ("Palestinian bowl/cup")	CCW	2	<b>1.7</b>	0.02	<b>0.0</b>
	cup (form 18)	ESA	1	<b>0.8</b>	0.27	<b>0.6</b>
	cup (form 19)	ESA	1	<b>0.8</b>	0.01	<b>0.0</b>
	cup (form 22)	ESA	2	<b>1.7</b>	0.5	<b>0.1</b>
	cup (form 23)	ESA	4	<b>1.7</b>	1.44	<b>3.2</b>
wine service	jug	CCW	7	<b>5.8</b>	1.16	<b>2.6</b>
	lagynos	RS	1	<b>0.8</b>	0.01	<b>0.0</b>
	lagynos	ESA/RS	1	<b>0.8</b>	0.01	<b>0.0</b>
	olpe	CCW	2	<b>1.7</b>	0.02	<b>0.0</b>
	juglet	CCW	2	<b>1.7</b>	0.02	<b>0.0</b>
	krater	BG	1	<b>0.8</b>	0.02	<b>0.0</b>
	krater	CCW	1	<b>0.8</b>	0.01	<b>0.0</b>
	kyathos	CCW	1	<b>0.8</b>	0.01	<b>0.0</b>
pouring other liquids	strainer jug	CCW	3	<b>2.5</b>	1.24	<b>2.8</b>

A smaller group comprises drinking cups. The most popular shape among them is the bowl with an incurved rim (although it is still undetermined if it was used for drinking). Nearly all vessels were likely produced in the Paphos region. Also present are various forms of bowls and cups, such as the hemispherical cup/bowl, the relief bowl, the “Palestinian bowl/cup”, as well as ESA cups representing forms 18, 22, 23, and most likely 19 (identified in a body fragment with incised decoration) produced in various centers, both locally and abroad.

Other vessels for wine service form a small group comprising various jugs, lagynoi, olpai, juglets, kraters, and a kya-*thos*. The majority of the jugs, lagynoi, and olpai were presumably produced in the Paphos region. Among the remaining shapes are also some imports, e.g. from

Rhodes or Knidos. Two lagynoi found in the well were produced in the RS technology, although in one case whether it was indeed the RS or ESA technology is difficult to determine.

The last identified group of tableware, pouring vessels used for other liquids or unknown substances, comprises strainer jugs. All these vessels were made in a fabric defined as Rhodian (Élaigne 2002: 161–162; Domžalski 2007: 166; Marzec and Kajzer 2020: 231).

### CAPACITY

Capacity was calculated for 37 selected specimens, either with reconstructed profiles or preserved completely. The vast majority of them were plates and bowls, but two strainer jugs were also included. For each vessel, the maximum and optimum capacities were indicated [Table 5].

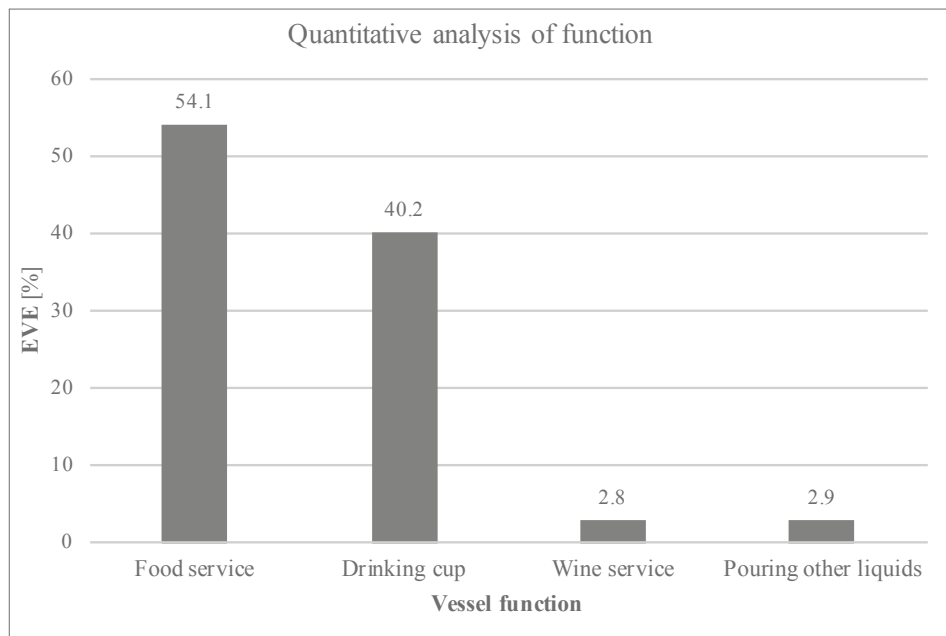


Fig. 8. Results of quantitative analysis of vessels divided according to function (K. Niziołek)

Table 5. Maximum and optimum capacities of 37 selected vessels. N/A (=not applicable) indicates that calculation of capacity proved impossible

	Ware	Shape	Type	Function	Maximum capacity (L)	Optimum capacity (L)
1	CCW	plate	rolled rim	vessel for food service	0.73	0.55
2	CCW	plate	rolled rim	vessel for food service	0.83	0.63
3	CCW	plate	rolled rim	vessel for food service	0.83	0.68
4	CCW	plate	rolled rim	vessel for food service	1.01	0.81
5	CCW	plate	rolled rim	vessel for food service	0.25	0.21
6	CCW	plate	rolled rim	vessel for food service	0.65	0.41
7	CCW	plate	rolled rim	vessel for food service	0.26	0.22
8	CCW	plate	rolled rim	vessel for food service	0.83	0.63
9	CCW	plate	rolled rim	vessel for food service	0.42	0.32
10	CCW	plate	flaring/outturned rim	vessel for food service	0.95	0.70
11	CCW	plate	flaring/outturned rim	vessel for food service	1.24	0.92
12	CCW	plate	flaring/outturned rim	vessel for food service	1.52	1.18
13	CCW	plate	flaring/outturned rim	vessel for food service	1.38	1.11
14	CCW	plate	flaring/outturned rim	vessel for food service	0.91	0.65
15	CCW	plate	thickened rim	vessel for food service	0.40	0.35
16	CCW	plate	thickened rim	vessel for food service	0.72	0.5
17	CCW	plate	thickened rim	vessel for food service	1.60	1.17
18	ESA	plate	form 4	vessel for food service	0.26	0.19
19	ESA	plate	form 4	vessel for food service	1.07	0.76
20	CCW	bowl	incurved rim	drinking cup?	0.19	0.16
21	CCW	bowl	incurved rim	drinking cup?	0.28	0.23
22	CCW	bowl	incurved rim	drinking cup?	0.25	0.20
23	CCW	bowl	incurved rim	drinking cup?	0.29	0.23
24	CCW	bowl	incurved rim	drinking cup?	0.24	0.19
25	CCW	bowl	incurved rim	drinking cup?	0.23	0.18
26	CCW	bowl	incurved rim	drinking cup?	0.25	0.19
27	CCW	bowl	incurved rim	drinking cup?	0.22	0.18
28	CCW	bowl	incurved rim	drinking cup?	0.17	0.14
29	CCW	bowl	incurved rim	drinking cup?	0.19	0.15
30	CCW	bowl	incurved rim	drinking cup?	0.20	0.17
31	CCW	bowl	incurved rim	drinking cup?	0.20	0.17
32	CCW	bowl	outturned rim	drinking cup?	0.37	0.33
33	CCW	bowl	outturned rim	drinking cup?	0.51	0.45
34	CCW	bowl	hemispherical	drinking cup	0.95	0.82
35	ESA	cup	form 23	drinking cup	0.16	0.13
36	CCW	strainer jug	not applicable	pouring vessel for other liquids	0.23	N/A
37	CCW	strainer jug	not applicable	pouring vessel for other liquids	0.30	N/A

Plates displayed a variety in terms of capacity. The variant seems to be of secondary importance in this case, although some trends could be observed. The largest and most diverse group were the rolled rim plates, whose capacity varied from 0.25 L to 1.01 L. Flaring and outturned rim plates tended to be larger, their maximum capacities ranging from 0.9 L to 1.52 L. Each of the thickened rim plates had a different size, i.e. small 0.40 L, medium 0.72 L, and large 1.60 L. ESA plates were equally diverse.

Bowls constituted the more homogenous group. Outturned rim bowls had

capacities of 0.37 L and 0.51 L, proving them to be significantly larger than the incurved rim specimens. Within one variant represented by 12 bowls with incurved rims, the maximum capacities ranged from 0.17 L to 0.29 L. The hemispherical bowl with a maximum capacity of 0.95 L could be classified as a large drinking vessel, while a small ESA cup form 23 could only hold 0.16 L.

Strainer jugs found in the assemblage had similar capacities of approximately 0.23 L and 0.30 L (measured to the level of the spout).

## DISCUSSION

The results of macroscopic analysis indicate that the Hellenistic TW assemblage found in Well S.50 in the Agora of Nea Paphos contained vessels belonging to four technological categories (wares) related to their manufacturing technique: BG, CCW, RS, and Eastern Sigillata (ESA and ESD). These categories comprised 14 MGs defined on the basis of fabric characteristics. The calculations of the MNV and the EVE, combined with the macroscopic study, show that the vast majority of the TW consists of CCW pottery presumably produced in the Paphos region. This indicates that the inhabitants of the city in the Hellenistic period may have preferred locally produced pottery, probably a cheaper and more easily accessible product manufactured on a significant scale at that time (Marzec 2018: 249). By comparison, imported vessels constitute about 15% of all TW found in the deposit.

28 different forms of vessels were identified within the four main classes

(vessels for food service, drinking cups, vessels for wine service, and pouring vessels for other or unknown liquids). These results should be taken into account when considering eating habits. During the Hellenistic period, in Cyprus, as in the entire Eastern Mediterranean, the Classical symposium was most likely replaced with a kind of banquet (Rotroff 1996: 25). Wine consumption continued to occupy a prominent place at these feasts, but the importance of the meals consumed significantly increased. The archaeological record shows that large vessels used for serving wine were replaced with small jugs with a capacity suited to the needs of one person. At the same time, the number of serving vessels of a capacity corresponding to a single portion increased (cf. Rotroff 1996: 18). In the case of the assemblage from Well S.50 in the Agora of Nea Paphos, specific types of plates in different sizes could be associated with various foods served in them, not necessarily in the form of individual

portions. Meanwhile, the similar capacity of bowls may suggest that the portions served in single vessels were more or less equal in size (regardless of whether it was food or drink). However, to learn more about eating and drinking habits, the function of the incurved rim bowls requires clarification. As in the case of ESA, it can be assumed that some forms found together could constitute a serving set. Plates forms 3, 4, and bowl form 22, often found together, may be an example (compare Bes and Stone 2020: 655–656).

At this stage of research, nothing contradicts the preliminary assumption that the deposit was created around the mid-1st century BC. The three above-mentioned phases of the backfilling of the well, recognized on the basis of stratigraphic analysis (Miszak 2021: 217–218), can also be applied to the pottery. The TW found at the bottom of the well and slightly above it,<sup>10</sup> in contexts attributable to the first phase of backfilling, may be associated with the functioning of the structure as a source of drinking water and is most probably mixed with material thrown into the well during this phase. In the next phase, human remains were dumped into the well. According to preliminary anthropological analyses carried out by Michelle Gamble,<sup>11</sup> they

belonged to more than one individual, including a child. This unusual discovery could be a result of some dramatic events or a testimony to unusual social practices targeting individuals “othered” by the society.<sup>12</sup> Special burial practices for infants are a widespread phenomenon supported by ample ethnographic and archaeological evidence. They include, for example, burial outside the necropolis or according to a different ritual (Liston et al. 2018: 105–106). The causes of death and reasons for infant burial in the well may be multifold, including sacrifice, plague, infanticide, or normal mortality of infants (Liston et al. 2018: 116). With the scant information available, the reasons for such behavior are hard to determine. The presence of adult individuals in the well adds to the complexity of the situation. It may be linked with a kind of “otherness”, which stems from unusual behavior during life, circumstances of death, or lack of membership in the community (Liston et al. 2018: 132).<sup>13</sup> It is also impossible to determine whether the deposition was a one-time act or an ephemeral but regular practice. Nevertheless, certain unusual TW shapes found at this level, for example strainer jugs, could have been placed in the well intentionally, as a kind of grave goods.

10 During this phase and the successive stages of the backfilling of the well, several interesting vessels and objects that could inform the understanding of the nature of this deposit were found and are still under examination.

11 This information was obtained courtesy of Professor Ewdoksia Papuci-Władyka, based on correspondence with Michelle Gamble, Heritage and Archaeological Research Practice Ltd. (HARP).

12 For such unusual practices, the Agora Bone Well in Athens could be a good analogy (Liston et al. 2018).

13 The issue of physical and mental “otherness” in past societies was widely discussed during the symposium “The Archaeology and Anthropology of Madness, Disability, and Social Exclusion” (Hubert 2013).



The third phase of backfilling is separated from the previous one by a stratum devoid of archaeological materials. In contrast to the other two, this last phase of deposition included some shapes unique to this part of the assemblage, for

example a kyathos and a krater. A more detailed analysis of all materials found in the well, currently in preparation, should help verify the hypotheses presented above and assist in the interpretation of the deposit as a whole.

## CONCLUSION

While the Hellenistic deposit found in the well in the Agora of Nea Paphos is still not fully understood, and a further study of all the finds is needed, the analysis of TW pottery leads to several observations. The vast majority of vessels belonging to this category, used in the Agora during the Hellenistic period, were produced locally, within the city limits or in the vicinity (Marzec 2018: 235–238; Marzec et al. 2019). Shapes used for serving food and drink are both equally common, and some serving sets can be recognized. That said, it is necessary to acknowledge the problematic issue of the interpretation of the function of incurved rim bowls. The applied research methodology provides a good starting point for using pottery studies to explore social questions. However, there is no certainty that the interpretation of this pottery

assemblage is correct, i.e., we do not know whether the vessels recovered during the excavations formed a set, and whether they were used at the same time, by the same people, in the same space. Moreover, it is worth remembering that the public nature of the Agora may have had an impact on the character of tableware assemblages found in this area, and that the pottery presented herein is not necessarily the same as in the private areas of the city. In spite of these reservations, the results obtained help improve our understanding of the eating and drinking habits of the inhabitants of Hellenistic Nea Paphos and, more broadly, add to our knowledge on serving food and drink in the Eastern Mediterranean world. Future studies on tableware from the site will undoubtedly aid in exploring these issues further.

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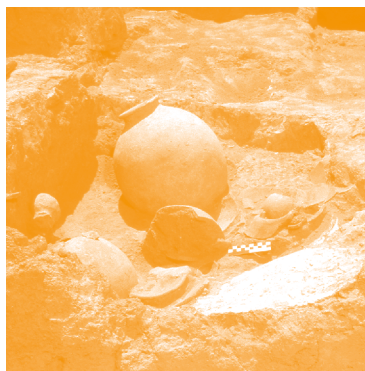
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# White-plastered basins from Tell Djassa el-Gharbi in northeastern Syria and their possible functions



**Abstract:** A review of archival documentation from Tell Djassa el-Gharbi in northeastern Syria and comparative data from sites published in the last three decades have led to a reassessment of some features discovered at the site. This paper presents white-plastered basins uncovered in the topmost occupational stratum dated to the late phase of ED III/EJZ III or the beginning of the Akkadian period. The installations are divided into three general categories based on their morphology, associated features, and possible functions. Analogies to each category of basins are discussed. The Locus 1 installation is discussed in detail. Contents of a unique pottery deposit found inside this installation are described, and possible functions of this feature are proposed following analysis of the vessels and parallel finds.

**Keywords:** white-plastered basins, household installations, technological modifications of pottery, food production, beer production, seed oil production, 3rd millennium BC, Khabur Basin, Syria

## INTRODUCTION

The site of Tell Djassa el-Gharbi is located in the Khabur Basin (northeastern Syria), northwest of the city of Hassake [Fig. 1]. Three seasons of excavations were conducted on the site between 1988 and 1990 by a team from the Polish Centre of Mediterranean Archaeology, University of Warsaw

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**Acknowledgments**

Access to archival documentation from fieldwork at Tell Djassa el-Gharbi was provided to me by courtesy of the Polish Centre of Mediterranean Archaeology, University of Warsaw. I would like to express my sincere gratitude to Professor Piotr Bieliński for providing invaluable information on the site and the installations found therein.



(PCMA UW), as part of the International Salvage Program of the Hassake Dams Area (Bieliński 1991: 94; Reiche 2006: 100).<sup>1</sup>

The tell is around 16 m high, with the top rising to 333.8 m above sea level. It is conical in shape, about 150 m in diameter, and covers an area of approximately 2 ha (Bieliński 1990: 17; Reiche 2006: 100).<sup>2</sup> Four occupational layers, all of them attributed to the Early Dynastic III or Akkadian periods, were distinguished in the course of excavations (Bieliński 1990: 17–21; 1991: 94–99).<sup>3</sup> The site functioned

as a small, possibly fortified rural settlement (Bieliński 1991: 96).

Among several intriguing features of the site are numerous white-plastered basins registered in the topmost occupational stratum designated as Layer I (Bieliński 1990: 19). The layer, over 1 m thick and consisting of three building levels, should be dated to the late phase of the ED III/EJZ III or the beginning of the Akkadian period (Bieliński 1990: 18–19).

All the basins were replastered and renewed multiple times, pointing to

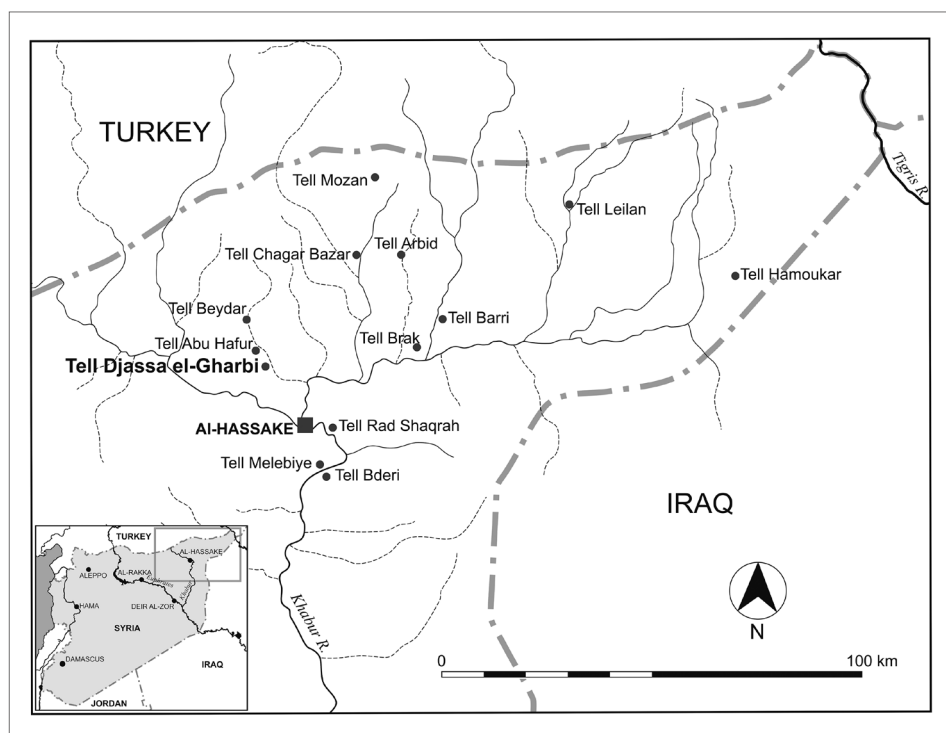


Fig. 1. Map of northeastern Syria (Base map by M. Momot, modified by G. Rzeźnik)

- 1 The 1988 season was supervised by Prof. Maria Krogulska, and the 1989–1990 seasons were directed by Prof. Piotr Bieliński.
- 2 For more details regarding the excavation methods and location of individual trenches, see Bieliński 1990: 17–18; 1991: 94–95.
- 3 Hellenistic potsherds were also found at the site (Reiche 2006: 100).

their significance and repeated usage. They have different shapes and sizes and can be divided into several broad categories on the basis of their dimensions, adjoining features/artifacts, and possible functions.<sup>4</sup> Each basin could have been used for multiple purposes, hence some of them can be assigned to more than one of the proposed categories. Unfortunately, nearly all of them were poorly preserved when excavated.

Most of these installations are presented here for the first time.<sup>5</sup> The author of this paper did not take part in the Tell Djassa el-Gharbi excavations, so all the research on the unpublished white-plastered basins, features and artifacts associated with them is based on archival documentation (i.e., photos, drawings, notes, excavation journal), as well as personal communication with the director of the 1989–1990 excavation seasons, Professor Piotr Bieliński.

## BASINS ACCOMPANIED BY FIRE INSTALLATIONS

Basins of the first group are relatively small, roughly oval in shape, and were

registered in the same rooms and levels as fire installations, i.e. fireplaces and *tannur*



Fig. 2. Sector A, Locus 3; remains of a *tannur* oven in the foreground; two badly preserved white-plastered basins in the background (PCMA UW | photo A. Reiche)

- 4 White-plastered basins have been documented on a number of other sites in northeastern Syria. For some examples and possible functions of these installations, see Pfälzner 2001: 167–169.
- 5 See Bieliński 1990: 19 for a previous report on the white-plastered basins at Tell Djassa el-Gharbi.

ovens. An example of such a set of installations was discovered in Locus 3, Sector A, in the lowest level of Layer I [Fig. 2]. In this room, two adjoining oval white-plastered basins were found together with a *tannur*. They were replastered multiple times, filled with brick fragments and raised along with the floor level.

A similar set of installations was discovered in Locus 31, Sector N, in the latest phase of Layer I. This room was part of a domestic unit fully uncovered during the 1990 season (Bieliński 1991: 96–98; Koliński 1996: 139). In it, an oval basin was found near a *tannur* oven and a fireplace [Fig. 3]. The basin is a later addition;

in an earlier phase of the room, the only installation was a *tannur* oven.

Sets comprising basins and fire installations from levels dating to the 3rd millennium BC were discovered at numerous sites in northeastern Syria. Among them are other tells excavated by the same PCMA team as part of salvage operations in the Hassake dams area [see Fig. 1], including Tell Abu Hafur, located just 2.5 km north of Tell Djassa el-Gharbi (Locus 20; Koliński and Ławecka 1992: 188–189), and Tell Rad Shaqrah (e.g. Locus 47;<sup>6</sup> Bieliński 2005: 34–35).<sup>7</sup> Other examples were found at Tell Beydar (Lebeau and Suleiman 2008: 11), Tell Melebiye (Lebeau



Fig. 3. Sector N, Locus 31; a white-plastered basin on the left; a *tannur* oven in the center; a fireplace on the right (PCMA UW | photo A. Reiche)

6 Apart from the mud-plastered oval basin, one other “basin” was found in this room. It was rectangular and constructed of mudbricks placed on edge (Bieliński 2005: 35), and it differs significantly from the installations which are the subject of this paper. However, it could be a part of a flour grinding installation, similar to “grinding tables” found at other sites in the Khabur Basin (Pfälzner 2001: 139–146).

7 Although those basins are mud-plastered rather than white-plastered, their function could have been the same.

1996: 134), Tell Gudeda (Fortin 1990: 572), and Tell Chuera (Pfälzner 2011: 159).

Basins found in close proximity to fire installations are usually interpreted as surfaces for use in food production, i.e. flour preparation and dough mixing/

kneading (Fortin 1990: 572; Rova 2014: 139). Dough for bread or cake prepared in a basin could be quickly and efficiently transported to a nearby oven or fireplace used to make food for a given household or institution.

## LARGE AND IRREGULAR BASINS

The second type of white-plastered basins found at Tell Djassa el-Gharbi is installations characterized by larger sizes and irregular shapes. Examples of such features were discovered in Sectors A and B [Fig. 4] in the topmost level of Layer I (Bielinski 1990: 18–19).

In Sector A, two basins were found, one on top of the other. The earlier one was smaller and roughly angular in shape, whereas the later one was larger and oval [see Fig. 4]. Apart from pottery finds, no additional features or installations pointing to their functions were reported from the context associated with these basins. Both were repeatedly replastered.

The basin from the border between Sectors A and B is the largest one found at the site, measuring 2.5 m × 1.8 m (Bielinski 1990: 19). It is also poorly preserved, with most of the walls missing. The associated features include a plastered inlet channel [see Figs 4, 6] located at the southern edge of the basin, a bitumen floor to the southwest, and a large saddle quern to the northwest of the basin [see Figs 4, 5].

Frequently renewed white-plastered basins characterized by large dimensions

and association with querns or a grinding installation were discovered on a number of other sites in northeastern Syria, often in contexts suggesting large-scale food production.

Several *tannur* ovens, three white-plastered basins and over 40 basalt grinders and grinding stones were found at Tell Gudeda, in a sector devoted to “industrial” scale food processing (Fortin 1990: 572–573). One of the basins, measuring 1.40 m × 1.80 m, had a depression in the center (Fortin 1990: 572), which could facilitate collection of the ground flour. A roughly comparable feature was found in Room 1 in the TC area building at Tell Brak, where a white-plastered sloping surface with a small jar set into the floor was located beneath flour grinding installations (Emberling et al. 1999: 9–12).<sup>8</sup>

At Tell Beydar, a significant concentration of large white-plastered basins was uncovered alongside *tannur* ovens, grinders and grinding stones in the so-called “Northern Building”, which was dated to the EJZ IIIa period and interpreted as a possible centralized bread production area (Rova 2014: 138–139). The basins could

8 Sometimes this kind of sloping surface was used instead of white-plastered basins for facilitating the collection of flour, e.g. in the “Northern Building” at Tell Beydar, where in fact both types of features may have been used (Rova 2014: 139–140). This might raise a question whether different types of flour grinding installations could correspond to the preparation of different products (e.g. types of flour) or stages of food production.



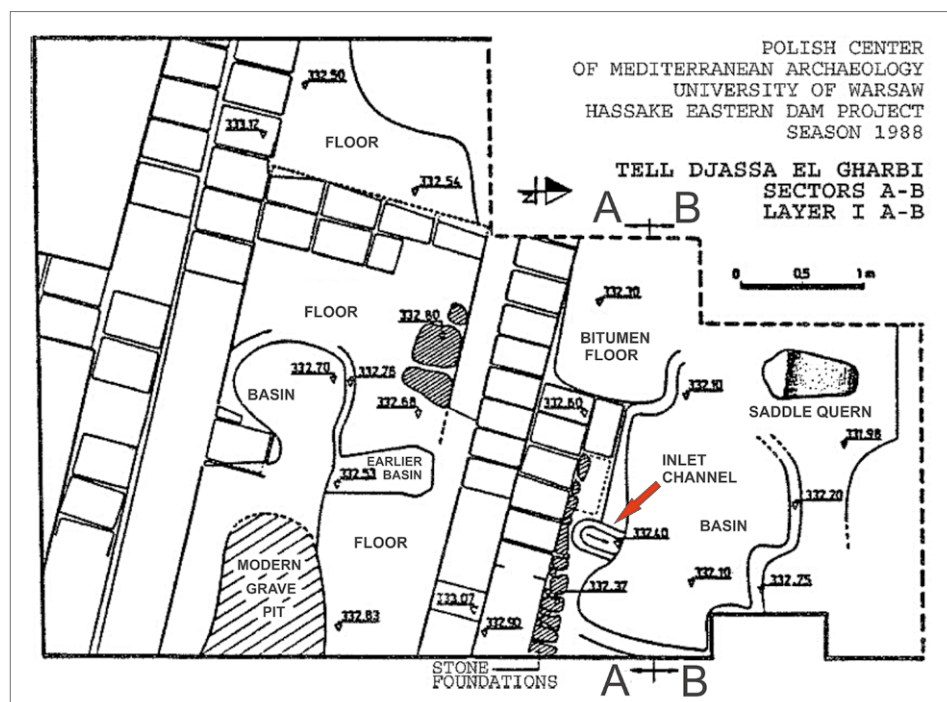


Fig. 4. Topmost phase of Layer 1 in Sectors A-B (After Bieliński 1990: Fig. 1; modified by G. Rzeźnik)



Fig. 5. General view of Layer 1 in Sectors A-B, view from the west; white-plastered surface of the basin on the border between Sectors A and B on the left, along with a big saddle quern next to the installation (PCMA UW | photo F. Stępniewski)

have been used for collecting fresh flour from the grinding stones. Some were also utilized for dough mixing/kneading like the abovementioned smaller basins associated with fire installations (Rova 2014: 139).

Another example, also from Tell Beydar, comes from a building interpreted as a “bakery” (EJZ IIIb period). Apart from *tannur* ovens, the building featured large white-plastered basins found below “grinding tables” (Rova 2014: 144). These installations were clearly used for collecting freshly ground flour, as at most other northeastern Syrian sites on which

“grinding tables” have been discovered (Pfälzner 2001: 167–168).<sup>9</sup>

Similarly to the parallels mentioned above, the basin found on the border between Sectors A and B at Tell Djassa el-Gharbi could have been used for collecting ground flour. It was probably not part of a large-scale production facility, but the sheer size of the installation points to this feature’s considerable importance. However, none of the basins mentioned above were associated with an inlet channel, so the function of the Tell Djassa el-Gharbi installation may have been more versatile.

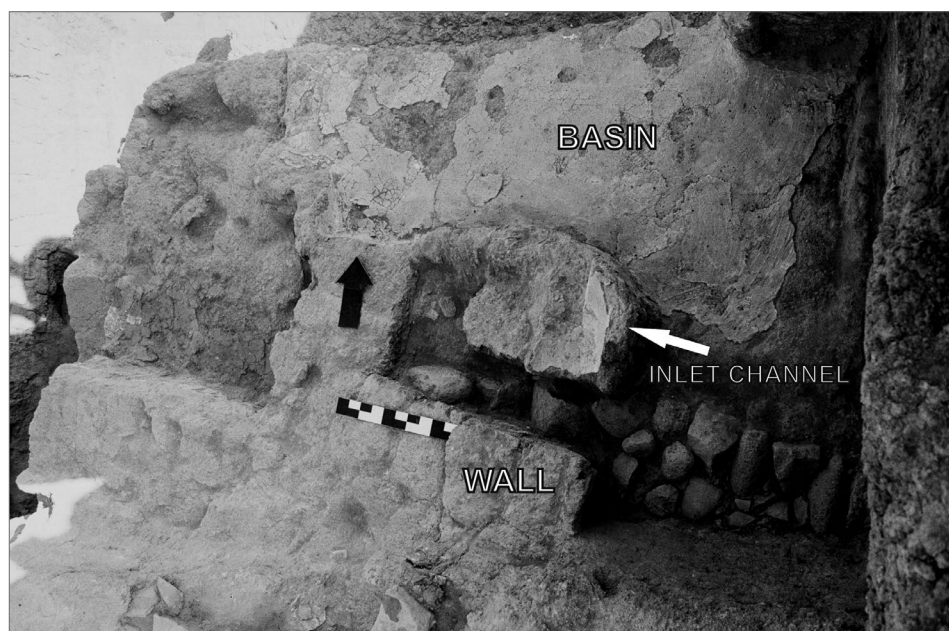


Fig. 6. Inlet channel connected to the white-plastered basin on the border between Sectors A and B (PCMA UW | photo F. Stępniewski, modified by G. Rzeźnik)

- 9 To the list of possible “grinding tables” from Syrian sites one could add the installation from Tell Rad Shaqrah, mentioned above, and possibly a double “grinding table” from Room L14 at Tell Arbid, interpreted by the excavators as a double storage bin (Smogorzewska 2019: 38). This installation bears a resemblance to “grinding tables” from Tell Selenkahiye (van Loon 1979: Fig. 19; Pfälzner 2001: 144–145) and Tell Brak (Emberling et al. 1999: 9–12). Presumably, instead of white-plastered basins, pottery jars were placed at the outlet of this grinding installation to serve as flour collectors, as in Pfälzner’s reconstruction of a “grinding table” from Tell Bderi (Pfälzner 2001: Abb. 72).



## BASINS WITH INLET CHANNELS

The last type of white-plastered basins found at Tell Djassa el-Gharbi are installations with inlet channels, pre-

sumably connected with liquid management. Two such basins were uncovered at the site.

The first is the basin on the border between Sectors A and B, discussed above in connection with possible flour grinding activities [see *Figs 4–6*]. Apart from a saddle quern, also associated with this installation were a plastered inlet channel to the south of the basin [*Fig. 6*] and a waterproof bitumen floor to the southwest of it.

The second installation comprises a group of connected basins with an inlet channel connected with the largest one, discovered in Locus 1, Sector K (Layer I). At least three phases of use of this installation were distinguished. In the first, the basin was relatively small, and its surface was repeatedly replastered. By the second phase, the bottom was raised by about 10 cm, and the basin measured approximately 1.7 m × 0.9 m and was 0.4 m deep (Bieliński 1990: 19). Two smaller basins were connected to it: one, ovoid in shape (Bieliński 1990: 19), adjoined the top of the southern wall of the main basin, and the other one, unfortunately badly preserved, was found to the northwest [*Figs 7–9*].<sup>10</sup> The inlet channel to the main basin was discovered to the southeast of the installation, under a later mudbrick wall.<sup>11</sup> In the construction of the last (third) phase, the basin was filled with a pottery deposit (see below) and the floor was raised by about 0.4 m. A large storage jar was also set into the ground adjacent to the basin [see *Figs 7–9, 14*]. This installation is



Fig. 7. Top: partly excavated Locus 1 installation, view from the west; bottom: second phase of the installation with the pottery deposit and two smaller basins, marked with a dotted line; the remains of the third phase marked with a continuous line (PCMA UW | photos P. Ciepielewski, bottom image modified by G. Rzeźnik)

<sup>10</sup> The southern wall of this basin was badly damaged by later activities at the site [see *Fig. 8*].

<sup>11</sup> Unfortunately, no photos or further details regarding this channel are available.

unusual not only at the site of Tell Djassa el-Gharbi but also in the entire region of northeastern Syria.

White-plastered basins featuring channels are rarely reported from northeastern Syrian sites. Usually the channel is a drain from the installation, or the authors of the excavation reports do not specify its shape, possible function or

elevation in relation to the basin itself (e.g. Fortin 1990: 553; Lebeau 1996: 132; Pfälzner 2001: 167–169).

To my knowledge, the second phase of the installation in Locus 1 at Tell Djassa el-Gharbi, featuring the inlet channel, smaller basins, and the main basin characterized by an unusual depth and morphology, finds no direct parallels in northeastern Syria.

## THE LOCUS 1 POTTERY DEPOSIT

Another unusual feature of the Locus 1 installation is a substantial pottery deposit discovered inside it [see *Figs 7, 10, 11*]. It comprised a total of 29 vessels (Bieleński 1990: 19), some of them with evidence of technological modifications, which, if the vessels constituted a set

used in connection with the basin, may suggest a possible function(s) of this installation.

A globular jar with a short, curved neck and restricted orifice discovered inside the basin had an intentionally pierced base and was extensively coated



Fig. 8. Last (third) phase of the white-plastered installation in Locus 1, view from the east; storage jar adjacent to the last phase visible on the left; small, ovoid white-plastered basin connected with the previous phase of the installation visible in the center; later burial (with a white shell on top) next to the small basin (PCMA UW | photo P. Ciepielewski)

with white plaster on one of its sides [Figs 11, 12]. The coating was the same substance as on the surface of the white-plastered basins (Piotr Bieliński, personal communication, 2022). The amount of coating used suggests that it served a different purpose than repairing the pot's cracked body or plugging a hole in it. Also, a part of another pottery vessel was found inside the jar.

In addition, two jars found in the deposit, likewise characterized by globular shapes, short and curved necks, and rounded bases, had intentionally pierced holes in the midsections of their bodies [Fig. 13]. In the case of one vessel, the hole was plugged with a plaster stopper [see Figs 13:B, 14].<sup>12</sup>



Fig. 9. Fully excavated Locus 1 installation (PCMA UW | photo P. Ciepielewski)

Production and usage of pottery vessels with intentionally pierced bases or holes in various sections of their bodies has a long tradition in the ancient Near East. At Tepe Gawra, a set of very unusual pottery vessels, some of them with holes in the bases as well as in the middle and upper sections of the bodies, was found in levels dating as far back as the late 5th millennium BC. Levey (1955a; 1955b) interprets them as parts of a distillation, sublimation and extraction apparatus, a hypothesis which was corroborated by archaeological experiments conducted by a team from the Cyprus Perfumery Theme Park (Belgiorno 2020). These experiments showed that reed rods could be inserted into the holes for their technological use in distillation, and the holes themselves could be plugged and unplugged with stoppers when needed (Belgiorno 2020: 10–17).

A jar with a small hole near its base was found in Godin Tepe, Iran, and dated to the second half of the 4th millennium BC. Both the context in which this vessel was discovered and the results of laboratory analysis of red residue found inside suggest that it was used for storage of a product derived from grapes, most probably wine (Badler 2003: 47–50). The hole could have been used as a counter-pressure for pouring wine from the top of the vessel or for draining the liquid without disturbing the organic material accumulated below (Badler 2003: 50).

Large jars with pierced holes, dated to the Early Dynastic period, were also discovered during the Oriental Institute

12 For more details regarding this type of vessels and some analogies from northeastern Syria, see Smogorzewska 2019: 130.





Fig. 10. Partly excavated pottery deposit from the second phase of the white-plastered installation in Locus 1, view from the north; in the foreground a small, ovoid white-plastered basin connected to the main one [see Fig. 8]; remains of the third phase of the installation on the left (below the scale) and upper right (PCMA UW | photo P. Ciepielewski)



Fig. 11. Partly excavated pottery deposit from the second phase of the white-plastered installation in Locus 1, view from the south; in the background, globular jar with intentionally pierced base and a thick coating of white plaster (PCMA UW | photo P. Ciepielewski)

expedition in the Diyala region (Paulette 2020: Fig. 5.3). On the basis of ancient texts and later analogies, it was concluded that some of them may have been used for beer production (Paulette 2020: 70).

At Tell Brak, an unusual jar with a pierced spout in the lower section of its body was found in a layer dating to the Akkadian period (Oates 2001: 180).

Some kind of liquid, perhaps beer, may have been strained thanks to this feature.

A large variety of pottery vessels with intentionally pierced holes was also discovered in a Late Bronze Age settlement at Tell Sabi Abyad, a site located on the Balikh River in northern Syria (Duis-termaat 2007). The function of one jar characterized by a pierced base seems to



Fig. 12. Globular jar from the deposit, with intentionally pierced base and a thick coating of white plaster on one of its sides (PCMA UW | photo P. Ciepielewski)



Fig. 13. Two globular jars from the pottery deposit in Locus 1, with intentionally pierced holes in the midsections of their bodies; hole in one of the vessels (B) plugged with white plaster [see Fig. 14 for detail of the plug] (PCMA UW | photo P. Ciepielewski)

have been the storage or management of water, as it was covered with bitumen on the inside and had a cuneiform sign “A”, meaning “water”, incised in the upper part of its body (Duistermaat 2007: 411, Fig. IV.67.e). Unfortunately, the functions of other vessels with pierced holes and spouts from this site are not as evident (e.g. Duistermaat 2007: Fig. IV.91.z–ab, Fig. IV.95.i).

A substantial assemblage comprising open vessels of a distinctive type, with a hole in the base and varying in capacity, was also found at Tell Sabi Abyad. They were identified as soaking and germination vessels used in beer production, called *namzītu* or *nazzītu* in ancient cuneiform texts (Duistermaat 2007: 252–253, Fig. VI.18). One of them also featured a strainer (Duistermaat 2007: Figs IV.59.a, VI.11), which presumably had a similar function as the perforated spout of the aforementioned jar from Tell Brak.

The *namzītu* vessel, and other shapes with pierced bases, were also discovered in contexts related to beer production at other Late Bronze Age sites in Syria and Iraq, namely at Tell Hadidi (Dornemann 1981: Figs 3, 8:1–4; Gates 1988: Fig. 1:a–c), Tell Bazi (Zarnkow, Otto, and Einwag 2011: Fig. 4.1 right), Khani Masi (Perruchini et al. 2018: Fig. 5), and Tell Khaiber (Calderbank 2021: Fig. 9:a–b). The *namzītu* vessels were probably used together with vessel stands (*namḥārū*) (Calderbank 2021: 45), so that the waste water from the vat could be drained through the hole in the

base, as suggested also by the discovery of both these shapes in the same context at Tell Sabi Abyad (Duistermaat 2007: Fig. VI.12).

A well-known cold mashing process experiment was carried out by the excavators of the Late Bronze Age settlement at Tell Bazi (Zarnkow, Otto, and Einwag 2011). The first step of beer production was malting: soaking and germination could be carried out in the hole-bottomed vessel (*namzītu*). Next, the germinated and dried malt was milled on a saddle quern, which proved to be better suited for the task than mortars. The last steps included mashing and fermentation in a big jar set in the ground.

The vessel with a pierced base found in the basin deposit in Locus 1 at Tell Djassa el-Gharbi [see Fig. 12] could be a significantly smaller and earlier version (about a thousand years older than the Late Bronze Age specimens mentioned above) of a soaking and germination vessel. It may have been used for small-scale beer production (cold mashing process), like the hole-bottomed vessels from Late Bronze Age houses at Tell Bazi (Zarnkow, Otto, and Einwag 2011: 51–52), or for preparing some other kind of food or commodity. The thick layer of white plaster found on the jar suggests that it may have been attached to the inlet channel of the main basin or to one of the basins themselves.<sup>13</sup> Waste water from the jar could have been strained through mats and drained into the basin.<sup>14</sup>

13 See Reichel 2011: Fig. 4 for an example of a vessel with a hole in the base fixed above a (drain) channel from Hamoukar in northeastern Syria.

14 See Pfälzner 2001: 168 for a similar interpretation of a basin as a receptacle (Tell Melebiye).



Locus 1 at Tell Djassa el-Gharbi also featured a large storage jar set in the ground adjacent to the installation in its third phase of use [see *Figs 7–9, 15*]. It could have served as a mashing and fermentation vessel in the last stage of the domestic brewing process as reconstructed at Tell Bazi.

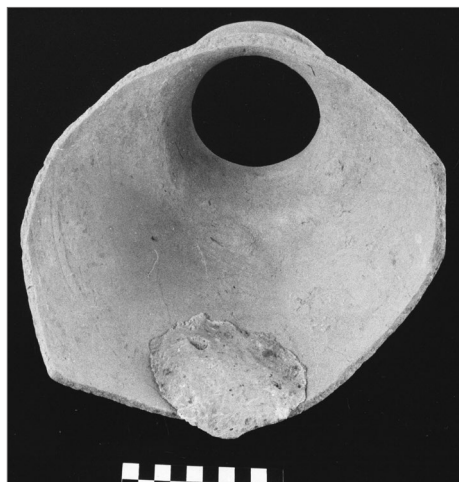


Fig. 14. Plaster plug in one of the globular vessels from the deposit [see *Fig. 13:B*] (PCMA UW | photo P. Ciepielewski)

Another component of the Locus 1 pottery deposit indicating beer production and/or consumption are two double-mouthed pots found in the basin [*Fig. 16*].<sup>15</sup> A suggestion that this type of jar might have been used for beer drinking has been proposed on the basis of a seal impression from Tell Brak with a banquet scene possibly depicting such a vessel (Oates 2001: 181, *Fig. 212*). A seal from Khafajeh, dated to the Early Dynastic period, features

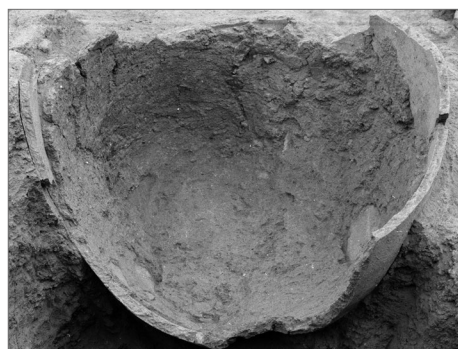


Fig. 15. Remains of a big storage jar adjacent to the last (third) phase of the Locus 1 basin installation (PCMA UW | photo P. Ciepielewski)

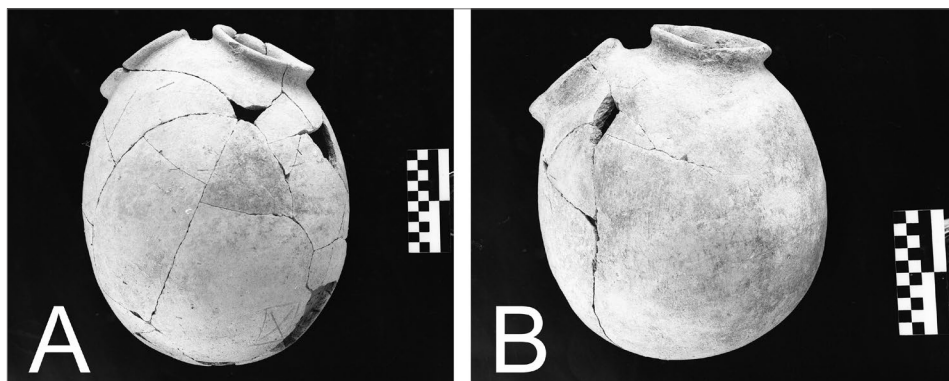


Fig. 16. Two double-mouthed jars found in the Locus 1 pottery deposit (PCMA UW | photo P. Ciepielewski)

<sup>15</sup> Drawings of these vessels and a photo of one of them were already published by Lawecka (2006: *Fig. 30*) and Reiche (2011: *Fig. 39*).

a similar scene in which the seated figures also drink with straws from what might have been a double-mouthed pot (object Registration No. A11464, Institute for the Study of Ancient Cultures, University of Chicago; <https://isac-idb.uchicago.edu/id/61722c88-6efd-4b76-a98f-8bd9acf7b43a>). Vessels of the kind were found at Khafajeh during the Oriental Institute expedition in the Diyala region (e.g. Delougaz 1952: Pl. 98:q).<sup>16</sup> Unfortunately, no residue analysis was done on any of the vessels to confirm these speculations.

As mentioned above, the basin from the border between Sectors A and B was also equipped with an inlet channel [see *Figs 4, 6*], and a massive saddle quern was found next to it [see *Figs 4, 5*]. Apart from grinding flour, this quern could have also been used for grinding the dried malt (see above) necessary for the next stage of the domestic brewing process: mashing and fermentation in big jars. Thus, this installation might have been used in beer brewing or management of some other liquid, as suggested also by the presence of a waterproof bitumen floor adjacent to the basin [see *Fig. 4*]. However, it differs significantly in shape and depth from the installation in Locus 1.

Another possible function of the Locus 1 installation, suggested by the two vessels with holes in their midsections [see *Figs 13, 14*], could be the production of seed oil — a diverse commodity group of tremendous im-

portance and versatility in the ancient Near East.<sup>17</sup> These jars could have been used at the stage of separating oil from water, similarly to vessels with holes in their bodies found at Tell Miqne, Israel, and dated to the 7th century BC (Gitin 1989: 32, 39). Although the installations and vessels from this site are much later and were used for olive oil production, the same principles of separating oil from water apply in the production of seed oils. After the separation of liquids, the unplugged holes could be used for draining the oil from the jar's upper section (Gitin 1989: 32, 39; Eitam 1996: 174; Curtis 2001: 232). At Tell Djassa el-Gharbi, in order to avoid any undesirable spillage, the waste water from the separation process could flow into the basin in Locus 1, perhaps via the inlet channel. Unfortunately, these vessels were also not subjected to residue analysis.

In terms of the location of the modification, the closest analogy to the globular jars with holes in their midsections from Tell Djassa el-Gharbi is a jar with a small hole in the upper section of its body found in the Late Bronze Age Tell Sabi Abyad (Duistermaat 2007: Fig. IV.76.a). The same site also yielded another vessel with a hole that had been plugged with plaster in a similar fashion to the aforementioned specimen recovered from the deposit at Tell Djassa el-Gharbi, as well as a jar with a spout modified by a plaster plug (Duistermaat 2007: Fig. IV.82.c).

<sup>16</sup> For analogies dating to the EJZ III period from northeastern Syria, see Smogorzewska 2019: 136.

<sup>17</sup> See Charles 1985: 53–54 for a comprehensive, but probably not exhaustive, list of seed oil uses.

## CONCLUSIONS

A wide variety of white-plastered basins was uncovered at Tell Djassa el-Gharbi, and similar installations have also been documented on a number of other contemporary northeastern Syrian sites. They can be divided into several categories based on their size, association with other installations/features, and possible functions.

Some of them could have been used for dough kneading/mixing (e.g. Locus 31, Sector N installation), others for collecting ground flour or managing liquids (e.g. Sector A/B installation). Sometimes their functions are harder to establish — the basins could have had multiple purposes, as was probably the case with the installation on the border between Sectors A and B. Presumably, most basins

served a variety of purposes in everyday household activities that are not easily traceable in the archaeological record.

The installation from Locus 1 in Sector K stands out from other white-plastered basins in northeastern Syria. Its morphology and the characteristics of the pottery deposit found inside it suggest distinctive and specialized functions. It could have been used for small-scale brewing (cold mashing process) or seed oil production, but unfortunately these hypotheses cannot be confirmed, as no residue analyses have been conducted on any of the finds. This installation was in all probability multipurpose, like most white-plastered basins at Tell Djassa el-Gharbi and other sites in the region.

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# Tell el-Murra (Northeastern Nile Delta Survey): Research in 2018 and 2022



**Abstract:** Work in the 2018 and 2022 archaeological seasons at the site of Tell el-Murra, located in the northeastern Nile Delta, continued in two areas: the settlement (Trench T5), and the cemetery (Trench S3). The research yielded valuable information on the appearance and function of the settlement, whose origins date back to the 4th millennium BC. It undoubtedly flourished during the Early Dynastic period and in the beginning of the Old Kingdom. This is evidenced by numerous remains of utility and storage buildings, in which a large number of fragments of ceramic vessels, as well as stone and flint objects for grain processing and breadmaking have been discovered. An integral part of the settlement was the cemetery, where the deceased were buried in simple pits and cavity graves, as well as in more elaborate built-up structures.

**Keywords:** Nile Delta, Tell el-Murra, Early Dynastic, Old Kingdom

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## INTRODUCTION

Tell el-Murra is located in the northeastern part of the Nile Delta, in a settlement cluster stretching between the middle and lower courses of the ancient Mendesian and Pelusiac Nile branches (Małecka-Drozd 2021: Fig. 1, Table 1). It is one of a group of sites that provide essential information for reconstructing and understanding the processes taking place in the Nile Delta area at the

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time of the formation of the Egyptian state, i.e., during the late 4th and early 3rd millennium BC (van den Brink 1992; 1993; Köhler 2008; Chłodnicki, Ciałowicz, and Mączyńska 2012; Midant-Reynes and Buchez 2014; Ciałowicz 2018b). The discoveries at Tell el-Murra to date have allowed a pool of data to be collected, making it possible to outline the development of the settlement and answer important questions concerning the history of settlement in the eastern Delta area (Jucha 2014; 2016; 2018; 2020).

The site was identified in the 1980s by a team from the University of Amsterdam (van den Brink et al. 1989). Since 2008, it has been an object of research conducted by the Jagiellonian University and led by Mariusz Jucha (2009; 2010; 2011). The first sondage at Tell el-Murra was dug in 2010 (Jucha et al. 2013; Jucha, Bąk-Pryc, and Czarnowicz 2014), and from 2012 the project was transformed into full-scale excavations (Jucha, Bąk-Pryc, and Małecka-Drozd 2015; Jucha et al. 2016; 2017; 2018). Past research led to the establishment of a general chronology of the site and to distinguishing two main zones within the area under investigation.

Like other neighboring settlements, Tell el-Murra was occupied from the time of the Lower Egyptian Culture, more precisely its later phase dating from about 3500 BC. After a possible hiatus in the Naqada IID2/IIIA1 period, which may have been caused by a catastrophic Nile flood at the end of the Lower Egyptian Culture (Jucha and Bąk-Pryc 2016: 100–101; Bąk-Pryc 2018: 49–51; Jucha et al. 2018: 151–152), the site was reoccupied by people associated with the southern-derived Naqada culture, more specifically

its later phase, Naqada III (Jucha 2014; 2016). The settlement they inhabited survived through the 3rd millennium BC, in contrast to many other sites (Jucha 2016; Małecka-Drozd 2021). The latest traces of activity at the settlement date to the end of the Old Kingdom, i.e. the time of the Sixth Dynasty, about 2200 BC.

The site was divided into two main areas occupying the northeastern and the southwestern parts of the tell. This division was probably related to natural conditions, i.e. the original extent of land protruding above the level of annual flooding. Initially, the entire accessible area was presumably covered by settlement, and no traces of a Lower Egyptian cemetery have been found to date. The structures dated to this earliest period have been identified in parts of the tell located in the southwest (Trench S3B) (Jucha et al. 2016: 100–101; Bąk-Pryc 2018: 49–51; Jucha et al. 2018: 151–152) and southeast (Trench S4). From at least the Early Dynastic (Naqada IIIB) period, the southwestern part of the site was used as a cemetery, but proto-Dynastic and Early Dynastic settlement structures were also identified on the northern and western peripheries of the burial ground. The residential and utility area was located in the northeastern part of the site, within Trench T5, dating at least from the Early Dynastic period. At the beginning of the Old Kingdom, the settlement area at Tell el-Murra was restricted to the northern part of the tell (Jucha et al. 2016: 101). To date, however, no cemetery from this period has been identified.

During the 2018 and 2022 excavation seasons, work on the site continued within Trenches T5 and S3. The main objec-

tives of the research in Trench T5 were to reach the lower layers associated with the buildings of the second part of the Early Dynastic period, and to identify the older structures below. Within Trench S3,

work focused on the exploration of graves whose outlines had been uncovered in previous seasons and on the investigation of the layers below the graves to identify older phases of settlement at the site.

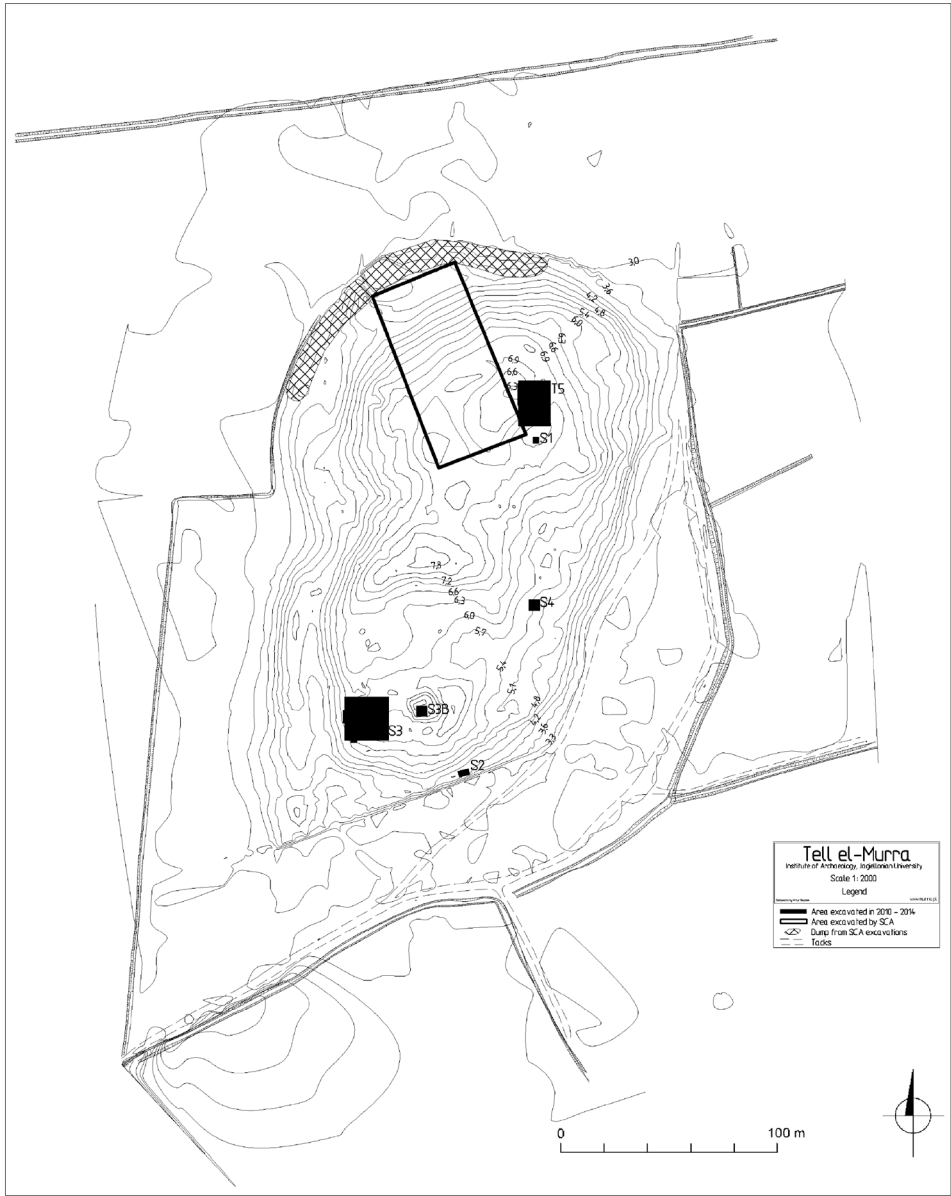


Fig. 1. Plan of the site (Drawing A. Buszek)

## TRENCH T5

Trench T5, located in the northeastern part of the tell [Fig. 1], was only explored during the 2018 season. The division of the excavation into northern and southern parts of the trench, initiated during the 2015 season (Jucha et al. 2017: 138ff; 2018: 156ff), was retained. Most of the work was undertaken in the northern part of the trench (Are R7, Squares S7AC, southern ends of Squares R6CD and S6C), where settlement remains were excavated from Level 32 (altitude 4.50 m) to Level 36 (altitude 4.10 m). The archaeological material confirmed the chronology of the structures revealed there as Early Dynastic, i.e. the later part of the period, or stage IIIC2-D of the Naqada culture (Jucha et al. 2017: 138–142; 2018: 156–163; see below). The southern part of the trench (Are R8, Squares S8AC) was explored to a more limited extent, from Level 23 (altitude 5.40 m) to Level 25 (altitude 5.20 m).

The work carried out in the northern part of the excavations helped to answer some questions related to the phases of use of the settlement in the second half of the Early Dynastic period. However, the detailed relationships between individual buildings and even rooms within them are still unclear. Due to intensive activity within most of them and the resulting complexity of the archaeological record, detailed stratigraphic analysis and studies on different categories of finds are still in progress (see notes on pottery, flints, and paleobotany in this paper). For this reason, the interpretations presented herein should be regarded as preliminary.

At this research stage, the existence of at least three phases of use, divided into a still unspecified number of shorter sub-phases, can be assumed. The youngest phase essentially comprises the remains exposed up to Level L28, and it has already been described in previous reports (Jucha et al. 2016: 111–113; 2017: 139–142; 2018: 157–159). Structures attributed to this phase were also exposed during the 2018 season in the southern part of Trench T5 [Fig. 2]. Lower down, traces were recorded of the deliberate filling of some of the pre-existing rooms with rubble in order to level them and to rearrange other compartments. Levels associated with this phase of use were partly exposed during the 2017 season and early in the 2018 season, as far as Level L33. Finally, on Levels L33–L35, explored during the 2018 season, the floor levels of a large number of rooms were exposed [Fig. 3]. The outlines of structures visible partly on Level L35 and in the ceiling of Level L36, the last one exposed in 2018, suggest that there may have been a change in the organization of buildings between this and the still older phases of settlement, at least in the central and western zones of the northern part of Trench T5.

After breaking through the layers of brick rubble deposited in some of the rooms in the northern part of the excavated area, it became apparent that some of the furnishings of the investigated buildings were preserved *in situ*. This particularly concerned ceramics and some small objects [Figs 4, 5]. In the western zone, the layout of the rooms did not change significantly, although the con-

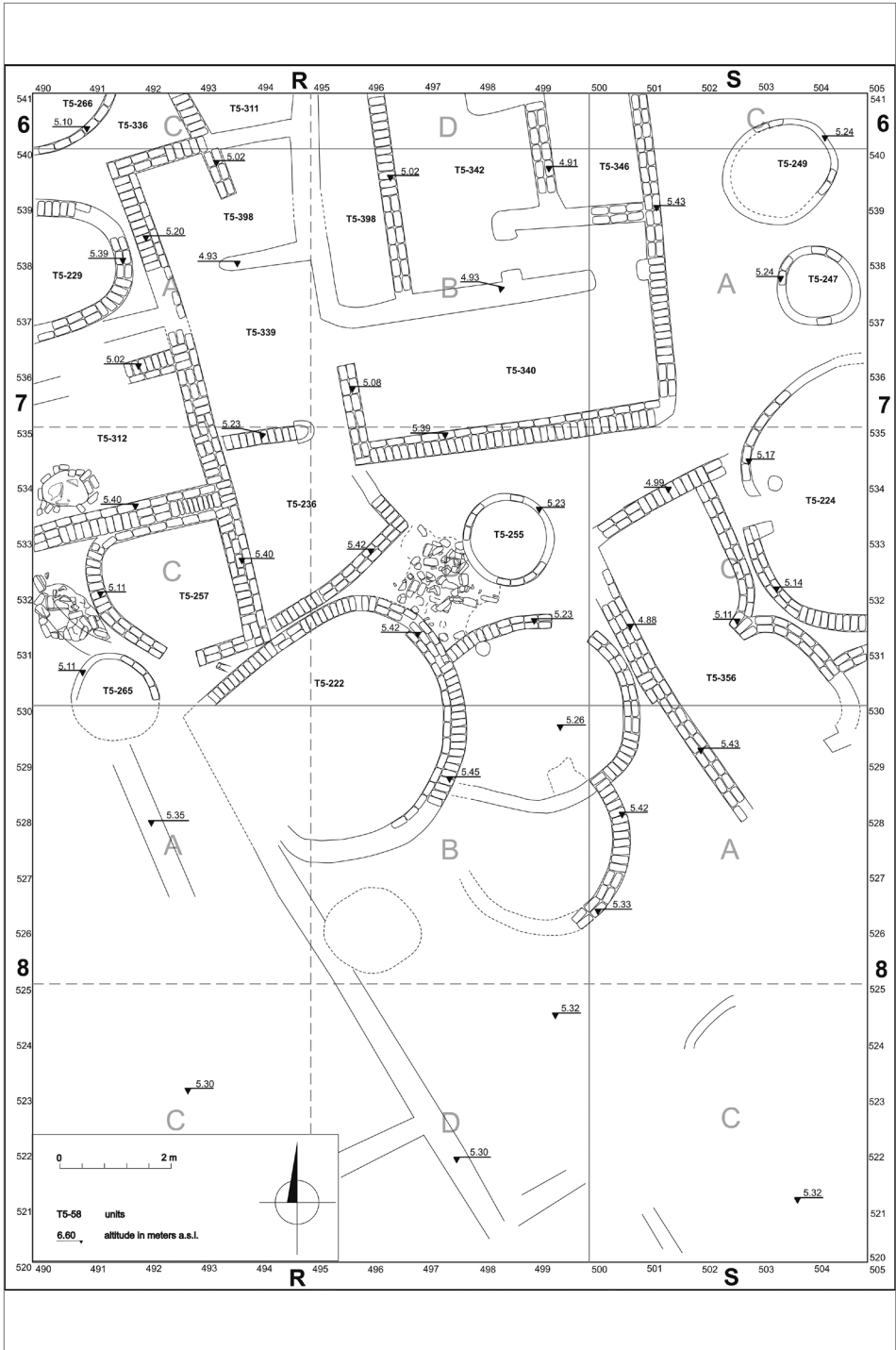


Fig. 2. Plan of Trench T5 (Drawing N. Małeck-Drozd)



nection between this part of the complex and the Central Unit became more pronounced through a series of small compartments in the north and an arched wall in the southern part [see *Fig. 3*]. The central part of this zone of the complex is unfortunately poorly preserved due to a large robber trench (over 2 m × 3 m) that was dug in this location during our absence between the 2017 and 2018 seasons. The most significant changes took place in the southernmost room in this zone. On the site of an earlier silo [cf. *Fig. 2*], a rectangular room was built, and in it were the remains of at least two vats: one was still *in situ*, and fragments of the other were found nearby [see *Fig. 4a*]. Both vats were originally positioned along the southern wall of the room and possibly embedded in a floor level. A small bowl and a flint knife were found next to them.

Fragments of bowls and beer jars were also found in smaller compartments to the north, but were less well preserved.

A relatively well-preserved floor level was also identified within the Central Unit [see *Figs 3, 4b*]. The latter designation refers to a zone recognized within residential houses of the Old Kingdom, especially within the Heit el-Ghurab settlement at Giza (Lehner, Kamel, and Tavares 2009: 17, *Figs 8–9*), but also at other sites (Moeller 2016: 192–213, *Figs 6.2a–6.2b*). However, in light of the findings at Tell el-Murra to date, the residential function of the Central Unit seems unlikely. In one of the rooms open to the compartments located in the western part of the excavated area, a large cluster of ceramic nails was found [see *Figs 5, 6*]. Their purpose is still unclear, but finds from other sites (Tei-



Fig. 3. Architectural structures of Trench T5. Later Early Dynastic period (Photo E. Kuciewicz)

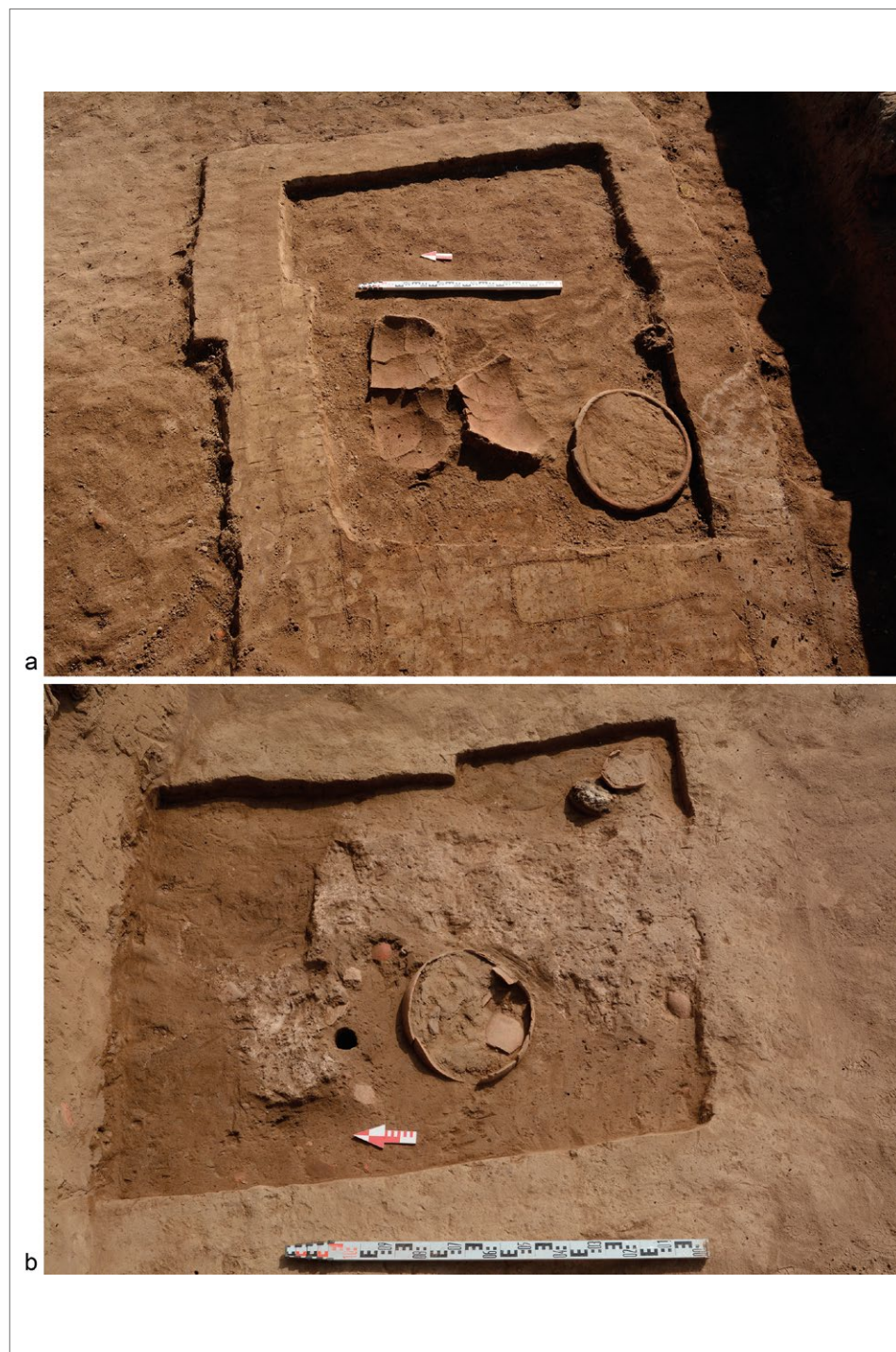


Fig. 4. Early Dynastic floor levels with pots found *in situ* in Trench T5 (Photos E. Kuciewicz)

tge 1997: 232ff; Chłodnicki 2012a: 30–31, Fig. 23; 2012b: 111, Fig. 11) allow them to be linked to intensive economic activity. One of the possible explanations of their presence may be related to salt production (Wilde and Behnert 2002). In another room, located in the eastern part of the building, a large bowl, partly embedded in the floor, was identified alongside a number of other, fragmented vessels [see Fig. 4b]. All of these findings testify to some form of economic activity, perhaps food preparation. In addition, at the time of the deposition of the items described above, or only slightly earlier, the Central Unit had an eastern extension that could be accessed from a room or courtyard located in the southern part of the complex. However, it appears to have been demolished rather quickly and the passage was blocked. Later, the area was built over with arched walls added directly to the Central Unit, or freestanding, circular silos [cf. Fig. 2].

Buildings located in the southeastern zone of this part of the excavation did not undergo any significant changes, while the space between them and the rest of the complex clearly increased again. The irregular room to the west of the oval structure turned out to be more regular in its lower levels, and further exploration confirmed its primary division into at least two rooms. After removing a layer of brick rubble, the northern room revealed a cluster of broken vessels and bones. As for the oval room that extended further east, below the eastern section of the trench, it can be assumed that it was one of the earliest structures in this phase. The possible floor level of the room, together with passages

leading to the north and west, as well as the northern extension, had already been identified slightly below the level of floors exposed in the Central Unit. At the time when these doorways were used, the rooms to the west of the oval structure were not yet erected. An alternative explanation is the existence of a slope in this part of the excavated area, meaning that the ground on which the Central Unit stood was located at a higher level. The most significant find from this building was a clay jar stopper with seal impressions, found in the southern room of the structure. In the northern compartment, a single human mandible was found among the fragments of pottery (mainly bread molds) and fired bricks. The context of the find suggests that it was isolated and not indicative of burials in this part of the settlement.

In the southern part of Trench T5, further walls connected with the structures to the north were exposed during the 2018 season. These findings allowed the reconstruction of the youngest development phase dated to the Early Dynastic period for almost the entire area of Trench T5 [see Fig. 2]. These were primarily curvilinear structures located in the central part of the study area. At this stage of excavations, three interconnected rooms could be identified. It is likely that they were originally incorporated into the rectangular space created between the long wall oriented to the northwest, located to the west of the structures mentioned above, and the irregular rooms to the east, already discussed in a previous paper (Jucha et al. 2018: 158–159). Due to heavy damage and the mixed character of the southernmost part of the excavation, access to at least one of these rooms



was only possible from the north. It is uncertain what the southern surroundings of these structures looked like. The purpose of the curved and oval structures is not entirely clear, and their function as granaries is only one of several possibilities (cf. Malecka-Drozd and Kazimierczak 2021). The western zone (Squares R8AC) was presumably occupied by some kind of open space, perhaps a courtyard, although fragments of masonry of undetermined purpose were found there as well. The buildings identified in the southern part of Trench T5, as well as those located on the southeastern fringes of the northern part of the trench, were probably part of a single building complex, as shown by their uniform orientation and the interconnectedness of the individual structures.

The repertoire of vessels derived from both parts of Trench T5 comprises a narrow range of forms, which indicates mainly production activities in the discussed area. Among them, the most numerous are pieces of bread molds [Fig. 7:1]. They represent specimens slightly shallower in shape and with a bigger rim diameter than the Old Kingdom forms. Some of them have slightly thickened inner parts of the rims, hinting at the beginnings of the internal ledge type. Fragments with potmarks were noted as well. The bread molds were accompanied by large vats [Fig. 7:2] and big bowls, which together constituted a set designed presumably for bread-baking. However, big, open forms could also have been connected with beer production, an activity also indicated by frequently represented



Fig. 5. Cluster of ceramic nails (Photo E. Kuciewicz)

beer jars. The most dominant among them were examples with distinguished shoulders, simple or slightly thickened rims, rounded bases and scraped outer surfaces [Fig. 7:3–4]. However, slender specimens with narrow shoulders, pointed or rounded bases, and fingerprints on the surfaces were also still present in the layers described above. A few examples of the spouted bowl [Fig. 7:10], probably used for pouring beer into jars or for measuring and transferring grain, were also found in the pottery assemblage; there were also sporadic finds of other storage jars, including medium-sized jars with smoothed surfaces and good-quality large jars with very broad shoulders. In addition, worth noting are specimens of a narrow, torpedo-shaped wine jar with a simple appliqué band. They represented

the later types in the sequence of this vessel, occurring towards the end of the Naqada III period. A set of vessels for serving purposes, i.e., used for presentation, preparation and eating food, were represented by coated and polished or burnished bowls with convex sides and differently shaped rims, such as simple, curved inner and thickened outer rims [Fig. 7:3–7], red-burnished plates [Fig. 7:8], and shallow plates with surfaces only slightly smoothed.

The set of vessels is also complemented by several very small bowls of different shapes. The majority of the described forms are not good chronological markers, however, because they were in use over quite a long period and, therefore, occurred over a broad time span. However, some of the vessel types — especially bread molds and beer jars — let us determine the chronology slightly more precisely. This regards, in particular, layers explored within the northern part of Trench T5, which were dated, based on the pottery, to the Naqada IIIC2/D phase (the end of the Early Dynastic period). In turn, analysis of the assemblage from the levels explored in the southern part of Trench T5 indicate that in this area we are probably dealing with a transitional phase between Naqada IIIC2/D and the beginning of the Old Kingdom. The majority of the forms occurring in this zone (such as bread molds and beer jars with scraped surfaces, but also narrow, torpedo-shaped wine jars) are connected with the end of the Early Dynastic period. A few Old Kingdom forms, such as beer jars with wavy surfaces and Meidum bowls, are still present, although in decidedly smaller quantities.



Fig. 6. Ceramic nails. Early Dynastic period (Photo E. Kuciewicz)

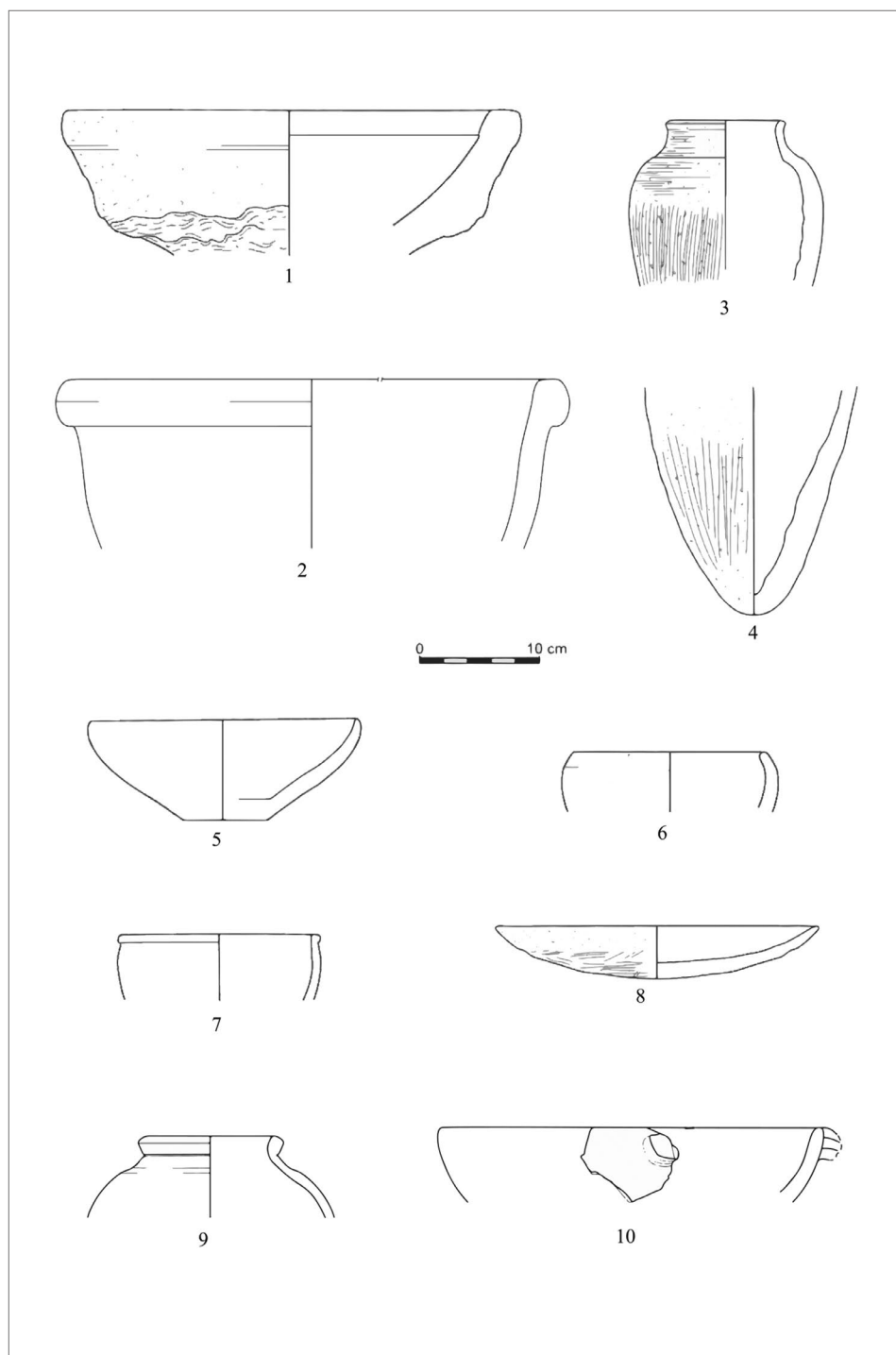


Fig. 7. Repertoire of vessels from Trench T5 (Drawing M. Kazimierzak, digitizing U. Bąk)



In Trench T5, 601 flint artifacts were discovered. These finds can be divided into two main chronological groups. The first one comprises 334 artifacts in an inventory related to the Early Dynastic layers. It consists of 257 tools, 40 pieces of debitage, and 37 non-characteristic forms. The domination of tools is clearly visible. This is typical for inventories dated to the Early Dynastic and Old Kingdom periods, when the vast majority of blanks and tools were not produced on site, but were imported as finished items from specialized workshops (Kobusiewicz 2015: 10–11). The most numerous category of Early Dynastic tools obtained from Trench T5 is that of blade segments: sickle blades (29% of specimens) and blade inserts without sickle gloss (58%). The first type was characterized by bi-truncated ends and denticulated retouching of the working edge with intense sickle gloss. The segments of the second type are similar in shape and form, having truncated short ends and long edges with continuous retouching instead of denticulation and no visible sickle gloss. Other types of tools are far less numerous. Among them, one should mention retouched blades and flakes, flint pounders and grinders, fragments of bifacial knives, so-called razor blades, scrapers, perforators, and combined tools. Early Dynastic



Fig. 8. Flint knives from Trench T5 (Photo K. Lajs-Klose)

bifacial knives found in the settlement represent features typical of knives dated to this period: a hooked handle, curved blade, and concave back [Fig. 8].

The so-called razor blades are akin to the finds known from other sites dated to the same period. These tools were made on massive blades with trapezoidal cross-section, and the shorter edges were formed by retouching the scraping edge in the upper part and truncation in the lower part of the specimen. A less regular retouching on the longer edges is often visible as well [Fig. 9, left]. The Old Kingdom flint inventory comprised 200 artifacts. Similarly to the previous period, it contains mostly tools — in total 142 specimens; also 51 forms from the debitage category were identified, and seven non-characteristic artifacts. Among the tools, sickle blades (34%) and blade inserts (50%) were again the most numerous. Other Old Kingdom tools included retouched blades and flakes, pounders and grinders, possible razor blades [Fig. 9, right], scrapers, blade knives and less numerous other forms. In terms of typology and technology, the Old Kingdom



Fig. 9. Razor blades from Trench T5 (Photo K. Lajs-Klose)

inventory constituted a continuation of the assemblage of the Early Dynastic period. However, there was a certain decline in terms of standardization and general

quality of the tools. The remaining 66 flint artifacts came from uncertain or disturbed contexts and were therefore excluded from the analysis.

## TRENCH S3

Research in the Early Dynastic cemetery (Trench S3) in the southwestern part of the tell was carried out in the 2018 and 2022 seasons [Fig. 10]. In 2018, the L18 surface level (altitude 4.50 m) of the entire Are J22 was cleared. In the central part,

almost at the junction of all squares, the clearance revealed a fragment of a rim of a ceramic vessel located inside a structure with a regular, nearly rectangular shape and northeast/southwest orientation. Within this vessel, remnants of an

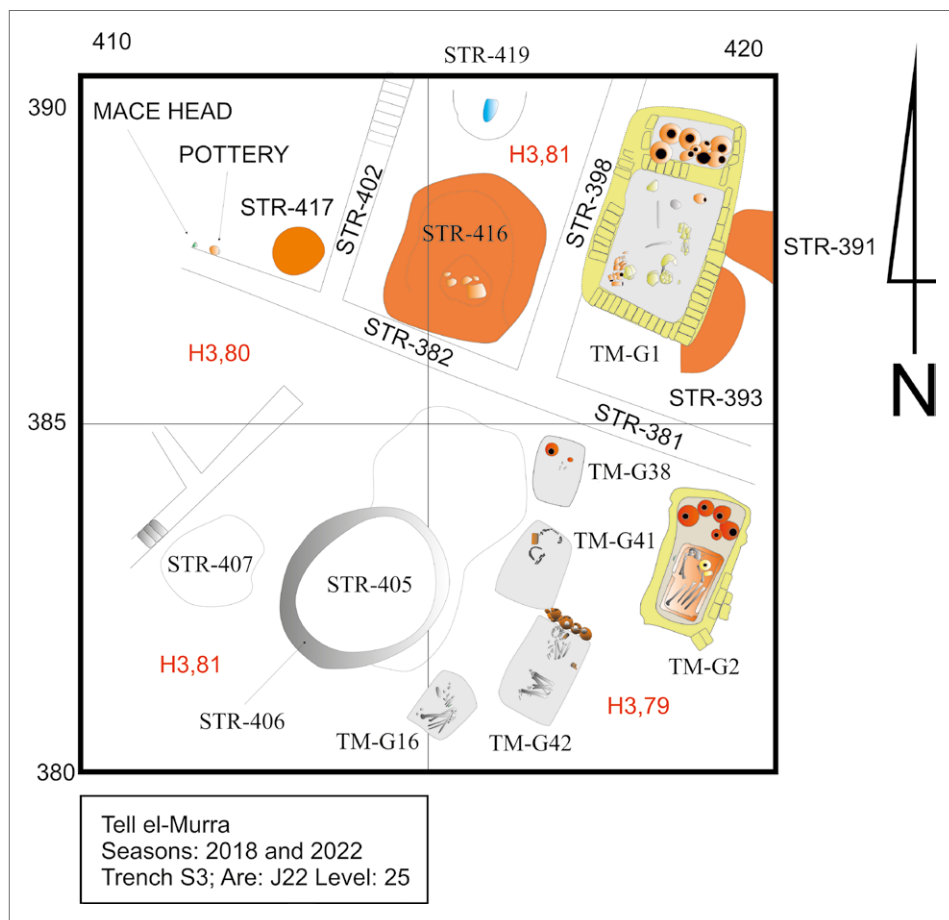


Fig. 10. Plan of Trench S3 during the 2018 and 2022 seasons (Drawing G. Bąk-Pryc)



Fig. 11. Pottery from Trench S3 (Photo E. Kuciewicz)

organic mat were preserved in the form of bright, regular and clearly visible precipitates. Further research permitted to identify the structure as Grave 41. It was excavated in layers 5 cm thick, completely exposing the remains of the aforementioned mat, which had originally covered the body of the deceased. The body had been deposited in a shallow, rectangular pit, in a supine position on the left side and with the head to the northwest. At the time of discovery, the state of preservation of the bones was very poor. All that remained was a negative area and a small cluster of skull bones. The equipment deposited with the deceased included a very small, low cylindrical jar [Fig. 11:5]. In addition, dozens of small faience beads were discovered in the area of the head and chest.

After clearing the L19 surface level throughout the excavated area, the outlines of a room with only two visible walls were observed in Square J22B: Wall 231 (distinguished in the 2011 season as Structure 19) was oriented northeast/southwest, and Wall 381 northwest/southeast. In the western part of Square J22A, in turn, a small stretch of wall (382) with a northwest/southeast orientation and a width of one brick was discovered. This wall disappeared in the eastern part of the trench and continued westward and into the main part of the study area. Characteristically, the structures were made of silt bricks. The entirety of these architectural structures was surrounded by sedimentary/cultural layers characterized by loose or cohesive texture, light in color, with numerous traces of burning,



Fig. 12. Grave 42 (Photo G. Bąk-Pryc)



which served as evidence of hearths. In the southern part of the surveyed area was a fairly regular structure, quasi-rectangular in shape and resembling a grave superstructure. Its fill was a strongly cohesive and light-colored layer with silty precipitates (378). A part of this structure continued southward, reaching the main profile of Are J22.

After excavation to Level L19 (altitude 4.40 m), the exposed surface was cleared throughout the entire area under study. In the southeastern part (Square D), the outlines of the rims of three pottery vessels were exposed. On the northern side, they were adjacent to a regular structure with a light-colored and cohesive fill, with silty inclusions. Further excavation permitted to identify this feature as Grave 42 [Fig. 12]. The body of the deceased was deposited in a rectangular pit with a northeast/southwest orientation, in a supine position, on the left side, and covered with an organic mat. The state of preservation of the bones at the time of discovery was in part very poor, although the lower and upper limbs

and skull of the deceased were visible. The funerary equipment consisted of six pottery vessels. Among them were two medium-sized ovoid jars with marked but relatively narrow shoulders and slightly smoothed surfaces [Fig. 11:1]. Both were marked with symbols. One of the vessels had a mark on the rim, while the other bore potmarks on the shoulders. Two other vessels of rough ware were small, broad-shouldered jars with a concave lower part of the body narrowing towards a flat base [Fig. 11:2]. One of these jars had a potmark engraved on the base. All of the vessels were arranged in a row and probably stood outside the pit of Grave 42, directly near its northern border. Excavation of the grave yielded two other vessels placed inside: a fragment of a bread mold [Fig. 11:3] and a very small, low cylindrical jar. A diagnostic rim fragment of a bread mold was found in the right hand of the deceased, which was placed directly opposite his face and mouth. In addition, a very small, low cylindrical jar [Fig. 11:4] was discovered next to the eastern wall of the grave pit. Residues of a white mat visible on the surface of the vessel clearly suggest that the item was covered with this kind of organic material, which was probably also placed over the body of the deceased and the other grave goods inside the pit. Unfortunately, the vessel types discovered in the described graves are not chronological markers of specific phases of the Naqada III period, as they occur over a broad time span covering the First Dynasty. For this reason, it is difficult to date Graves 41 and 42 with precision. However, these burials may have been deposited during the Naqada IIIC period. Thus, they have been assigned to the third chronological group



Fig. 13. Flint knife from Trench S3 (Photo K. Lajs-Klose)

of graves distinguished at the cemetery in Tell el-Murra (Kazimierczak 2021). After the exploration of these graves, further work was carried out in the entire study area, distinguishing sedimentary layers of light color and cohesive texture, with silty inclusions and numerous traces of burning.

During excavations in 2018, 635 flint artifacts were discovered (Trenches T5 and S3), of which 34 were found in the cemetery (S3). This inventory can be dated to the Early Dynastic period. It includes 16 tools, 12 pieces of a debitage, and six non-characteristic finds fitting into the category of chips and chunks. In the category of tools, retouched flakes and blades, as well as two types of inserts for compound tools described above were the most numerous. In addition to inserts, two fragments of blade knives and

one flint pounder were also discovered. The blade knives, contrary to bifacial ones, were retouched only on the edges. The best-preserved specimen has one edge with semi-steep retouching on the dorsal and opposite side, and multiplied flat retouching on the ventral side [Fig. 13]. Similar knives were found, for example, in the Early Dynastic layers in Tell el-Farkha (Kabaciński 2012: 324, Fig. 8: 2, 3). Work in the 2018 season in Trench S3 was completed at Level L22 (altitude 4.10 m).

After a hiatus due to the Covid-19 pandemic, research resumed in 2022 with the clearing of the entire Are J22 at Level L22 (altitude 4.10 m), uncovering structures that had not been investigated in the previous season. In the northern part, the clearly visible outline of the northeast/southwest oriented Wall 382 abutted the corner of the room in which



Fig. 14. Fireplace in Trench S3 (Photo G. Bąk-Pryc)



Grave G1 (explored during the first research seasons in 2010) was constructed at a later date. The bottom parts of this grave's burial chamber walls were still visible, and its southeast corner partly cut a burned layer and fireplace (393), offering an indication of the stratigraphic and chronological relationship between the two features. Grave 1 was clearly later, and it was dug into older structures and strata of sedimentary character. In the central part of Square J22A, a sand brick wall was visible (Structure 411). On the north side, it met the aforementioned Wall 382, forming a corner of perhaps a larger room. Right next to it, on the inside, another fireplace (417) of relatively small size was discovered. It was clearly visible on discovery at Level 25 (altitude 3.80 m). Its shape was very regular and nearly circular. The fill of this fireplace

consisted of typical burnt layers in light, orange, white and dark colors. Inside the fireplace, on its western side, a small hole was visible. Entirely filled with silt at the time of excavation [Fig. 14], originally it might have held a ceramic vessel(?). In addition, a pottery vessel resembling a small jar was discovered to the west of this fireplace. It was found in a settlement layer (409), right next to Wall 382. An interesting observation was made in the central part of the strip between Walls 411 and the room in which the aforementioned Grave 1 was located. In the previous season, a large, ovoid structure with a silty fill had been recognized in this area. After removing a layer 10 cm thick, the fill changed from silty and highly cohesive to a more hearth-like stratum surrounded by an additional rim of light gray. It was visible particularly clearly on the northern,



Fig. 15. Settlement structures in Trench T5 (Photo G. Bąk-Pryc)

western and eastern sides of the structure in question. Isolated fragments of a large pottery vessel were exposed in the central part. The structure was at that point assigned a new inventory number, 416 [Fig. 15]. The exploration of the feature, which might be a large fireplace(?), will be continued next season. The structure was characterized by the presence of small pits with silt edges, very similar to the one discovered in Hearth 417 (see above). To the north of Structure 416, a small, circular pit with a dark brown fill was discovered. This feature partly extended into the northern profile of the trench, but its visible part was found to contain a fragment of a large grinding stone made from quartz sandstone. All of these ob-

jects and features were surrounded by a cultural layer, which yielded more than a dozen fragments of ceramic vessels, animal bones, as well as small stone and flint objects.

Interesting discoveries were made south of Wall 382, in Squares J22C and J22D. The work in the last research season began with the exploration of Structure 386, found in 2018. At the uppermost level, it was quite regular in shape, quasi-rectangular and oriented northeast/southwest. Further research led to its identification as Grave 16. The body of the deceased was deposited in contracted position, in a shallow cavity originally lined with an organic mat. The bones of the skeleton at the time of discovery were



Fig. 16. Silo in Trench S3 (Photo G. Bąk-Pryc)

very poorly preserved. The equipment left for the deceased included a fragment of a copper object—a type of spike—deposited near the hand. The skeleton itself was covered with an organic mat.

In addition, a circular structure (405) approximately 2 m in diameter and surrounded by a wall of silt bricks (406) was discovered at the junction of the southern squares (J22CD). The structure was interpreted as a silo. Fragments of similar features had already been discovered in this part of the tell at higher levels. Interestingly, the layer inside and outside the silo consisted of organic material with white discoloration. It may have constituted the remains of a chaff or threshing floor integral to this structure [Fig. 16]. A series of samples were collected for analysis during excavation. Lastly, a fragment of a narrow wall (422) with a northeast/southwest orientation was discovered in the western part of Square J22C at Level L26 (altitude 3.70 m). Its northern end terminated in the central area of this square, and the southern part continued into the section of the explored trench. All the mentioned features were embedded in a light-colored settlement and cultural layer, highly cohesive, with numerous darker-colored spots and fragments of ceramic vessels, animal bones, and stone and flint objects.

The flint inventory collected from the settlement layers of Trench S3 comprised 36 artifacts: 20 tools, six products of debitage and ten non-characteristic forms. The most numerous tools were sickle blades (35%) as well as retouched flakes and blades, blade inserts, blade knives, and a single backed piece. The

limited size of the inventory does not allow for a detailed analysis, but its character seems to fit in with the rest of the Early Dynastic inventory discovered at Tell el-Murra, and thus also with the assemblages known from other sites of this period.

The pottery assemblage collected within the probable settlement layers of Trench S3 consists of vessel types related mostly to Phase 5 (dated to Naqada IIIB-C1) distinguished at Tell el-Farkha (Ciałowicz 2018a: 7, Table 1), although some of the types also occur in the later part of Phase 4 (dated to Naqada IIIA1-B) (Ciałowicz 2018a: 7, Table 1). The repertoire of the forms is not very diverse, with only a few repeated types. They include, among others, specimens used strictly for food processing, such as bread molds. Their fragments found within the described area probably belong to rather older, shallow and wide specimens, characteristic for the earlier phases of the Naqada III period (Jacquet-Gordon 1981: 12, Fig. 1.1–4; cf. Mączyńska 2012: Figs 18.4–18.5). Fragments of bread molds are among the most frequently occurring forms in the entire collection. In addition, the analyzed material contained storage vessels. They include, among others, very tall, good-quality wine jars, such as examples with applique rope bands (cf. Köhler 1998: Taf. 60–61; Jucha 2005: Pl. 101), or specimens decorated with arches made probably with a finger in the wet clay (excess clay is visible on the upper edges of the arches) (cf. Köhler 1998: Taf. 59: 6–11; Jucha 2005: 102: 3–8). Other types of ceramic containers are medium-sized jars of good quality, with smoothed sur-



faces, as well as cylindrical jars, including an example with ornamentation presumably resembling a cord impression (Petrie 1953: Pl. IX: 48s), although the poor state of preservation of the surface does not allow for certainty. An important part of the ceramic set constitutes forms intended for serving and/or consuming food. The most common were bowls with an angular bend of the sides situated slightly below the rim or near the middle of the vessel (cf. Jucha 2005: Pls 56: 3–7, 57). Their surfaces were burnished and covered with slip. Bowls with convex sides and polished or burnished surfaces were also attested, as were examples with half-burnished outer surfaces. Apart from the abovementioned vessels, a few other forms were present but in very limited numbers. For exam-

ple, there were two almost completely preserved bag-shaped jars (cf. Sobas 2012: Fig. 2: 11, 12, 34). Several pieces of rough ware jars representing Petrie's types L30–31 (1921: Pl. XLVI) and R81, R84–86 (1921: Pls XLI–XLII) were also identified. In addition, among the finds was a single fragment with cut decoration of triangles, presumably belonging to a pot-stand. An interesting and recurrent element of the ceramic set recovered from the discussed strata includes pieces belonging perhaps to gutters or pot-stands (cf. Jucha 2021). The surfaces of their walls as well as their upper and lateral edges were smoothed. Better-preserved examples show that they had a U-shaped profile.

The fieldwork in the last season was completed at Level L27 (altitude 3.60 m).

## RESULTS OF ARCHAEOBOTANICAL RESEARCH

Work on the botanical material conducted in the 2018 and 2022 seasons focused on selected samples obtained from structures within the settlement (Trench T5), discovered and explored during and prior to the season. Soil samples of 2–3 L were taken and subjected to dry sieving using sieves with 0.5 mm and 1 mm mesh. The exception was a sample from the silo area (Are R8, layers of the structure 255, 265B, and 263), which had a volume of 7 L. Thanks to access to running water, it was cleaned by prior soaking. The other samples were cleaned by sifting the dried material through sieves with a mesh size of 0.1 mm and 0.5 mm, or presoaked and sieved. The material was examined under a standard portable stereoscopic magnifier with a magnification of  $\times 10$  in the

eyepiece and  $\times 20$  in the microscopic device. Seeds were the most abundant group of plant remains identified. When the samples were cleaned, a large accumulation of organic remains was observed, so they were selected for further botanical analysis. The material was documented using inventory data as well as photo and drawing documentation of the seeds. The assemblage was then compared with published data from other archaeobotanical collections from the Nile Delta region (Kubiak-Martens 2012: 431–432; de Vartavan, Arakelyan, and Amorós 2010: 153) and the Middle East. Dominant in the studied material were edible grasses and weeds of cultivated plants. The species distinguished within the individual plant groups are presented below [Table 1].

Table 1. Plant species identified among the archaeobotanical remains in the 2018 and 2022 seasons

Identification	Classification	Evidence (types of remains)
Barley	<i>Hordeum vulgare</i> L. [Fig. 17]	Kernels, lateral and central husks charred
	<i>Hordeum vulgare</i> L. var. naked	Charred rachis
	<i>Hordeum vulgare</i> L. var. pleached	Charred rachis
Wheat	<i>Triticum</i> sp.	Charred grain
	<i>Triticum</i> cf. <i>dicoccon</i> L. [Fig. 18]	Charred rachis
Crop weeds	<i>Lolium perenne</i> L.	Charred grain
	<i>Lolium perenne</i> L.	Seed with preserved pituitaries charred
	<i>Lolium temulentum</i> L.	Charred grain
	<i>Lolium</i> sp.	Grains
	<i>Rumex</i> sp.	Charred seeds
	<i>Rumex crispus</i> L.	Charred seeds
	<i>Rumex dentatus</i> L.	Charred seeds
	<i>Polygonum</i> sp.	Charred seeds
	<i>Vicia</i> sp.	Charred seeds
	<i>Poaceae</i> indet.	Charred seeds
	<i>Fabaceae</i> indet.	Charred seeds

At Tell el-Murra, barley occurred in the context of storage facilities. None of the grains bore clear signs of germination around the embryo. The presence of bread molds confirms that bread was produced in the settlement. It is also likely that livestock was fed fodder consisting of barley. The remaining plants were, for the most part, cultivated weeds accompanying grain crops, so it is not surprising

that they were deposited alongside the seeds of edible grasses [Fig. 19]. The large number of forage plants may also indicate the vital role that animal husbandry played in the settlement. The preliminary analysis indicated few wheat grains. However, due to the fact that only selected samples from the entire settlement were examined, the above impression on the minor role of wheat in the daily life of

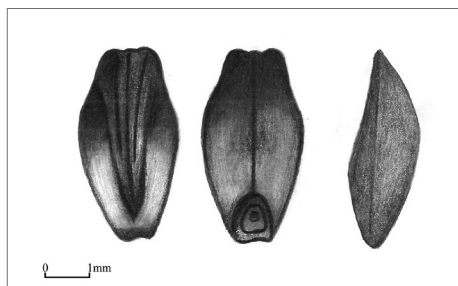


Fig. 17. *Hordeum vulgare*, Object 263 (Drawing N. Puschhaus)

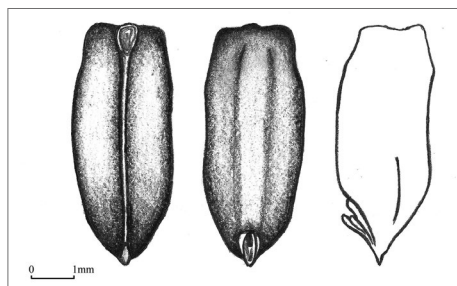


Fig. 18. Grain of *Triticum* cf. *dicoccon* Schrank (Drawing N. Puschhaus)

the inhabitants may be misleading. Therefore, as the research is in progress, the offered conclusions should be considered as preliminary in nature. Future archaeo-

botanical research will verify the data on the share of wheat in the assemblage and provide more detailed information on the botanical material at the site.

## SUMMARY

The results of research conducted in the 2018 and 2022 seasons contributed new information on the functioning and chronology of the site. Preliminary analyses permitted general observations concerning several stages in the development of the Tell el-Murra settlement.

The investigations carried out in Trench S3 enabled the examination of graves below the successive phases of settlement, associated perhaps with the reoccupation of the site immediately following the subsidence of the flood waters. Layers associated with this event have already been found in Trench S3B, and it is essential to check whether they are also present in S3. Preliminary analysis of the material from the 2022 season may indicate that we have reached settlement phases associated with a period prior to Naqada IIIC2/D (the end of the Early Dynastic period). At this moment, however, this is only a preliminary remark,

and more definitive conclusions must wait until further detailed analysis and processing of the material is completed.

The work carried out to date within Trench T5 makes it possible to link this area unequivocally to organized economic activity, dating at least to the Early Dynastic period and the beginning of the Old Kingdom. It appears that the activity that took place there was primarily concerned with the production of bread and possibly beer. This is evidenced by the large number of bread molds bearing potmarks—evidence of external control over the production—and by ceramic forms associated with the production of bread dough, such as vats and bowls. A large number of ash layers and deposits identifiable in parts of some rooms and yards, a brick installation whose form resembled a nest for a vat in which malt was produced, and silos still filled with barley complete the picture (cf. Jucha et al. 2016: 101–127; 2018; Malecka-Drozd and Kazimierzczak 2021). The shapes of the exposed architectural remains (a combination of rectangular buildings, curved walls and circular silos) and the nature of the activity taking place within it (storage and processing of agricultural produce) fit very well into the context of sites dated to this period and identified within the same settlement cluster, such as Tell el-Farkha (Chłodnicki 2012b: 110ff; Chłodnicki and Ciałowicz 2014: 127ff, Fig. 15), Tell el-Rub'a (Adams 2009: 140–156; 2020: 52–54) and Tell Gabbara



Fig. 19. Cultivated weeds accompanying grain crops (Photo N. Puschhaus)



(Rampersad 2015–2016: 83–87). The question remains who controlled the production taking place there. There are various possibilities. Were they local village overseers or communal administrators who managed payments to local farm workers? Or perhaps they were local landlords, descendants of the eastern Delta aristocracy, whose estate (*pr*) included the settlement at Tell el-Murra? Finally, is it possible that, already

in the Early Dynastic period, the site under study was part of an official institution, an estate overseen by a local residence, presumably located at or near Tell el-Murra, referred to in the sources as *hwt* (Moreno García 1999; 2013)? At present, all options are equally likely and only further research will clarify the role Tell el-Murra played in the settlement structure of the northeastern Nile Delta and Egypt as a whole.

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# Of gods and (wo)men: Two wooden figurines from Sheikh Abd el-Qurna



**Abstract:** This article discusses two wooden figurines discovered by an expedition of the Polish Centre of Mediterranean Archaeology, University of Warsaw, in tomb MMA 1152 in the area of Sheikh Abd el-Qurna, Theban necropolis. Both objects can be dated to the Dynastic phase of occupation of the site. However, in the first centuries AD, the complex was transformed into a Coptic hermitage, resulting in the decontextualization of the vast majority of Pharaonic artifacts from the tomb and its neighborhood and making the interpretation of the statuettes less straightforward than it could be assumed.

**Keywords:** Theban necropolis, tomb, figurine, nudity

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## INTRODUCTION

Excavations of the Polish Centre of Mediterranean Archaeology, University of Warsaw, launched in 2003 on a nameless hillock located in the vicinity of Sheikh Abd el-Qurna, Theban necropolis [Fig. 1], yielded two wooden figurines.<sup>1</sup> Both of them come from what can be generally described as a funerary context: they were found within the Middle-Kingdom tomb complex MMA 1152, one in the courtyard and the other in the burial shaft. However, the long history of the tomb included numerous episodes of reuse (Szapkowska 2007; Kaczanowicz 2018), as well as the transformation of MMA 1152, along with the nearby tomb MMA 1151 of similar date, into a Coptic hermitage (Górecki 2014), resulting in the

disturbance of the stratigraphy. As will be demonstrated below, although found in the tomb complex, at least one of the statuettes need not have originated from a burial, or even from the tomb itself.

The two figurines were discovered during the first decade of the 21st century. The premature demise of the director of the Polish expedition to Sheikh Abd el-Qurna, Tomasz Górecki (1951–2017), sadly complicated the process of the final publication of the project, as information regarding the context and current location of some of the artifacts uncovered during the Polish works was no longer available. Therefore, what follows is based on archival data from earlier seasons of excavations.

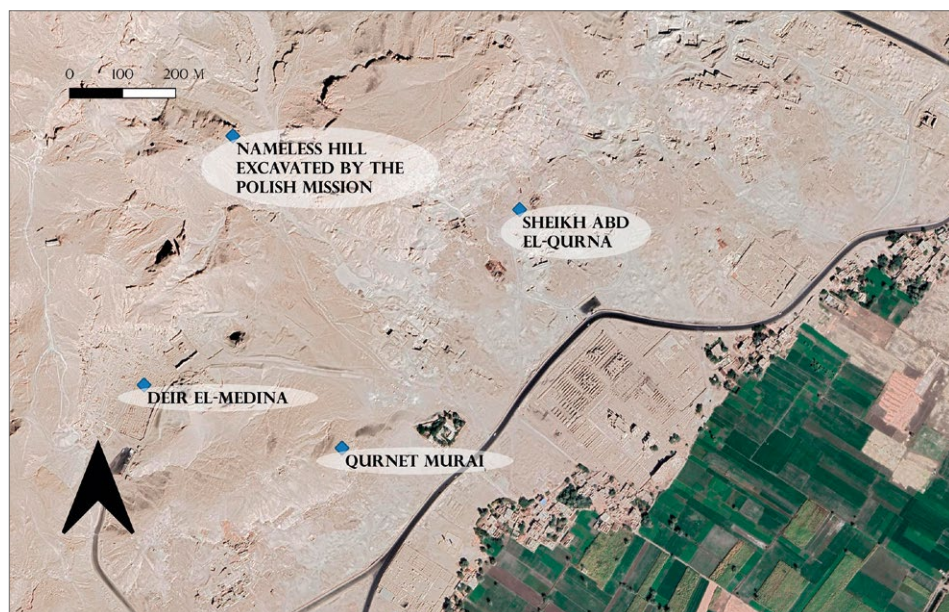


Fig. 1. Location of the site within the Theban necropolis (Google Maps | processing M. Kaczanowicz)

<sup>1</sup> For a summary of the works, see Górecki 2004 and subsequent excavation reports published in successive volumes of the *Polish Archaeology in the Mediterranean*.

## FEMALE FIGURINE

**Inv. No.** PH.W.07 [Fig. 2]

**Dimensions:** 7.4 cm (maximum height) × 1.9 cm (maximum width)

**Material:** wood

**Current location:** Carter House store-room

**Findspot:** The figurine was found in 2003 during exploration of the “kitchen” — a small space in the courtyard of MMA 1152. The statuette was discovered in the entrance area; inside the “kitchen”, a small ostrakon and a wooden hand from an anthropoid coffin were found on the same day (29.03.2003).

**Description:** The statuette is of excellent workmanship and well preserved,

although its hands and feet are missing. It is a representation of a standing nude female with arms hanging along the slender torso. The ears, lips, breasts, pubic triangle, and buttocks are marked, but the navel is not. The woman sports a kind of “ponytail”, carefully sculpted on the back side of the figurine, with a bulbous ending, its tip slightly raised. The rest of the hair seems cropped (shaven?), which is visible particularly well on the sides, above the ears.<sup>2</sup> The breasts are flattened in the upper part. The waistline is narrow, contrasting with the full hips. Traces of yellow paint are visible on the surface of the statuette. The object is uninscribed.



Fig. 2. Female figurine, front and back (PCMA UW | Photo Jakub Šliwa)

<sup>2</sup> Perhaps the hair above the forehead was left unshaven/uncropped.



## MALE FIGURINE

**Inv. No.** PH.W.39 [Fig. 3]

**Dimensions:** 20 cm (maximum height) × 2.9 cm (maximum width)

**Material:** wood

**Current location:** unknown

**Findspot:** The statuette was discovered at the bottom of the main shaft of tomb MMA 1152 in January 2009. It was found in a thick layer of rubble covering the bottom of the shaft. No exact location of the statuette was provided, but it should be stressed that the shaft's stratigraphy is practically nonexistent due to the prolonged reuse of the tomb, unpublished excavations that evidently took place at the beginning of the 20th century, as well

as the fact that the shaft remained open and unprotected for at least several decades prior to the beginning of the Polish fieldwork at the site. An investigation of the bottom of the shaft in 2009 lasted only one day and did not include any excavation, so the object most probably came from the top layer of rubble.

**Description:** This headless standing figurine of the naked individual is preserved in a much more fragmentary state than the female one. Only the right half of it remains; besides the head, also the right leg is missing below the knee. However, a diagnostic part of the statuette—a fragment of its carefully sculpted genitals—is



Fig. 3. Male figurine, front and profile (PCMA UW)

preserved, clearly indicating that it was a representation of a male and probably ithyphallic (see below). The right arm ending in a clenched fist hangs loosely along the torso. Traces of black paint in-

dicate that it once covered the legs and the front of the figure. Although less than half of the statuette is preserved, the high quality of workmanship is clearly discernible. The object is uninscribed.

## DISCUSSION

At first glance, the two figurines exhibit a number of similarities: material, high quality of manufacture, and the fact that they both represent naked individuals. Nonetheless, as will be argued below, their apparent likeness and occurrence within a single site do not mean that they were akin to one another in function.

Of the two statuettes, the female one appears to be easier to interpret and assign to a known category: a quick examination of the piece seems to suggest that this object belongs to a group of representations of women with emphasized sex characteristics, referred to as “fertility figurines”, or, in older literature, “concubines of the dead” (*concubines du mort*).<sup>3</sup> The images of nude elite women in Egyptian art are practically non-existent (Robins 1997), and the identification of the individual as a naked goddess is unlikely due to the absence of any divine attributes or gestures. On the other hand, Egyptian women of lower social strata were often depicted naked, in both two- and three-dimensional arts; clothing was an indicator of one’s status (Russmann 2001: 75). This particular figure bears

a strong resemblance to Type 1 “fertility figurines” distinguished by Geraldine Pinch in her seminal work on votive offerings to the goddess Hathor. Statuettes of Pinch’s Type 1 comprise female representations 10–20 cm in height, well-modeled, and usually nude, “with small breasts, high waists, flat stomachs and buttocks, and plump thighs” (Pinch 1993: 198). Contrary to the other types (2–6), made primarily of clay (occasionally also Egyptian faience and limestone), Type 1 figurines were manufactured from a variety of materials: stone, wood, ivory, and Egyptian faience. When made of wood, these statuettes were usually painted yellow, with details in black. The majority of Type 1 “fertility figurines” come from mortuary contexts and can be dated to the Twelfth Dynasty and the Second Intermediate Period (Pinch 1993: 198–199).

However, there is one characteristic trait of Type 1 figurines that may cast some doubt on the identification of the Qurna specimen. According to Pinch (1993: 198), the majority of Type 1 “fertility figurines” were deliberately made devoid of feet, with the legs rounded off

3 Previously, these objects were believed to represent female companions for deceased men in the afterlife. More recent studies demonstrate that the function of these statuettes—which were deposited both in male and female graves—is much more nuanced and still not adequately understood, though should not be considered simply in the light of the sexual arousal of the male tomb owner. Consequently, the term “concubine” is no longer considered appropriate (Pinch 1993: 211–225; Robins 1993: 75–76; Grajetzki 2014: 115–116; Tooley 2017; 2020).

below the knees. The lack of feet in nude female statuettes was long remarked on also by other scholars (see, for example, Desroches-Noblecourt 1953: 16). This deliberate omission was interpreted as a means of preventing the figurine from leaving the tomb; alternatively, only the body parts essential for the fertility rites could be executed (Pinch 2006: 126). Angela M.J. Tooley, who recently published two papers on this category of objects (2017; 2020), goes even one step further, excluding the figurines with feet entirely from this type, which she now refers to as “truncated figurines”. To this scholar, the lack of lower legs is the most important feature of this group of figures, distinguishing it from all the other types; Pinch (1993: 198) herself had reservations concerning the inclusion of statuettes with feet in this group.

The Qurna female statuette indeed *lacks* feet, which in itself is an argument in favor its inclusion in the category of Type 1, or the “truncated” figurines. However, a closer examination of the object suggests that the lack of feet is not deliberate, but rather a result of later destruction. The breakage line is not directly below the knee, but just above the feet; no rounding off is visible. This can hardly be explained by the fact that the figure was made of wood (perhaps making it easier to break it rather than to round it off, compared to stone or Egyptian faience specimens): for instance, the wooden female statuette found by Howard Carter in the doorway of tomb CC 24 in the area

of Birabi, Asasif (now MMA 26.7.1416), has legs that end at the knees, with the rounding off clearly visible (Carter 1912: 52 and Pl. XLIV.3). It seems possible that the Qurna figurine originally *had* feet, even if it lacks them now.

If not a “truncated” figure, then what kind of artifact was this? Tooley categorically excludes any statuette with feet from her considerations, treating full-height figurines as a different category of objects (Tooley 2020: 262). Can the Qurna statuette at all be defined as a “fertility figurine”? Let us take a look at other details of the statuette in order to attempt to answer this question.

Many known wooden figurines of naked women differ from the Qurna specimen in that their arms were carved separately and then attached to the torso.<sup>4</sup> The statuette from MMA 1152 is made of a single piece of wood, with no traces of attachment of any separately made elements. This is probably linked to the fact that the figurine is smaller than the majority of known wooden representations of nude females; while it is difficult to identify the type of wood used for its production without examining the object under a microscope, it was most likely made from one of the species native to Egypt, which are generally fibrous and therefore require larger objects to be assembled from smaller pieces (Harvey 2009: 1).

A large number of nude “fertility figurines” known from excavations and museum collections display painted deco-

4 See for example: Boston MFA 04.1777 from Asyut (Breasted 1948: 94, Pl. 87), Boston MFA 20.1120 from el-Bersha (Breasted 1948: 94, Pl. 89a), or the unprovenanced figurine currently at Washington DC, Dumbarton Oaks Collection (Breasted 1948: 95, Pl. 89b–c). All three objects were included in Pinch’s typology as Type 1 “fertility figures” despite the fact that they have feet.

ration: details of jewelry and geometric patterns interpreted as body painting, tattoos, or scarification (Pinch 1993: 198). As Tooley (2017: 426–429; 2020: 262) argues, the decorated specimens, usually made in Egyptian faience, belong to the early chronological phase of the manufacture of the statuettes, stemming from objects known as paddle dolls. The middle phase, on the other hand, is characterized by “experimentation with a variety of styles and materials” – an increase in the use of other materials (including wood), as well as a decrease in size and quality. The end phase once again brought the disappearance of wood from among the materials used for the production of the figurines, with the majority of specimens made of limestone (Tooley 2017: 426–431). In the case of the Qurna statuette, no indication of decoration can be seen, apart from the remains

of yellow paint. It does not necessarily mean that the figurine was undecorated, but that the decoration was not preserved. The more curious feature of the representation is the lack of a navel: statuettes of this kind usually have the navel sculpted rather than painted, which is not the case for the Qurna piece.

The hairstyle of the represented woman is somewhat puzzling, resembling none of the five hairstyles distinguished by Pinch for Type 1 figurines (Pinch 1993: 199). Also Tooley (2020) distinguished as many as 16 hairstyles for the Type 1 “truncated” figurines, but none of them matches the Qurna statuette. A “ponytail”, or a single lock on a cropped scalp, is indeed part of Tooley’s Style 1, though the lock is on the right side like the classical sidelock of youth, while in the Qurna figurine the tress is precisely in the middle of the back. A thick “ponytail” down the back occurs in Style 2 but is accompanied by two braids on each side in a “crop three braid style” (Tooley 2020: 245). A hairstyle like this can be seen, for example, in two unprovenanced Berlin statuettes (12764, 14517) representing nude women carrying infants, dated to the Middle Kingdom (Breasted 1948: 97, Pl. 94b–c). There are wooden female figurines that had locks of hair made separately and attached to the head using dowel pins (e.g. Breasted 1948: 95, Pl. 89b–c). This, however, is not the case of the Qurna statuette, where no remains of such are visible. Therefore, we are dealing with either an incomplete hairstyle (with additional, now lost, locks of hair once attached to the figurine’s head by other means than pins), or an entirely different hairstyle, lacking analogies in Type 1, or “truncated” statuettes.

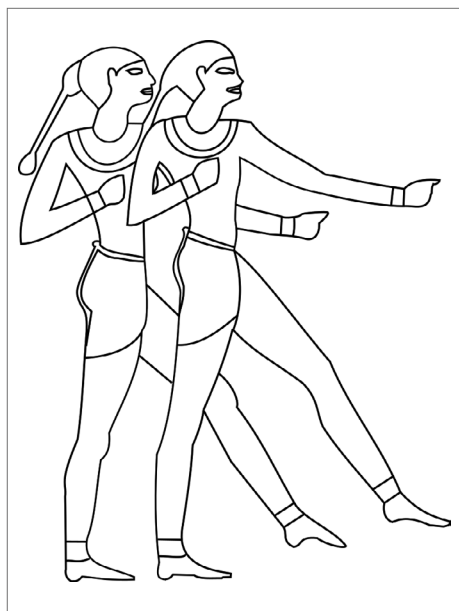


Fig. 4. Dancers from the tomb of Senet (TT 60) (After Davies 1920: Pl. XXIII)

Although the hairstyle of the Qurna statuette does not find exact parallels in Pinch's and Tooley's typologies, some general observations made by the latter scholar are worthy of note here. The braided hairstyles, visible on figurines from the Middle Kingdom, Second Intermediate Period, and early New Kingdom, bear strong links to the cult of Hathor and the notion of daughterhood (Tooley 2020: 271). Tooley (2020: 273) also hypothesizes that the "element of tonsure" on the figurines (executed either by cropping or shaving) evokes an association with the much later ritual baldness of male priests of Hathor, and that the partial baldness of the female figurines (not only the "truncated" ones, as the "crop three braid" style appears also on full-height statuettes) could also be related to the cult of the Golden One.

The Hathoric connection seems to be even more pronounced when one looks beyond "fertility figurines" in the search for analogies to the Qurna statuette's hairstyle, to a tomb scene from the Twelfth Dynasty Theban tomb of Senet (TT 60) representing funerary rites involving dancers. Two female dancers on the left sport a hairstyle similar to the one on the Qurna statuette: a single tress of hair falling down the back precisely in the middle, with a bulbous ending (possibly a metal disc, according to Norman Davies), and the rest of the head either bald or cropped [Fig. 4]. Both dancers are clad only in skirts; additionally, they are wearing bracelets on their wrists and ankles, as well as necklaces. No traces of body decoration are visible. In front of the dancing women, the following text can be read: *m.k Nbwt jj.tj* ("Behold! The

Golden One has come!") (Davies 1920: 22 and Pl. XXIII).

Perhaps, then, the bulge at the end of the "ponytail" of the Qurna figurine is a disc-weight (possibly containing a clay rattle), known primarily from Old Kingdom iconography, but occasionally attested also in the Middle Kingdom (Kinney 2008: 162, note 45; Meyer-Dietrich 2009: 6; Tooley 2020: 255, note 56). It has been argued that the disc-weighted tress usually appears on dancers performing "rigorous dances that required the stamina and flexibility of young performers"; thus, a strong association with youth occurs. Moreover, the hairstyle itself is linked to the cult of Hathor (Kinney 2008: 165). The scene from the tomb of Senet seems to be a close parallel to the iconography of the Qurna statuette not only in the geographical sense, but also stylistically — for example, in Beni Hassan Tomb 15, also dated to the Middle Kingdom, the dancing female acrobats are represented with weights of a slightly different shape (with a flat base, resembling lotus-flower pendants) and fully clothed (Newberry 1894: Pls IV, VIIIa, XIII).

Therefore, that the Qurna piece represents a Hathor dancer is plausible — at least as far as one can assume based on the hairstyle. The hypothesis that at least some of the "fertility figurines", as well as the earlier paddle dolls, represent *hn-rwt* dancers has been a prominent one in the discussion of the function of the representations (Morris 2011; Tooley 2017; 2020). Tooley argues that the early-phase "truncated" statuettes dated to the Twelfth Dynasty indeed bear strong associations with Hathoric ritual performances, while the later figurines (mid-

and late Thirteenth Dynasty to early Seventeenth Dynasty) invoke the notion of daughterhood, but also in the Hathoric context; as she points out, daughters were often members of the *hnr* troupes (Tooley 2020: 271–272). Despite the fact, then, that the statuette does not fulfill what Tooley considers the most important criterion for inclusion in the Group 1 of “fertility figurines” (lack of lower legs), there is a clear affinity between the Qurna figurine and this category of objects.

When it comes to chronological considerations, the dating of the figurine to the period proposed by Pinch for Group 1 “fertility figures” also appears tenable. While wooden figurines of naked women at least partly resembling the statuette from Qurna, such as those from the cemetery of Sedment, were dated to as early as the Sixth (Petrie and Brunton 1924: 3; Breasted 1948: 94; Russmann 2001: 78–79) and Ninth Dynasties (Petrie and Brunton 1924: 7; Breasted 1948: 94), a date in the Twelfth Dynasty or slightly later is more probable based on the lack of Old Kingdom material at the site and its immediate neighborhood and the iconography of the tomb of Senet. Moreover, the Qurna piece shares a number of similarities with wooden “truncated” Type 1 “fertility figurines”. The statuette represents a naked woman with a visible pubic triangle; it is made of material characteristic for Type 1 figures; it is of excellent workmanship; its dimensions are within the range of Type 1 specimens (though closer to the lower end). The Middle Kingdom dating clearly makes sense in the context of this part of the Theban necropolis, all the more so if we assume that the object was not intrusive in MMA 1152 but was deposited

on the occasion of an actual burial in the tomb (see below).

The dating and interpretation of the male figurine are even less straightforward, as representations of nude males in Egyptian art are not as common and well-researched as the female “fertility figurines” (see, for examples, remarks on the history of phallic figurines in the British Museum’s collection in Parkinson 2014). Male nudity is a rare subject in Egyptian art, especially in representations of elite adults, save for a short period in the late Old Kingdom. However, the nakedness of the officials in this period is interpreted not as a reflection of decline in status, but as an allusion to representations of children, who were usually portrayed naked, and the idea of rebirth (Robins 1997: 21). The Old Kingdom is a period unattested on the site and in its closest vicinity. Representations of naked or almost naked non-elite men are more common (Robins 1997: 76), yet they are usually limited to two-dimensional images rather than full statuary. Moreover, according to Egyptian decorum, erection representations are almost exclusively restricted to the divine sphere (Robins 2008).

Here, two inevitable questions arise:

1. Was the statuette ithyphallic or not?
2. Was the mutilation (especially of the phallus) intentional or accidental? The answer to the first question is required to be able to identify the individual represented; to the second, to try to understand the later fate of the object.

Unfortunately, neither of these questions can be answered with certainty. The most obvious interpretation of the piece is that it once represented an ithyphallic male. However, one must acknowledge



that there exists a (less likely) possibility that originally the penis protruded only slightly forwards, and then downwards, resulting in a representation of a non-ithyphallic individual. The state of preservation of the figurine does not allow to completely exclude the latter interpretation, even if it seems unlikely. In a similar vein, it is difficult to say when and how the destruction occurred. The clean, regular break suggests one precise cut — unlike the rest of the figurine, where splinters are still visible in the destroyed areas. Such an explanation seems the more appealing in light of the later history of the site as a Coptic hermitage, making deliberate destruction of such an “erotic” object by the monks an alluring possibility. However, if the statuette had indeed been ithyphallic, the protruding part would be the first one to have been accidentally broken off. It seems that deliberate mutilation is the most likely possibility, yet not the only one.

One is tempted to identify the statuette as a representation of the god Min, one of the oldest Egyptian deities, portrayed with distinctive ithyphallic iconography and with skin often painted black. Yet at least one detail speaks to the contrary: Min is usually represented with his right arm raised, holding a flail (Gundlach 1982: 136), while the discussed figure has the right arm hanging along the body.

The preserved parts of the figure suggest that the legs were probably joined, unlike in typical representations of mortal men, who were usually depicted in a striding pose. As was mentioned above, in ancient Egyptian art the ithyphallic mode of representation — the most prob-

able one in this case — seems to be a prerogative of deities rather than mortals. But if not Min, which god could be represented here? Several Egyptian gods were depicted in an ithyphallic manner; apart from Min, among the most important are Osiris, Amun-Ra (Pinch 1993: 238–241), and even Harpocrates (Abdel-Aziz 1995). The black paint preserved on the figurine suggests an association with fertility and rebirth, which would be in keeping with the identification with Osiris or Amun-Ra. However, these deities were most often depicted in wrappings, with their testicles covered (Robins 2008: 214), while no trace of bandages is discernible in the Qurna example, and the testicles are visibly marked. Moreover, while the ithyphallic mode of representation in art seems to be a solely divine prerogative, it was not limited to male, or even anthropomorphic deities. For example, Chapter 164 of the Book of the Dead characterizes the goddess Mut as a winged, ithyphallic entity with three heads (Faulkner 1985: 160, 163), while a New Kingdom stela from Asyut represents a man kneeling before an ithyphallic goose, Amun's sacred animal (DuQuesne 2008: 56–57, Fig. 11).

Leaving the question of the ithyphallic mode of representation aside and focusing on other stylistic features of the piece, the small size of the statuette is worthy of note: representations of nude mortal males that appear in the Fifth and Sixth Dynasties are usually larger and have separate arms. The arms of the Qurna representation are also much shorter than, for example, those of the Sixth Dynasty nude striding figure of Tjeti from Akhmim (BM EA 29594; Robins 1997: 21) or the similarly dated nude statuette of

Meryrahashtef from Sedment (BM EA 55722; Russmann 2001: 76–78), ending on the level of the genitals rather than the middle of the hips, and with no hole for

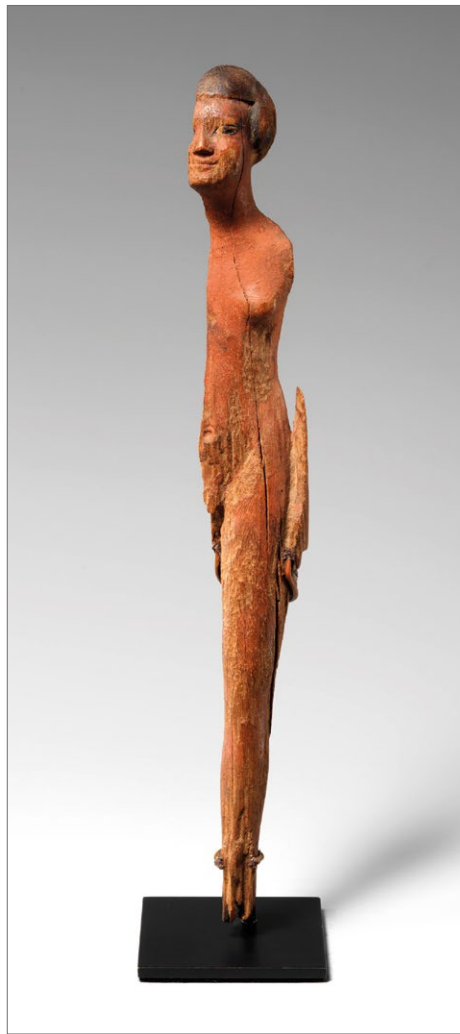


Fig. 5. Left side of a statuette, Metropolitan Museum of Art, New York, accession number 2021.41.112 (Bequest of Nanette B. Kelekian, 2020. Public Domain, Creative Commons Zero, <https://www.metmuseum.org/art/collection/search/329890>)

a scepter or other item in the clenched fist. The testicles of the Qurna figurine are visibly larger than those of representations of Tjeti or Meryrahashtef, which is probably due to the fact that neither of the two individuals was represented with his member erect. A figurine that could be tentatively considered parallel in style to the object from MMA 1152 is an unprovenanced wooden statuette (also very fragmentary) at the Metropolitan Museum of Art in New York, previously in a private collection (MMA 2021.41.112) [Fig. 5]. The figurine, only the left part of which is preserved, represents a naked male and according to the Museum's website can be dated to the Middle Kingdom. The size of the New York specimen (24 cm) is comparable to that from the Polish excavations (i.e. the approximate reconstructed height, with the missing head and feet included) and —like the Qurna statuette— has got hands carved in the same piece of wood as the rest of the body rather than having limbs made separately. It is unknown if the figure was ithyphallic or not: the diagnostic element is missing. It is also unclear whom the statue represents. The website entry mentions the possibility that the object belongs to the category of *ka* figures.<sup>5</sup> The Middle-Kingdom dating for the Qurna figurine is feasible, although, as will be shown below, some additional arguments could suggest a later date. The Qurna statuette seems to be a strange mixture of characteristics of different kinds of Egyptian representations: ithyphallic deities on the one hand, and “naturalistic” male statues on the other.

5 <https://www.metmuseum.org/art/collection/search/329890> (accessed: 27.04.2023).

Finally, the two wooden statuettes were found at the same site, but it needs to be considered whether the tomb had been the original place of their deposition. Wooden female figurines sharing a number of similarities to the one from MMA 1152 are known primarily from funerary contexts, also from the Theban necropolis: recently published examples include three wooden statuettes found by Ernesto Schiaparelli at Qurna, currently in Florence (6337, 6338, 6339; Guidotti 2017: 347–348). An ebony figure of a nude female of similar dimensions to the Qurna piece, dated to the Eleventh Dynasty, was excavated in the Theban tomb of Neferhotep (MMA 518; Morris 2017: 299, Fig. 4). Thus, the possibility that the discussed statuette originally came from the tomb is a real one. Alternatively, it might have been brought from the outside: for example, a large number of female figurines were excavated in the nearby workmen's village of Deir el-Medina. However, they are primarily made of clay, their execution is much cruder, and stylistically they differ from the Qurna specimen; and, most importantly, they are dated to the New rather than Middle Kingdom (Backhouse 2013; Arnette 2022). Therefore, it seems more plausible that the figure had been deposited in the tomb itself or in the neighboring mortuary complex, MMA 1151. Of course, that it was brought from some other tomb in the area, for example by a curious later inhabitant of the hill (Górecki 2014), cannot be excluded: its discovery in the aboveground part of the complex rather

than in the shaft could speak in favor of the latter. Nevertheless, the solution could be much simpler. The Polish excavations revealed that undocumented archaeological works took place in MMA 1152 at some point in the first half of the 20th century, and it could be during this clearance that the statuette was recovered from the shaft and later discarded or lost in the courtyard.

Wooden ithyphallic statues, on the other hand, are rarely documented as funerary goods; nude ithyphallic statues are even rarer. Two rough statuettes, originally ithyphallic, probably datable to the New Kingdom and akin in their material and theme to the male figurine from MMA 1152, were discovered by Édouard Naville at Deir el-Bahari. Nevertheless, judging by their description, this is where the similarities end, as their workmanship is very crude (Pinch 1993: 237). The figure BM 60005, possibly from Elephantine, seems to be another example of a rough ithyphallic representation made of wood (Shorter 1930). A further discovery from the Theban necropolis worth recalling here is a group of wooden phalli, found in the debris of the chapel of Hathor in the temple of Mentuhotep II at Deir el-Bahari, allegedly datable to the Eighteenth Dynasty (Hornblower 1926). All of these objects, though they do not constitute exact parallels to the Qurna figurine, originate from non-mortuary rather than mortuary contexts<sup>6</sup> and are later than the Middle Kingdom. However, an example of a male ithyphallic figurine from a tomb, albeit in a different

6 A possible parallel for the Deir el-Bahari wooden phalli, originating from a Deir el-Medina tomb, was suggested by Pinch (1993: 237).

material, needs to be recalled. In Tomb 36 from Cemetery A at Riqqeh, dated to the Twelfth Dynasty by the excavator, a set of four clay statuettes came to light, three depicting women, and the fourth one a man. The statuettes reproduced in the final publication (one male and one female) are of rough workmanship, with separate heads (Engelbach 1915: 19 and Pl. XXII.6–7). The male figurine (now at the Petrie Museum of Egyptian and Sudanese Archaeology, LDUCE-UC59338), has a distinct, erect phallus,<sup>7</sup> demonstrating that depictions of this kind were, in fact, deposited in tombs as well, even if made of a different material than the Qurna specimen.

The high quality of the male statuette from Qurna bears emphasis: it was a small object, but exquisitely crafted. While it cannot be excluded that it belonged to the original burial equipment of the tomb, another possibility to consider is that it was an object deposited in one of the nearby temples (as a votive object or a part of the temple's inven-

tory). Being neither a typical Min figure, nor a typical representation of the tomb owner or his servant, the figurine might have found its way to the tomb not as a burial good, but as an object brought to the site at some later point in history.

If not from the tomb and dated to the New rather than Middle Kingdom, where could the statuette come from? Two locations in the vicinity of the tomb seem the most probable: Deir el-Medina and Deir el-Bahari. In Dynastic times, both sites housed shrines of Hathor, a deity whose cult was strongly linked to human fertility and, by extension, phallicism (Pinch 1993: 238–245). Some other objects originating from Deir el-Medina were retrieved during the Polish excavations on the hill (Górecki 2014). Moreover, phallic objects were found at both locations (see above and note 6). Alternatively, the male figurine could come from an entirely different place, perhaps even from one of the nearby settlements. The unique character of the statuette makes any definitive statements rather precarious.

## CONCLUSIONS

The two figurines discussed in this paper may seem similar at first glance: they are made of the same material, their dimensions place them in a group of relatively small representatives of their categories, and —most importantly— they depict individuals whose nakedness usually prompts the “erotic” or “fertility” interpretations of these objects’ functions.

However, appearances can be deceiving, and despite their ostensible likeness, the two objects represent two different groups of artifacts, with seemingly distinct functions, and possibly originating from two unrelated sites. The identification of the better-preserved female statuette as a “fertility figurine” is debatable, but it shares a number of similarities with this category of objects,

7 <https://collections.ucl.ac.uk/Details/petrie/30207> (accessed: 10.08.2023). I am very grateful to the anonymous Reviewer for bringing this piece to my attention.

including what seems to be a strong link to the goddess Hathor. It has been argued above that perhaps the figurine represents a dancer, likely connected with the cult of this deity, and should be dated to the Twelfth Dynasty or the Second Intermediate Period. Nudity in the context of female representations of this kind is not surprising, quite the opposite: numerous specimens known from other sites and museum collections exhibit characteristics visible in the object from MMA 1152. Therefore, even though the object is atypical and possesses several rather unique features, it seems to be embedded in a well-known tradition of imagery.

The interpretation of the fragmentarily preserved male figurine, on the contrary, is somewhat enigmatic. In Egyptian art male nudity was rare, save for a short period in the late Old Kingdom.

The figurine was probably ithyphallic, thus allowing a cautious supposition that it represented a deity rather than a mortal individual. Yet virtually everything else pertaining to the statuette remains uncertain: the dating is problematic, as the stylistic features are not preserved to an extent allowing its comparison with well-dated examples; even the identification of the figure as Min is uncertain due to the arm gesture, atypical for this deity. Nonetheless, known objects of this kind do not belong to the standard burial equipment, either Middle Kingdom or later, even if occasional exceptions from this rule are known. Therefore, it is possible that the tomb was not its original place of deposition. The function of the statuette as a (perhaps New Kingdom) votive offering or part of a temple's inventory rather than a burial good needs to be considered.

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# In the presence of my king forever: Royal images in the tombs of noblemen of the Middle Kingdom and beyond



**Abstract:** The paper discusses the origins of royal representations and their transformation into the divine presence in private tomb decorations. The point of departure is a small fragment of the divine beard of Mentuhotep II recently rediscovered in TT 311. Although the scene with the king in TT 311 is, thus far, the earliest attested representation of a pharaoh in a private tomb, the motif fits well into the evolving pattern of gods' and kings' presence in private tombs, initiated in the Old Kingdom with Anubis and Osiris occasionally depicted on tomb walls and the king addressed in offering formulae. The introduction of the image of Mentuhotep II with Osirianizing features in TT 311 also sets up a paradigm of a closed cycle of Osirian presence in private tombs: from prayers to Osiris in *hṯp-di-nswt* formulae, through the king-as-deity to the image of Osiris himself.

**Keywords:** Asasif, Mentuhotep II, king's image, deity's image, decoration, divine beard, divinization

## INTRODUCTION

The socio-political changes that started during the First Intermediate Period encouraged provincial elites to introduce in their tombs some new motifs and scenes formerly reserved for royalty (W.S. Smith 1981: 154; Kamrin 2015: 32). One such theme that appeared in the Middle

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Kingdom and had never before been represented in the private tombs of the Old Kingdom was the image of a king. The origin of this motif, widely attested in the decorative program of non-royal tombs of the New Kingdom, is very difficult to trace due to the scarcity of preserved scenes.

This paper aims to contribute to the discussion on the origins of the introduction of the king's image into private tombs and its subsequent transformation into a divine representation in the funerary cult sphere. To date, the research has mostly focused on the physical presence of images of the king-as-ruler or the king-as-deity (Moret 1902; Posener 1960; Semat 2016). As

a point of departure for these deliberations the author has chosen a small fragment of the divine beard of Mentuhotep II recently rediscovered in Theban Tomb (TT) 311 by an expedition of the Polish Centre of Mediterranean Archaeology, University of Warsaw (PCMA UW). This small piece of relief decoration is crucial for the analysis of the development of royal and divine imagery in private funerary contexts, as it is the earliest attested image of the king in a private tomb, and Mentuhotep II is depicted not only as a contemporary ruler, but also as a deity. Both motifs are widely present in the decorative program of later periods.

## PERCEPTIONS AND DEPICTIONS OF THE PHARAOH IN ANCIENT EGYPTIAN ICONOGRAPHY: AN OUTLINE

The pharaoh was variously depicted in ancient Egyptian iconography: as the ruler, the living Horus, a member of the divine family of his ancestors, and a deity (Moret 1902: 1–3; Posener 1960: VII–XV; Málek 2000: 241). These special roles of the king were exhibited already in the royal tombs of the Old Kingdom. The pharaoh was typically depicted either as the main figure in a given scene or as a subject of rituals held in the presence of gods or members of the royal family (El Awady 2009: 52; Do. Arnold 1999: 83–98). The themes comprising the decorative programs of non-royal tombs from the Old Kingdom and the Middle Kingdom were, to some extent, similar (Kamrin 2015: 30–32). The “commoner” was presented in a similar set of scenes as the king, except for direct interactions with the divine sphere, which were reserved for royalty.

Prior to the Middle Kingdom, figurative representations of the pharaoh were absent from non-royal private tombs (Junker 1955: 132), even though the name of the ruler was often mentioned in individual (auto)biographies or *hṯp-dī-nswt* formulae referring to the king in general (Vasiljević 2005: 141; Nuzzolo 2021: 123, 130). This rule also applied to depictions of gods, never portrayed in tombs besides references to Anubis or Osiris in the same formulae. Anubis was by far the most frequently addressed god in offering formulae from the beginning of the Old Kingdom. In some hieroglyphic inscriptions, the glyph of a resting jackal was larger than the rest of the signs, as is especially noticeable in reliefs from mastabas of Khufu's family members in Giza (Kawab; Khafkhufu; Mersyankh II; Mersyankh III dated to the Fourth Dynas-

ty) (Simpson 1974: 4). As for Osiris, the first references to this god come from the mastabas of Ptaahshepses and Ti in Saqqara, the tomb of Hemetre, and the inscription on the false door of Inti from Giza, all dated to the Fourth or Fifth Dynasty (Shalomi-Hen 2007: 1695; M. Smith 2017: 118–123). Nuzzolo, who inventoried mentions of Osiris in inscriptions from Old-Kingdom private burial contexts including offering formulae, noted that “the deity was seen as a god of the afterlife, acting for the sake of the tomb owner side by side with Anubis and, most importantly, the living king (*nswt*)” (Nuzzolo 2021: 127). Although in the beginning the formulae were addressed to Osiris less frequently than to Anubis, by the end of the Sixth Dynasty references to Osiris became more common and finally outnumbered those to Anubis (DuQuesne 2005: 90, 143–145). During the Middle Kingdom, representations of gods in non-royal tombs continued to be fairly rare. Thus far, they have only been recorded in a provincial tomb in Asyut (representation of Anubis and Hathor in the so-called

tomb of the Northern Soldiers (H11.1)), dated probably to the Eleventh Dynasty (El-Khadragy 2006: 155–157, Fig. 6) and in Qubbet el-Hawa (Osiriform statues in the tomb of Sarenput II),<sup>1</sup> dated to the Twelfth Dynasty (Müller 1940: 29–31). The expansion of the Osiris cult in non-royal tombs is further attested by two wooden statues found together with the *imiut* in the shrine of Imhotep’s tomb. Initially considered as figures of Senuseret I, they are now believed to represent divine guardians: the divine and regenerated king depicted as Osiris, standing in a shrine with the symbol of the *imiut*, Anubis, who made this regeneration possible.<sup>2</sup> Johnson noticed that the figures were made of 16 pieces of wood—matching the number of fragments into which Osiris’ body was cut by Seth, and from which he was subsequently resurrected by Anubis—which additionally supports the interpretation of the guardians and the *imiut* as “symbols of resurrection, the “becoming Osiris” of the king through the good offices of Anubis” (Johnson 1980: 13; Do. Arnold 2015: 18, Fig. 23).

1 The Osiriform statues were placed in three symmetrical niches in the corridor of the tomb of Sarenput II. The statues with red-painted skin and collars were inscribed with the names and titles of Sarenput II, and the ones with black skin typical for Osiris were anepigraphic. Whether the statues represented Sarenput II or Osiris, they all intentionally resembled the god (Lobban 2003: 370).

2 The statues represented young men in striding pose, holding the crooked staff. One figure was shown wearing the red and the other the white crown, both lacking a uraeus. The traces of attachment of a divine beard and a short staff are extant, although the attributes themselves were not found. The purpose of placing guardian statues and the *imiut* in the shrine near the tomb of Imhotep and its relevance to the Osiris cult was discussed at length by Aldred (in Johnson 1980: 11 note 4), Johnson (1980: 11–20) and Do. Arnold (2015: 17–18, Cat. 168 on pp. 230–232). Johnson (1980: 17) dated these figures to the late Twelfth or early Thirteenth Dynasties, while Do. Arnold (2015: Cat. 168 on p. 231) limited the timeframe to the reign of Amenemhat I.



## REPRESENTATIONS OF THE PHARAOH IN PRIVATE TOMBS OF THE MIDDLE KINGDOM

The earliest known example of a royal image in a private tomb is the one of Mentuhotep II from the tomb of Khety dated to the Middle Kingdom (TT 311).<sup>3</sup> Due to its novel iconography, TT 311 is vital for understanding the evolution of non-royal funerary customs, the process of development of the New Kingdom canon, and the factors that led to its emergence. This picture can now be enhanced owing to an additional piece of the king's torso with a divine beard and a collar, retrieved by the PCMA UW during the 2020 field season [Fig. 1].



Fig. 1. Fragment of the torso with the divine beard and the collar discovered in TT 311 (PCMA UW | Photo P. Karwowska)

TT 311 was discovered at the beginning of the 20th century by Herbert Winlock during his 1922–1923 season (Winlock 1923: 11–22). It is a rock-cut tomb of the IIa corridor type (Di. Arnold 1971: 45), with a large court. Starting from the façade entrance, a long corridor with two niches on both proximal sides leads to a square offering chapel. The entrance to the corridor used to be guarded by a wooden door, which has not survived to our time (Winlock 1923: 15–16; Soliman 2009: 98). The sepulchral part is hidden behind the offering chapel with the burial chamber oriented north – south. It was already in antiquity that the tomb was badly damaged by robbers and stone vessel producers. Some remaining relief fragments excavated by Winlock were taken to the Metropolitan Museum of Art in New York. In his excavation reports, Winlock (1942: 16–19) described the remains of relief decoration from the corridor, including a panel with the representation of the king but did not indicate its exact location beyond a remark that it was placed in a niche. This was repeated by Porter and Moss in the *Topographical Bibliography* (Porter and Moss 1970: 387; Hayes 1978: 163–164) [Fig. 2:a]. A probable reconstruction of

3 Asasif North is a necropolis located on the left side of Mentuhotep II's mortuary complex at Deir el-Bahari. Numerous private tombs dating mainly from the early Middle Kingdom are situated on the northern slope of the hill, facing Mentuhotep II's causeway. One of the most prominent among them is the tomb of Khety (TT 311), the seal-bearer and treasurer of Mentuhotep II. The site has a long history of excavations, first by the Metropolitan Museum of Art Egyptian Expedition (Winlock 1942: 11–22), and, since 2013, by the PCMA UW (Chudzik 2015; 2016; 2017; 2020).

the scene was assembled from the fragments at the museum [Fig. 2:b, c].<sup>4</sup>

Another example of a Middle Kingdom tomb with an image of a pharaoh is the tomb of Antefiker and his mother Senet (TT 60), dated to the Twelfth Dynasty, located at Sheikh Abd el-Qurna [Fig. 3]. The king, Senuseret I, was depicted on the southern wall of the corridor, presumably in a seated po-

sition facing the tomb owner. Sadly, the scene and the king's figure have been badly damaged, leaving room for speculation about the attire and regalia he was displayed with.<sup>5</sup> Specifically, it is uncertain whether he was wearing the white crown (as shown in Davies's reconstruction, cf. [Fig. 3]) or the *atef*-crown (Davies 1920: 13–14; Bács 2006: 12).

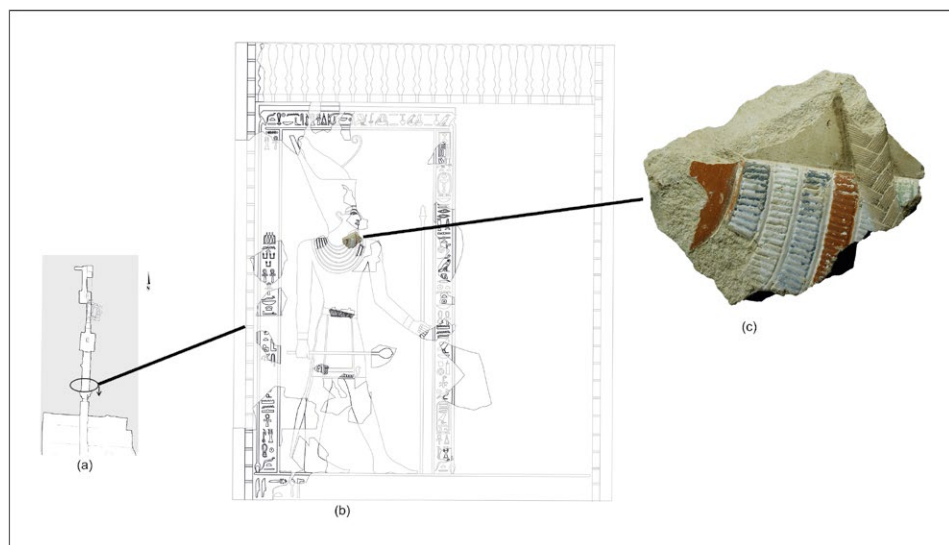


Fig. 2. Tomb of Khety (TT 311) with the reconstructed scene with Mentuhotep II: a – tomb plan with the possible position of the scene, with the arrow indicating the orientation of the king's figure (PCMA UW | drawing K. Andraka); b – reconstruction of the scene of Mentuhotep II at the Metropolitan Museum of Art in New York (<https://www.metmuseum.org/art/collection/search/590886>, accessed: 12.01.2023); c – fragment of the torso with the divine beard and the collar (PCMA UW | Photo P. Karwowska)

- 4 The displayed fragments under discussion are housed at the Metropolitan Museum of Art, accession number 26.3.354-8; <https://www.metmuseum.org/art/collection/search/590886> (accessed: 12.01.2023). Despite the scarcity of these fragments, the presence of a mace implies that the pharaoh was depicted in a standing pose.
- 5 According to Davies: "Antefoker was here shown approaching the throne of his king, Sesostri I; though the only evidence now left for his figure is the pails which have been taken to expunge it. The king too is lost, apparently by intent, as the line of fracture closely follows that of the body" (Davies 1920: 13, Pl. XVI). One may wonder if this is evidence for deliberate destruction during the Amarna revolution, or if it suggests a refashioning of the scene already in the Eighteenth Dynasty (Bács 2006: 15–16).

A debated example of an image of a king is present in the tomb of Antef in Asasif (TT 386), dated to the Eleventh Dynasty. The presence of a royal representation is suggested by a chair with lion-shaped legs and adorned with a lion's head. Such furniture was initially reserved for royalty, but later, toward the end of the Old Kingdom, it occasionally appeared in noblemen's tombs as well. The scene was painted on wall plaster at the entrance (Jaroš-Deckert 1984: 83–86). If the scene indeed featured an image of the king, it would be the earliest royal representation in

a non-royal tomb, predating even TT 311 (Jaroš-Deckert 1984: 86; Fischer-Elfert 2003: 173 note 14; Vasiljević 2005: 133; Bács 2006: 6 note 9; Di. Arnold and Do. Arnold 2015: 40 note 24). Notably, Intef additionally attempted to acknowledge the king's visual presence by prominently displaying the royal names of Mentuhotep II on the tomb pillars (Jaroš-Deckert 1984: 83–86). Similar manifestations are noted in a few other tombs from the Middle Kingdom, which feature the kings' names on tomb walls or stelae with no direct relation to the *ḥtp-di-nswt* or the autobiographical text.<sup>6</sup>

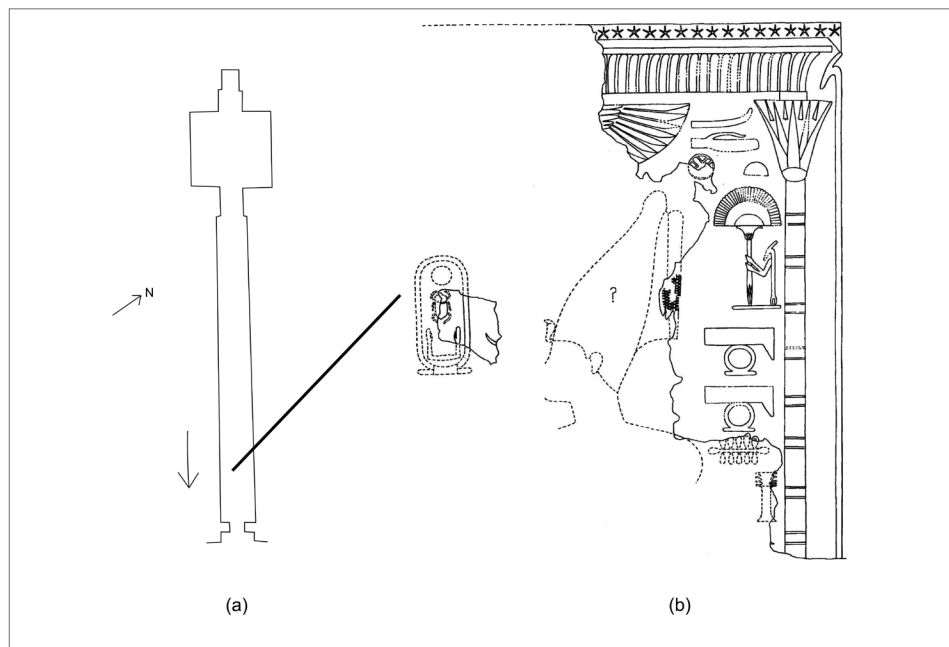


Fig. 3. TT 60 with the image of Senuseret I: a – tomb plan with the arrow indicating the orientation of the king's figure (Drawing P. Karwowska after Porter and Moss 1970: 106); b – Senuseret I scene (Davies 1920: Pl. 16)

6 Examples are: a stela from TT 313 of Henenu from Asasif mentioning Mentuhotep II (Hayes 1978: 165); Tomb BH 2 of Amenemhat mentioning Senuseret I (Newberry 1893: Pl. 7); and Tomb No. 2 of Djchutihotep from Bersheh mentioning Senuseret II, Amenemhat II and Senuseret III (Newberry 1895: 12, Pl. 5).

No depictions of kings in non-royal tombs of the Middle Kingdom are known to have been discovered outside the Theban necropolis. However, in the tomb of Djefaihapi in Asyut (Tomb No. 1), the nobleman adores the “presence” of Senuseret I in the form of the king’s *serekh* and his two cartouches [Fig. 4] (Griffith 1889: Pl. 4; Vasiljević 2005: 134–135; Kahl 2014: Abb. 2). The scene is placed on the eastern wall of the hall, and the owner is turned towards the king’s names and the entrance to the tomb. The names of the ruler are

framed with two *was*-scepters and a *pet*-sign, similarly to the reconstructed image of Mentuhotep II in TT 311, as well as that of Senuseret I in TT 60.<sup>7</sup>

During the New Kingdom, tombs featuring representations of kings increased significantly in number, as the royal image became part of the canonical decorative scheme. As demonstrated by Bács, the image from TT 60 was reproduced in later New Kingdom scenes depicting the king, preserved in numerous tombs of the Eighteenth Dynasty, where Thutmose I, Hatshepsut or Thutmose III are presented

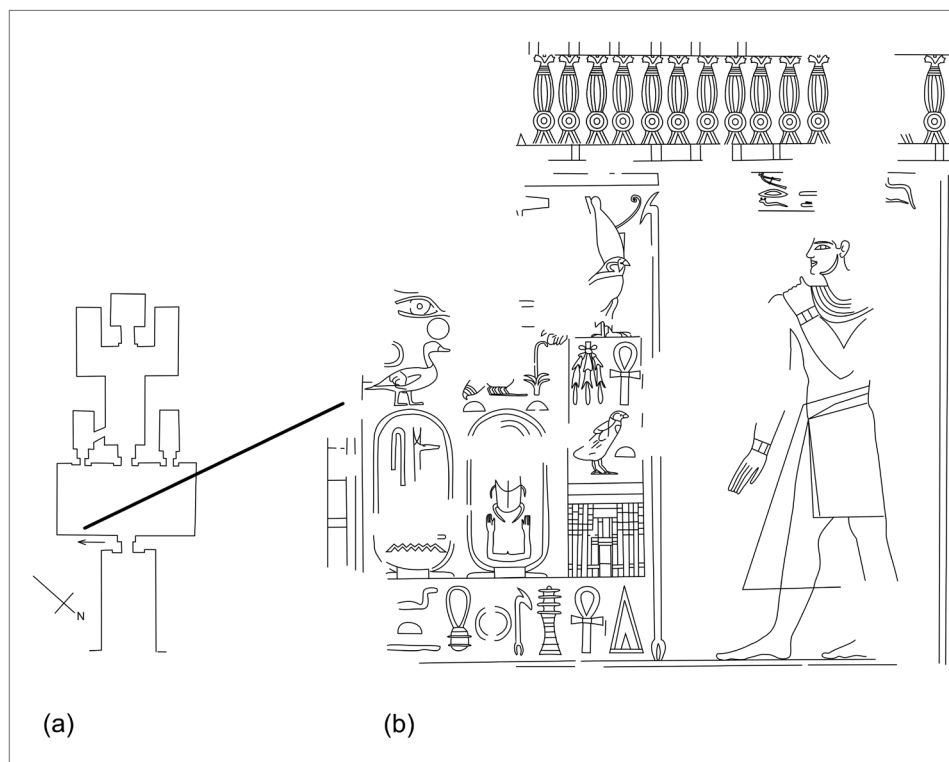


Fig. 4. Tomb of Djefaihapi, No. 1 in Asyut: a – plan with the location of the adoration scene (Drawing P. Karwowska after Porter and Moss 1968: 260); b – Djefaihapi adoring cartouches of Senuseret I (Drawing P. Karwowska after Kahl 2014: Pl. 4)

7 This may also indicate an affiliation of the ruler to the divine sphere (cf. Stupko-Lubczynska 2016: 132 with note 23).

sitting under a baldachin.<sup>8</sup> Later, in the Ramesside period, the same composition can be found in scenes showing Osiris sitting in a kiosk.<sup>9</sup> Also, the scene of Djefaihapy adoring the names of Senuseret I was almost certainly copied in the tomb

of Senenmut (TT 353), as indicated by the position of the latter scenes within the tomb (on the eastern side of the hall), the pose of the tomb owner in adoration, and the placement of the royal names [Fig. 5] (Dorman 1991: Pl. 60; Kahl 2014).

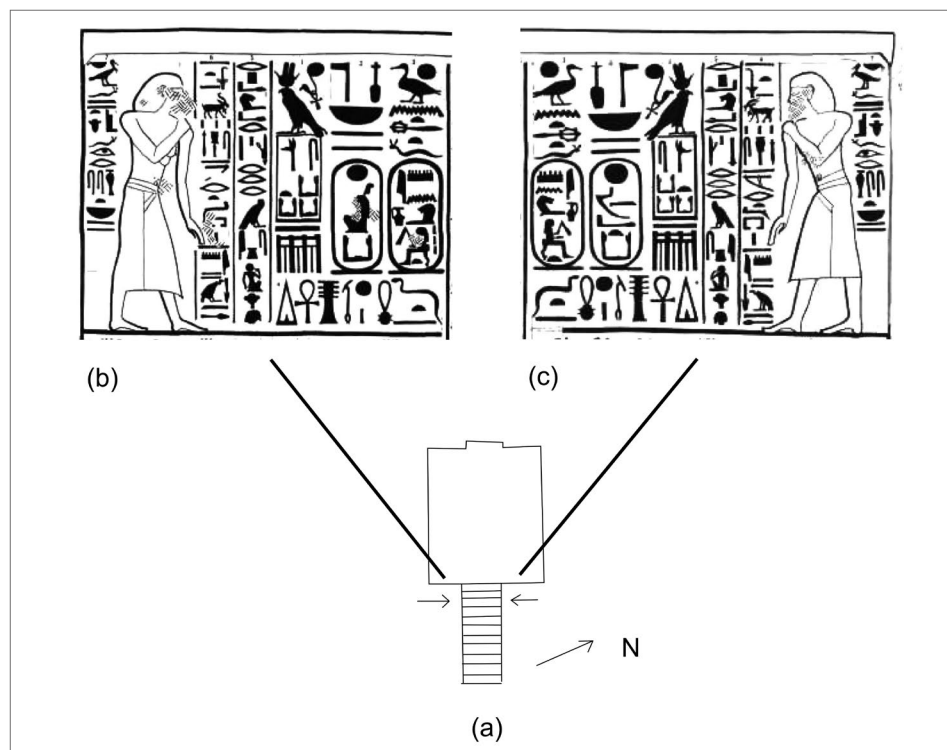


Fig. 5. TT 353 of Senenmut: a and b – Senenmut adoring cartouches of Hatshepsut (After Dorman 1991: Pls 80 (a), 82b (b)); c – location of the scene on the tomb plan (Drawing P. Karwowska after Porter and Moss 1970: 415)

- 8 Bács (2006: 8–9) lists the representations of kings and tomb owners, for example Hatshepsut or Thutmose III in the tombs of Hapuseneb (TT 67), Amenhotep (TT 73), Duauyerneheh (TT 125), Djehuty (TT 110), and possibly Senenmut (TT 71), and Thutmose III alone in the tombs of Amenemhat (TT 123), Menkheprreseneb (TT 86), Yamunedjeh (TT 84), Senneferi (TT 99) and Rekhmire (TT 100). For more examples of New Kingdom tombs with royal representations, see Hartwig 2004.
- 9 There is a strong resemblance between the image of Osiris in the Ramesside tomb of Imiseba TT 65 and that of Thutmose III in TT 131. In particular, the composition of the scene, with the curved ram's horns, bull's protome and a figure behind the deity, is analogous to the one in TT 65. The decoration in TT 65 was prepared for the first owner of the tomb, Nebaum, in the time of Hatshepsut, so it presumably represented either Hatshepsut or Thutmose III (Bács 2006: 3–5, 15–16).

## IMAGES OF MENTUHOTEP II IN NON-ROYAL TOMBS: THE ISSUE OF THE BEARD

One of the tasks undertaken by the PCMA UW expedition to North Asasif was to clear and reinvestigate the debris pile left in the court of TT 311 by the former excavators. To date, over 3500 pieces of tomb decoration have been salvaged, offering great potential for broadening the picture of the decorative program in TT 311, including the scene with the king.<sup>10</sup> Many of the already retrieved fragments seem to complement some of the scenes housed in the Metropolitan Museum of Art in New York.

The scene under discussion here presents Mentuhotep II in a standing position, equipped with royal attributes: the double crown, the mace, and the scepter.<sup>11</sup> In addition to this well-known set of royal insignia (Aldred 1988; Do. Arnold 1999: 86–92; Semat 2016; Masquellier-Loorius 2020), Mentuhotep II also has a false divine beard attached. The beard, resting on red, blue and green colored bands of a collar, is preserved on the fragment rediscovered by the PCMA UW [see *Fig. 1*]. This detail, fairly uncommon in the royal iconography of previous periods, has encouraged the author to offer some insights into the

possible role of a beard in the depiction of the ruling king and his identification with a deity in the non-royal funerary context (the issue has been studied to some extent by Staehelin 1966: 92; 1975: 627–628; M. Smith 2017: 126, 207–208; Volokhine 2019: 63, 72–73).

Generally, the false beard was worn by kings as a symbol of male power since as early as predynastic times (Hendrickx, De Meyer, and Eyckerman 2014). As of the Third Dynasty, two types of false beards can be distinguished in Egyptian iconography: a royal beard and a divine one. In the former, the hair is arranged in horizontal lines or in a wave-like pattern, and the end forms a straight edge.<sup>12</sup> The divine beard, in turn, is thinner, meticulously braided, and its tip is curved forward. Although different in shape, both divine and royal beards were artificial and fixed to a headdress or a crown. The process of crafting such an artificial beard, attaching it to the king's face, as well as maintaining and grooming it required considerable effort. Such a proclivity for neat looks, leaving no margin for naturally grown beards, was meant to manifest the supremacy

10 The fragments testify to the use of different work techniques and engagement of different artists (Chudzik 2020: 173).

11 The reconstruction of the image of Mentuhotep II at the Metropolitan Museum of Art is based on the fragments from Winlock's excavations. It shows the king in a standing pose, wearing the royal insignia —the double crown of Upper and Lower Egypt and the false beard— and holding the *hd*-mace and the *mdw*-shaft in his left hand.

12 An example of such a beard is found in a relief from the mortuary temple of Djedkara Isesi in Saqqara, depicting the king embraced by a divinity (Evers 1929: 29). In contrast, a shorter beard can be seen on relief representations of non-royal individuals (Steindorff 1913: Pl. 130) or even foreign prisoners (e.g. Borchardt 1913: Pl. 6; Jéquier 1938: Pl. 40).



of the Egyptian culture over foreign “savages” represented with their natural hair and beards (Staehelin 1966: 92–93; Hendrickx, De Meyer, and Eyckerman 2014: 135–136; Volokhine 2019: 63, 73). The beard on the relief fragment from TT 311, rediscovered by the PCMA UW, features all the attributes of the divine beard: it is thin, braided and curved at the tip. This beard, formerly called “Osirian”, was strongly associated with the deceased king and funerary worship, although kings might occasionally wear it in other contexts. Its earliest known

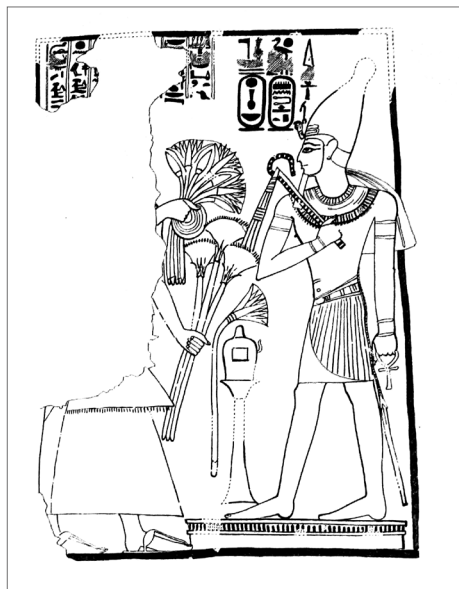


Fig. 6. TT 31 of Khonsu (Nineteenth and Twentieth Dynasties). Scene of adoration of Mentuhotep II's statue (After Davies 1948: Pl. XVIII)

depiction, found in the Djoser chapel in Heliopolis, most likely belonged to the god Geb, but it was also worn by other gods, including fertility deities like Amun Min and Osiris (Baines 1985: 87; Hendrickx, De Meyer, and Eyckerman 2014: 135; Volkhine 2019: 66, 72–73).

Mentuhotep II seems to be the first pharaoh portrayed wearing the divine beard while still alive, as shown on several of his contemporary reliefs.<sup>13</sup> On an image from the Dendera chapel, built by Mentuhotep, the king wearing the red-and-white crown and the divine beard is depicted in the act of defeating his enemies (Habachi 1963: 22, Fig. 6). On the relief from the Elephantine temple, the pharaoh is interacting with the goddesses Satis and Montu (Habachi 1963: 42, Fig. 19). However, the best-known reliefs of the deified king are found in his mortuary temple at Deir el-Bahari, including the chapels of his wives (Naville and Clarke 1910: Pls V.C, D, VI.B, XI, XIII, XVIII). The same mortuary complex yielded a sandstone statue, discovered accidentally by Howard Carter. It shows the ruler in a seated position, wearing the red crown and the divine beard (Di. Arnold and Do. Arnold 2015: 38, Fig. 6).

Another relief depiction of Mentuhotep II was found at Wadi Shatt el-Rigal (Winlock 1940: Fig. 7). The king is shown with his mother Iah and his son Intef, accompanied by Khety.<sup>14</sup>

<sup>13</sup> Lalib Habachi provided an overview of the images of Mentuhotep II in the monuments the latter had built or rebuilt, including depictions with a royal deity, mainly Amun, Min and probably Montu (Habachi 1963: 50–52). Habachi, however, did not discuss the royal-divine iconography, the type of the false beard Mentuhotep II was wearing or its Osirian symbolism in funerary cult. See also Di. Arnold and Do. Arnold (2015: 47).

<sup>14</sup> On another relief carved in the nearby rock, only the king and Khety are portrayed; here the king wears the *hb-sd* robe and the white crown (Winlock 1940: 137–161, 142, Fig. 7).

The depiction of the pharaoh closely resembles the figure from Khety's tomb in North Asasif, wearing the double crown and the false, curved beard, and holding the staff and the mace (Habachi 1963: 16–17).

Distant analogies to Mentuhotep II's images from TT 311 can be found painted on plaster in two Theban tombs from the Ramesside period: TT 31 of Khonsu in Sheikh Abd el-Qurna (Davies 1948: 11–30, Pl. XVIII) [Fig. 6], and TT 277 of Ameneminet in Qur-

net Murai (Vandier d'Abbadie 1954: Pl. XV.1; Habachi 1963: 50–51) [Fig. 7].<sup>15</sup> In these representations, Mentuhotep II is shown in a standing position, wearing the white crown with the uraeus and the royal beard attached, and holding royal attributes: the scepter and the mace or flail. In both cases, the images of the king are poised on pedestals, and might therefore be depictions of a statue or statues of Mentuhotep II or, alternatively, of reliefs at his mortuary temple in Deir el-Bahari (Win-



Fig. 7. TT 277 of Ameneminet (the Nineteenth and Twentieth Dynasties). Scene of adoration of Mentuhotep II's statue (Facsimile, Metropolitan Museum of Art, Acc. No. 30.4.124 <https://www.metmuseum.org/art/collection/search/557844>)

<sup>15</sup> In her master's thesis, Gabrielle Heffernan (2010) mentions two other examples of representations of Mentuhotep II: one in TT 2 from Deir el-Medina, belonging to Khabekhnet (Lepsius 1865: 2a); and the other in TT 19 from Dra' Abu el-Naga', belonging to Amenmose (Champollion 1845: Pl. clxxxiv; Foucart 1935: Pl. xii). In this case, Mentuhotep II is depicted among other kings and queens who accept offerings from the tomb owner (Heffernan 2010: 140, 143, 145).

lock 1947: 41). In TT 277, the image of the king's statue is shown at the foot of the Theban mountain, from which the Hathor-cow emerges. The scene clearly evokes the Beautiful Festival of the Valley, reaching back to the Middle Kingdom, when the festive procession of Amun's bark departing from Karnak

started visiting Mentuhotep II's temple (Pinch 1993: 4–6; Dolińska 2007).

It cannot, however, be excluded that the artists and owners of the tombs were also inspired by TT 311<sup>16</sup> and/or reliefs of the nearby mortuary temple of the king, or tombs of the king's wives.

## KING AS PROTECTIVE DEITY

Tomb iconography was intended to serve a number of goals. From the tomb owner's perspective, the most important aims were to secure rebirth and a prosperous afterlife by assuring continuity of offerings and rites, to preserve identity through commemoration by visitors, and to sustain a link with society and its culture by making the tomb a part of a larger mortuary complex (Hartwig 2004: 1–2, 51–52).

Incorporating “the king's presence” into one's tomb decoration may have also been a way of meeting the above

objectives by additionally placing oneself under the protection of a deified ruler, who could be perceived as a patron of the necropolis. Indeed, such deification is attested for Mentuhotep II in the Theban necropolis (Habachi 1963: 50–51), as well as for Amenhotep I and his mother Ahmes Nefertari (particularly at Deir el-Medina)<sup>17</sup> and for later rulers like Thutmose I, Thutmose III and Amenhotep III (Kees 1958: 122; Assmann 2003). Rulers subjected to adoration might even date back to the Old Kingdom or form groups perceived

16 The possible use of the representations of the king from TT 311 as models for decoration of other tombs might be explained by the popularity of Khety's monument, prominently placed on the North Asasif slope, as indicated by numerous visitors' inscriptions left on the tomb's walls, dating mainly from the Eighteenth Dynasty and the Ramesside period (Bács 2006: 7; Ragazzoli 2021: 222–225). The latter may also apply to TT 60, favorably placed in Sheikh Abd el-Qurna, which was a popular destination (Bács 2006: 8; Ragazzoli 2013; 2021: 237). Also the tomb of Djefaihapy in Asyut, one of largest rock-cut tombs in Middle Kingdom Egypt, was visited by designers of the Eighteenth Dynasty (Reisner 1918: 80; El-Khadragy 2007: 54; Kahl 2014: 161–163; Stupko-Lubczynska 2021: 205, note 28).

17 The cult of Amenhotep I and Ahmes-Nefertari, which started in the Eighteenth Dynasty and continued until the end of the Twenty-first Dynasty, was mostly limited to the Theban necropolis (Valbelle 1985). There are numerous examples of tombs with representations of this king alone, with his mother, and with other kings. For example, in TT 178 of Neferronpet in El-Khokha from the Nineteenth Dynasty (reign of Ramesses II), the deceased with his wife are shown censuring and pouring libations before Amenemhat I and Ahmes-Nefertari (Porter and Moss 1970: 283–285), and in TT 51 of Userhet in Sheikh Abd el-Qurna from the Nineteenth Dynasty, Thutmose I with Ahmes-Nefertari are offered braziers by the tomb owner and family members (Porter and Moss 1970: 97–99).

as local “saints”, to use an expression proposed by Málek (Porter and Moss 1968: 571–572; Málek 2000).<sup>18</sup>

Mentuhotep II was venerated not only by his immediate successors, but his cult persevered until the very end of the Ramesside period.<sup>19</sup> It is reasonable to suppose that his successes in reunifying and strengthening the country earned him a reputation of a man with extraordinary powers. Whether he was regarded as a god already during his lifetime is, however, uncertain. Habachi argues in favor of his “deification”, pointing to the divine attributes used by Mentuhotep II, as well as texts in which he is addressed directly as the god “beloved-of-Horus” or “the living god, foremost of kings”. Such inscriptions, placed on the Dendera chapel walls during his lifetime (Daressy 1917; Habachi 1963: 18–21, 52), support the argument that the ruler received the offerings as a god rather than as a human *ka*-statue (Habachi 1963: 12). Finally, images of Mentuhotep II show him assimilated to gods like Min, Amun or Kamutef on Konosso Island (Habachi 1963: 43), on

Elephantine (Habachi 1966: 42–43), in Dendera (Habachi 1963: 52), and in Deir el-Bahari (Habachi 1963: 50). However, Habachi’s interpretation was challenged by Mark Smith, who denied that these examples were proof of Mentuhotep II’s deification, arguing that the mummiform figures of Mentuhotep represented him in the context of the *sed* festival, not as Osiris, whereas the inscriptions calling him “beloved-of-god” were expressions of his interaction, rather than identification, with the deity (Leblanc 1980: 69–80; M. Smith 2017: 208–210).

The identification of living and deceased kings with Osiris in the context of the afterlife has been thoroughly studied by Mark Smith (2017). Analyzing the spells and offering formulae in Pyramid Texts and Coffin Texts, in which the king was sometimes referred to as Osiris and, in other places, as a subject of the god, he concluded that “...the king’s identification with Osiris was ritually contingent, valid within the context of the rite in which it was asserted, but not in the world beyond the spell” (M. Smith 2017: 155, 265–266).

18 Porter and Moss also mention two New Kingdom stelae from Saqqara representing King Teti. One is a stela of Amenemhat, overseer of horses, dated to the Eighteenth Dynasty, showing the tomb owner with offerings to Osiris with King Teti behind him (Porter and Moss 1981: 572; Gunn MSS. xix. 2). The second one is a stela of draftsman Prahsetji, dated to the late Eighteenth/early Nineteenth Dynasty, where King Teti makes an offering to Osiris, and the tomb in Sheikh Abd el-Qurna, where the owner and his wife are represented below in an adoration scene (Porter and Moss 1962: 572; Boston Museum, Acc. No. 25.635; <https://collections.mfa.org/objects/125389/stele-of-ptahsetji?ctx=24fafd43-6834-4572-876e-c479466ba308&idx=0>, accessed: 07.06.2023). Another example might be a relief showing King Menkauhor from the Fifth Dynasty, which had originated from an unknown Eighteenth-Dynasty tomb and was found in the Memphis Serapeum (Louvre, N° inv. E 3028 <https://collections.louvre.fr/en/ark:/53355/cl010030295>, accessed: 29.07.2023).

19 Examples of special acknowledgment of Mentuhotep II by Senuseret I and Senuseret II can be seen in the form of their cartouches placed on the statue of Mentuhotep II, found in the temple of Amun at Karnak, and scenes of adornment by tomb owners in TT 31 and TT 277 (Habachi 1963: 50–51).

The mirrorlike reflection of the ritual relation of king-as-god and god-as-king can be seen in the change that occurred in the veneration of Osiris, who might be addressed with pleas for help as a ruler of the contemporary world (M. Smith 2017: 498). This was especially clear in the 1st millennium BC, when numerous small chapels and temples were built for this god.

Habachi and Smith have largely focused in their discussions on the written sources concerning the relation between god/Osiris and king, omitting the issue of the king's image with a divine attribute in the form of the divine beard.

As mentioned above, the image of Mentuhotep II in Khety's tomb (TT 311) is the earliest known image of the king in

a private funerary context, and the first such image of the king with divine features. In TT 311, Mentuhotep II wears the divine beard, characteristic for Osiris, but also for Geb and Amun Min. Although Mentuhotep II identified himself with the latter, the funerary context indicates that in this case it is more likely that the king was functioning with Osirian features, and his presence was of a ritual nature as an extension of *hṯp-di-nswt* offering formulae. Most probably Khety's intention was to secure for himself a good afterlife in the presence of the king and the god Osiris through continuous commemorations by visitors who came to pray not only to Osiris, but also to the deified great ruler, whom Khety had served.

## KING AS CONTEMPORARY RULER

The group of images introducing the king in his deified form can be juxtaposed with representations of the king as a ruler of the state. These are mostly depictions of the pharaoh hunting, fishing, being nursed, or sitting on the lap of a tutor (Dodson and Ikram 2008: 221). In a few cases, the deceased was portrayed at the moment of special interaction with the contemporary monarch, for example in TT 73 Amenhotep was shown adoring Hatshepsut (Säve-Söderbergh 1957: 1–10), and in TT 40 Amenhotep Huy was depicted during his nomination as viceroy of Kush by Tutankhamun (Porter and Moss 1970: 65, 75).

Although the practice of depicting the monarch in non-royal tombs was not confined to the Theban necropolis, examples

from outside Thebes are few. It may be that the scenes depicting royalty were an exclusive privilege of distinguished noblemen who had the benefit of direct contact with kings and/or royal family, and they commemorated actual interactions with the king, testifying to the given individual's high status (Hartwig 2004: 54–76; Kamrin 2015: 32). For example, Vizier Rahotep in his tomb in Sedment is shown kneeling before cartouches of Ramesses II (Petrie and Brunton 1924: 29, Pl. LXXI.2; Porter and Moss 1968: 117). In Saqqara, Vizier Paser had himself depicted on a stela with Ramesses II (Dunham 1935), and Hormin, the overseer of the royal apartments of the harem, chose to be shown receiving an award of collars from Sety I.<sup>20</sup>

20 *Stela des colliers*; Louvre, N° inv. C 213; <https://collections.louvre.fr/en/ark:/53355/cl010025430#> (accessed: 20.10.2022).



## LOCATION WITHIN THE TOMB — PLACE WITHIN THE THEBAN LANDSCAPE

Middle Kingdom representations of kings in private tombs are few, making it difficult to identify patterns in their location and orientation. The figure of Mentuhotep II in TT 311 was depicted standing, most likely in a niche near the entrance [see *Fig. 2:a*]. Excavation reports do not specify whether the king was facing toward the inside or outside the tomb. There are no known parallels to royal images from earlier non-royal tombs that could help determine the location of the king's representation within TT 311. However, should the arrangement of royal representations be modeled after those from royal tombs, which is likely taking into consideration the pattern seen in later tombs, the king was most probably placed on the eastern side of the corridor, facing left, towards the entrance, i.e. towards the outside of the tomb. The second known royal representation from the Middle Kingdom, that of Senuseret I in the tomb of Senet (TT 60), was placed on the southern wall of the corridor, looking right (east), towards the entrance to the tomb, and “approaching” the figure of the tomb owner [see *Fig 3:a*].

The scene of adoration of the cartouches of Senuseret I in the tomb of Djefaihapy in Asyut is placed on the

southern side of the eastern wall of the outer hall, while the hieroglyphs of the cartouches face away from the entrance and towards the tomb owner, who is shown adoring them [see *Fig. 4:a*] (Griffith 1889: Pl. 4). The New Kingdom already had an established compositional pattern of incorporating the figure of the monarch in private tomb decoration, referred to as *Blickpunktbild*.<sup>21</sup> The royal figure, presented either as a worshipped deity or as the ruling king, would usually occupy the most prominent place, giving the visitor an opportunity to almost immediately notice him in direct interaction with the tomb owner. These scenes were usually located in the outer hall or at the beginning of the corridor, flanking the entrance to the inner part of the tomb. The royal figure was shown sitting or standing in a kiosk, facing the entrance, while the image of the tomb owner approaching in adoration was oriented as if entering the tomb.<sup>22</sup>

The placement of royal representations shows no correlation with the geographical alignment of the tomb's axis or entrance, but rather aims to achieve the greatest impact in displaying the deceased and their distinguished biographies. Similarly, on a broader scale,

21 This special composition of the scene, referred to by Arnold as the *Blickpunktbild*, denotes a scene that occupies the most prominent and exposed place (Di. Arnold 1962: 128). Engelmann-von Carnap has shown that this pattern was followed by most Theban tombs from the Eighteenth Dynasty (Engelmann-von Carnap 1999: 245–246; Bács 2006: 4; Stupko-Lubczynska 2021: 204–205).

22 Theban tombs TT 40, TT 63, TT 110; TT 41, TT 51, TT 178 and TT 296. Even though the Ramesside depiction of Mentuhotep II in TT 31 is placed differently (in the niche, not in the corridor), it still complies with the concept of *Blickpunktbild*.



the prominent placement of noblemen's tombs in the Theban necropolis was meant to grant the deceased not only

an eternal view of the king's mortuary temple, but also remote participation in festive processions.<sup>23</sup>

## CONCLUSIONS

The presence of representations of gods and kings in non-royal tombs was a result of a long process of evolution of the decorative canon. It began in the Old Kingdom, when Anubis and Osiris were occasionally depicted on tomb walls, and the king was commonly mentioned in offering formulae and tomb owners' autobiographies. Both Osiris and Anubis were strongly associated with the funerary cult, and Osiris himself was identified with the deceased king or a collective of past kings — the royal ancestors. The decorative canon then gradually evolved towards the inclusion of the figure of the king among the visual means of securing a better afterlife.

The representation of King Mentuhotep II in the tomb of Khety is the earliest documented example of a royal image in a private context dated to the Middle Kingdom, and it finds no parallels in the imagery of previous periods.<sup>24</sup> Scenes depicting monarchs, scarce as they were during the Middle Kingdom, became a standard feature in decorations of noblemen's tombs in the New Kingdom, especially in the Theban region. In the latter tombs, the royal image was either a subject of divine worship or a testimony to the high standing of the deceased

in the royal court arising from their exceptional relations with the king. This aggrandizement of the tomb owner might also take on a somewhat indirect form in scenes of adoration of cartouches, as in the case of Djefaihapy in Asyut.

The fragment of the relief showing Mentuhotep II's divine beard, recently rediscovered by the PCMA UW, is typical of this ruler's portraits from other sites and complementary to his divine image. The representation in Khety's tomb might have subsequently served as a model for depictions of the deified pharaoh in Ramesside tombs as, judging by numerous graffiti left in TT 311, it must have been visited frequently. Royal images in noblemen's tombs of the Middle Kingdom show that the preferred place and position for these motifs was the outer part of the tomb — either the corridor (probably TT 311, TT 60) or the hall (Tomb No. 1 in Asyut), with the king looking out towards the tomb entrance. This outward orientation and *Blickpunkt* position were maintained in the New Kingdom. The depiction of the king and its specific placement served a number of purposes, one of them being to demonstrate the exceptional status of the tomb owner and his special rap-

23 A similar attitude can also be observed outside the Theban area. In Abydos, the route of the procession with the figure of Osiris on a bark leading to his tomb in Umm el-Qaab was lined with cenotaph chapels allowing their owners the best possible view and spiritual participation in the festival (Leahy 1989: 42–57; M. Smith 2017: 233).

24 On a possible example of a royal image in TT 386, see above, note 12.

port with the king. It may be compared to Old Kingdom texts carved on tomb façades to showcase special acts of royal grace towards their owners. The dead pharaoh was also represented as Osiris and as an embodiment of all royal ancestors. Osirian presence in private tomb decorations likewise changed over time. Prayers to Osiris in *hṯp-di-nswt* formulae were already present in Old Kingdom inscriptions; then, the Middle Kingdom brought the introduction of the image of King Mentuhotep II with Osirianizing

features in TT 311 and perhaps King Senuseret I as Osiris (as might be the case in TT 60); finally, in the New Kingdom, the images of Osiris himself, and of a deified king from the past, served to protect the deceased in the afterlife.

Further efforts to reconstruct the scene showing Mentuhotep II in TT 311 may contribute to the understanding of its symbolic meaning and the role it played in the decorative program of Khety's tomb and other funerary contexts.

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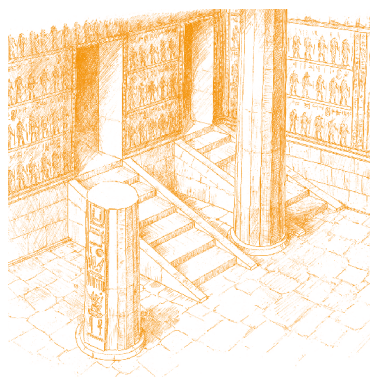
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# Enigma of the niches in the eastern wall of the Royal Mortuary Cult Complex in the Temple of Hatshepsut at Deir el-Bahari



**Abstract:** The paper offers an explanation of the misalignment of blocks and their decorations in two cultic niches in the Vestibule of the Chapel of Hatshepsut in the Royal Mortuary Cult Complex. Detachment of the niches from the adjacent walls, discrepancies in their dimensions, and intentional absence of jambs have led the author to conclude that the niches were reconstructed in this spot after having been removed from their original location in another part of the temple.

As the previously matching elements were reassembled in the new location during the reign of Queen Hatshepsut, the correct reconstruction of their decoration proved impossible, as the decorated blocks were irreversibly damaged.

**Keywords:** niche, plinth, connections of courses of blocks, land subsidence, temple expansion

## INTRODUCTION

One of the most important parts of the temple, the Royal Mortuary Cult Complex, was located on the southern edge of the Upper Terrace [Fig. 1]. This complex consisted of two chapels and vestibules, five niches, and a courtyard. Out of these rooms, the most important

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was the Offering Chapel of Hatshepsut. The eastern wall of the vestibule in front of the entrance to the Chapel of Hatshepsut holds two cultic niches, *de facto* minuscule chapels.<sup>1</sup> Their spatial solutions and structural details, unusual from the perspective of architectural and constructional principles, make these features enigmatic. They were both located in a relatively thin wall (only 1.04 m thick)<sup>2</sup> that separated the Royal Mortuary Cult Complex from the Room with a Window,

and their placement severely distorted the otherwise regular layout of the latter room [Fig. 2].<sup>3</sup> In addition, several blocks used in their construction had been cut in a way that had caused damage to their decoration. The slope of the flooring inside the niches has led researchers to attribute their state to an earthquake, land subsidence, or the pressure of the tower of the Coptic monastery that stood partly on top of the walls of the vestibule niches, which could have led to deformation and

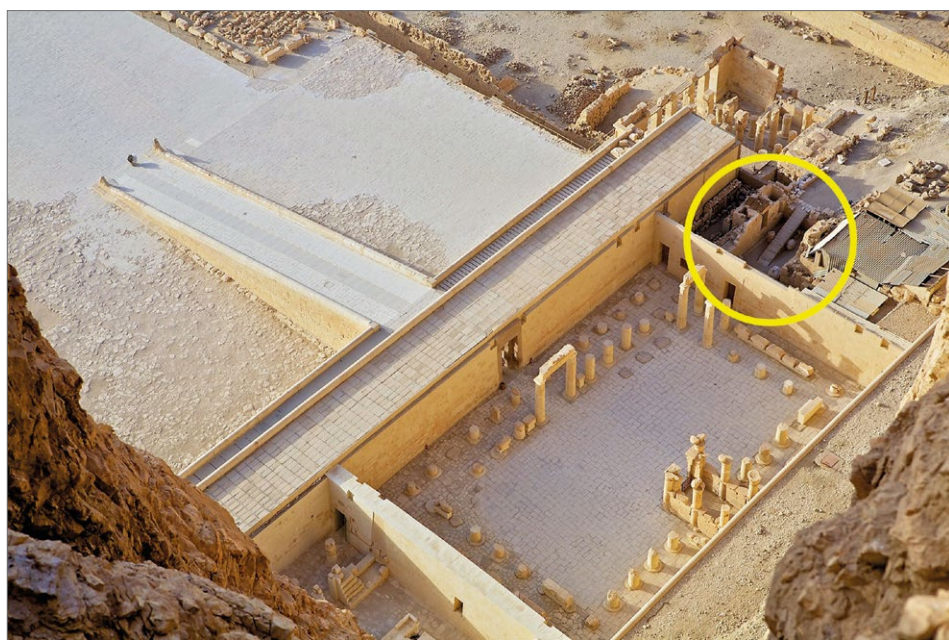


Fig. 1. Location of the Royal Mortuary Cult Complex on the southern edge of the Upper Terrace of the Temple of Hatshepsut (Photo M. Jawornicki; processing A. Kwaśnica)

- 1 On the typology and functioning of niches in sacral architecture, see Budzanowski 2004: 38–43 with collected literature. See also Iwaszczuk 2016: 206–207; 2017: 115 with bibliography of the two niches.
- 2 The western wall of the Upper Courtyard is 1.60 m thick, while the southern and northern walls of the Upper Courtyard are 2.40 m thick at the base and taper to about 1.35 m at the top (Wysocki 1986: 213).
- 3 The Room with a Window most likely served as a symbolic Slaughterhouse (Karkowski 2001: 133–134). For the proposed cosmological symbolism of this room and its links with the solar cult, see Białostocka 2014.

damage (Caban 2015: 80), or faulty reconstructions carried out in the course of the last century.<sup>4</sup>

The subject of these distortions was taken up by Mariusz Caban (2015: 76–82), an architect, who pointed to defects in the decoration of the niches and formulated some conclusions regarding their causes. Caban stated that their causes were as mentioned above: land subsidence, earthquakes, and multiple repairs performed not only in the

building's initial phase, but also during later stages of its functioning. He also blamed the activity of the French architect Émile Baraize inside the temple (Caban 2015: 81).<sup>5</sup>

An in-depth architectural study of the Upper Terrace has led the present author to question the conclusions put forward in past scholarship concerning the construction of the niches and to reassess the causes of their damage. The results of this research are presented herein.

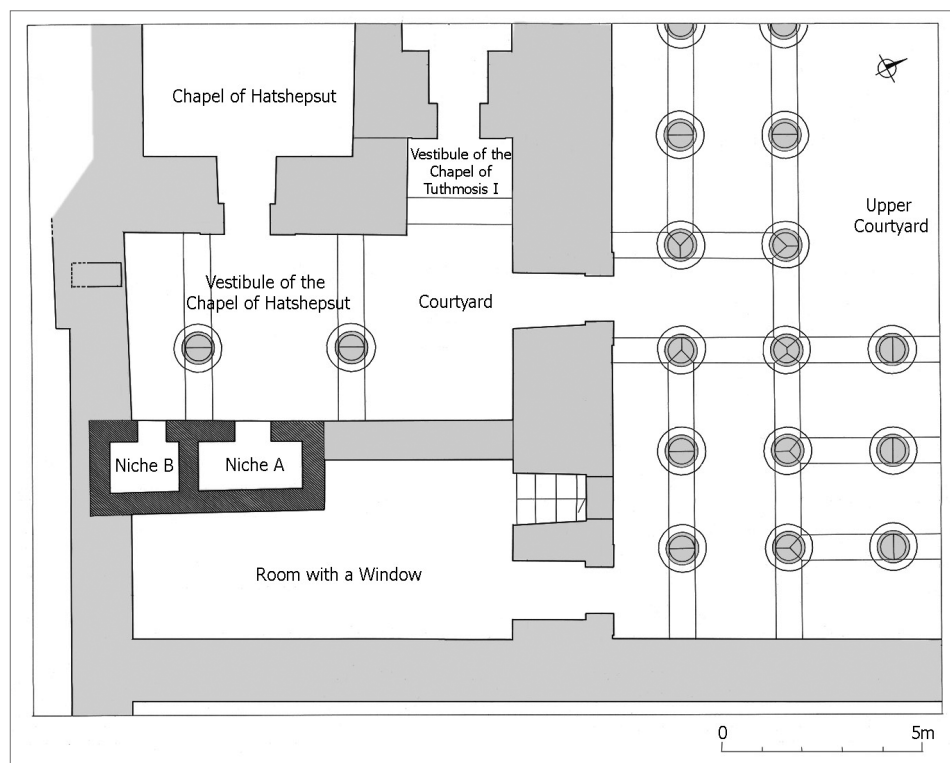


Fig. 2. Niches A and B located between the Vestibule of the Chapel of Hatshepsut and the Room with a Window (Drawing A. Kwaśnica)

- 4 It is important to add that the niches were inaccessible (most probably due to damage) or blocked during the Coptic and Greek periods. This is indicated by the lack of graffiti from these times inside the niches. See Godlewski 1986: 33, note 71, Fig. 13, Pls I–III; Łajtar 2006: Fig. 6.
- 5 Repairs in the niche close to the Southern Hall of Offerings were also reported by Edouard Naville (1896a: 5).



## EXTENSION OF THE SOUTHERN PART OF THE UPPER TERRACE

The Royal Mortuary Cult Complex was erected in very challenging terrain. Prior to its construction, a single artificial platform supported the walls of the southeastern corner of the Upper Courtyard. Its southern side was occupied by the Slaughterhouse (Room with a Window) and probably a storage

room (the later Chapel of Thutmose I) [Fig. 3].

The walls of the later Chapel of Thutmose I and the southern wall of the courtyard differed structurally from the walls of the extension in the northern part of the Upper Terrace. The former consisted of even courses of large blocks,

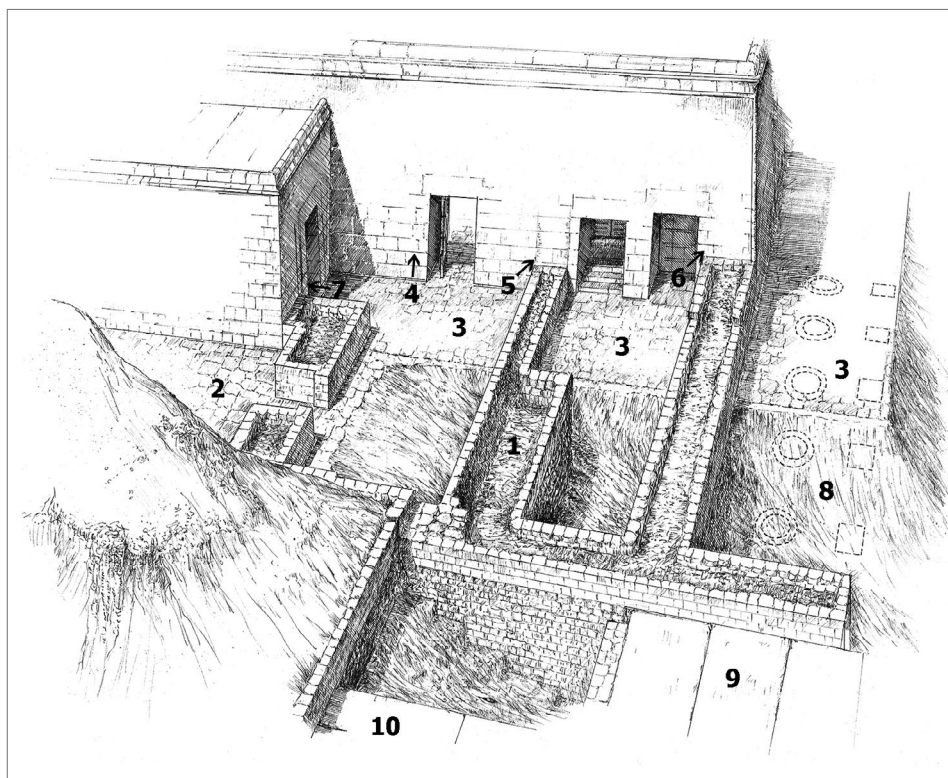


Fig. 3. Visualization of the southern part of the Upper Terrace at the time of the construction of the Royal Mortuary Cult Complex. View from the south. 1 – location of Niches A and B; 2 – Chapel of Hatshepsut; 3 – artificial platform in the southeastern corner of the Upper Court, built in the early construction phase of the temple; 4 – portal leading to the Upper Court, lacking the decorative band [see Fig. 5]; 5 – added eastern wall of the Royal Mortuary Cult Complex [see Fig. 7]; 6 – added southern part of the wall of the Upper Portico [see Fig. 6]; 7 – decorative band cut in an originally flat wall after transformation of the storage room into the Chapel of Thutmose I; 8 – location of the columns and pillars of the Upper Portico; 9 – roof slabs of the Hather Shrine, Second Hypostyle Hall; 10 – roof slabs of the Vestibule of the Hather Shrine (Drawing A. Kwaśnica)



Fig. 4. Differences in the construction of the façades: a – Chapel of Hatshepsut and b – Chapel of Thutmose I (Photos A. Kwaśnica)





Fig. 5. Portal lacking a band around the entrance. Arrows indicate the place where it should have been. Decorations were executed on a flat wall, originally meant to be plain [see Fig. 3:4] (Photo and processing A. Kwaśnica)

while the extension was built of much smaller blocks [Fig. 4:a, b].<sup>6</sup>

Walls in this part of the temple were originally not meant to be decorated, as indicated by the lack of decorative bands around the portals [Fig. 5].<sup>7</sup> The decorations were executed after the establishment of the Mortuary Cult Complex.

Prior to the southward extension of the Upper Terrace, there was no platform under the southern part of the Upper Portico, which implies the absence of the portico wall, columns, and pillars, all of these being later additions [see Fig. 3]. The lack of interlacing between adjacent walls confirms it

6 It has been suggested that the southern and eastern walls of the Chapel of Thutmose I were added at different times, and that the façade was built at the same time as the façade of the Chapel of Hatshepsut (Barwik and Dziedzic 2021: 88–89, Pl. 30). However, the arrangement of the layers of blocks in the wall, as well as the size and shape of the blocks used, rather indicate that the Chapel of Thutmose I formed a homogeneous structure with the Southern Chapel of Amun and the southern wall of the Upper Courtyard. In addition, the construction methods applied in the façade and walls of the Chapel of Hatshepsut were different from those used in the other walls of the Royal Mortuary Cult Complex, indicating that these construction works were carried out in different periods (Kwaśnica and Pawlicki in preparation).

7 The façade of the Chapel of Thutmose I also lacked a band around the portal. The decoration was created when the former storage room was transformed into the Chapel of Thutmose I. Testimony of this can be found in the southern part of the façade, abutted by a wall of the Chapel of Hatshepsut. The fragment of the façade concealed behind the new wall is flush with the face of the portal, indicating that the entire wall was originally flat. After the wall of the Chapel of Hatshepsut was added, the wall face in the part of the façade of the Chapel of Thutmose I between the portal, the side walls and the ceiling were cut away to create a decorative band around the entrance.

[Fig. 6].<sup>8</sup> Jadwiga Iwaszczuk (2017: 89) also suggests that originally there was only a floor on the site of the Upper Portico, and the columns were a later addition.

In the new spatial arrangement, the

Royal Mortuary Cult Complex was separated from the Room with a Window by a new wall with niches, which was attached to the already standing southern wall of the Upper Courtyard [Fig. 7] (Wysocki 1992: 246–248).

## NICHES IN THE VESTIBULE OF THE CHAPEL OF HATSHEPSUT

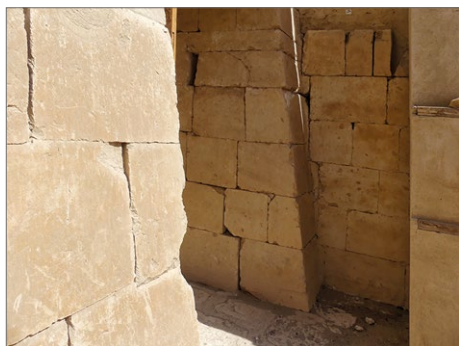


Fig. 6. Joint of the southern wall of the Upper Courtyard (left) and the eastern wall of the Room with a Window, which is simultaneously the southern part of the Upper Portico [see Fig. 3:6] (Photo A. Kwaśnica)

The niches were undoubtedly an important element of the Royal Mortuary Cult Complex. However, their location and architectural features seem less than ideal. Considering that the whole area from the eastern wall of the Room with a Window to the façade of the Chapel of Hatshepsut was open, one might expect a more fortunate design. As shall be demonstrated below, the builders faced considerable limitations and obstacles that hindered their endeavors. Analysis of these irregularities and challenges helps explain the reasons behind the niches' present state.

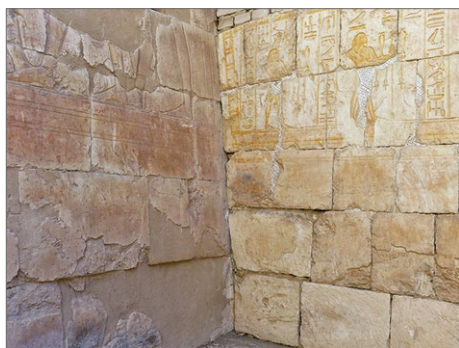


Fig. 7. Eastern wall of the Royal Mortuary Cult Complex abutting the southern wall of the Upper Courtyard [see Fig. 3:5]. The later wall was built of smaller blocks (Photo A. Kwaśnica)

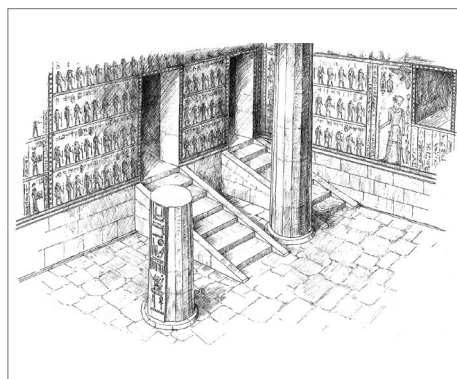


Fig. 8. Visualization of the southeastern corner of the Vestibule of the Chapel of Hatshepsut (Drawing A. Kwaśnica)

8 The lack of a bond between the walls is also visible on the other the side, in the portico (Barwik and Dziedzic 2021: 88).

### SIZE AND ELEVATION

The first peculiar trait of the niches is their large size. The niches practically constituted separate rooms,<sup>9</sup> indicating that offering rituals could have been carried out inside. The royal cult was an integral function of “temples of a million years” (Arnold 1962: 61).<sup>10</sup> The cultic nature of the rooms is also indicated by their wall decoration. The main motif represented in Niche A is offerings made by Hatshepsut and her *ka* spirit to

the bull and the seven celestial cows in order to secure food and prosperity for the queen in the Netherworld. To ensure success, and to protect the queen from all dangers, it was necessary for her to know a fragment of the *Book of the Dead* (chapter 148), which was inscribed on the wall of Niche A for the queen's convenience. In Niche B, Hatshepsut is shown making offerings to eight mummified solar deities, who are to aid her in her journey to the Netherworld (El-Sayed 1980;



Fig. 9. Blocks protruding from the face of the wall beneath the entrance to Niche B (Photo A. Kwaśnica)

- 9 Niche A: 2.65 m (length) × 1.17 m (width); Niche B: 1.64 m (length) × 1.25 m (width). The width was measured along the inner faces of the walls, at a height of 2.07 m. The niches are connected by a wall 0.49 m thick, decorated on both sides.
- 10 Arnold's statement is quoted by Gabolde (2009: 131) in a discussion of the function of the so-called building with niches in Karnak, which is decorated with representations of Thutmose II and Hatshepsut.



Karkowski 2001: 147–148). Such walk-in niches or chapels were usually located 0.4–0.5 m above the floor level and were accessed by flights of two or three steps.<sup>11</sup>

This raises the issue of access to the niches, which were located 1.01–1.04 m above the flooring of the vestibule.<sup>12</sup> It

seems that dedicated stairs must have been built from the side of the Chapel of Hatshepsut, most likely beginning flush with the bases of the two columns of the vestibule on the side of the entrances to these small chapels [Fig. 8].<sup>13</sup> The existence of such stairs is supported by the presence

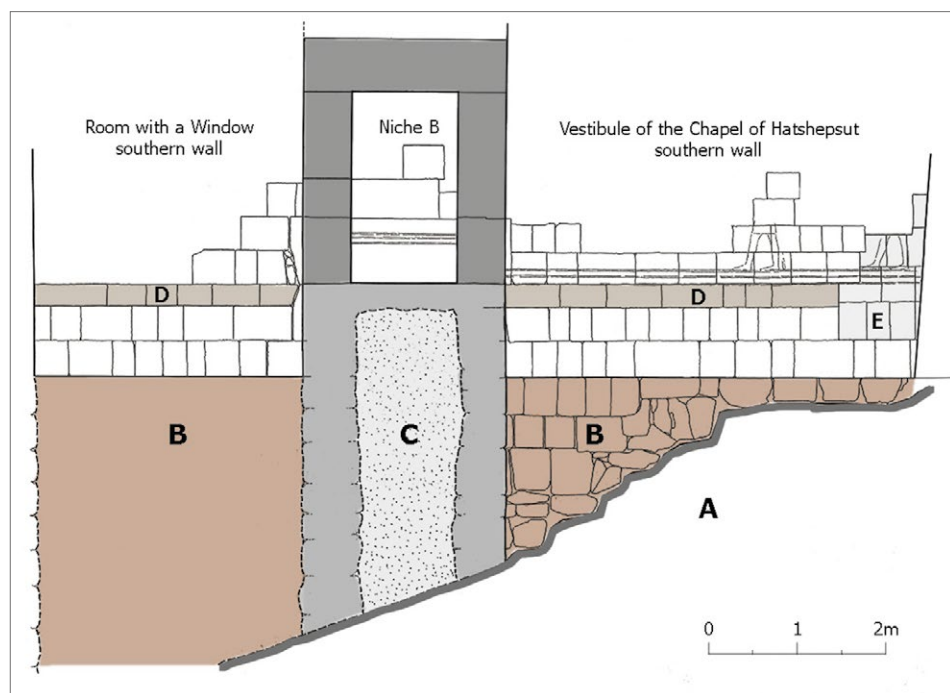


Fig. 10. Cross-section of the eastern wall of the Vestibule of the Chapel of Hatshepsut with a view of its southern wall and of the southern wall of the Room with a Window. A – Esna shale; B – stone foundation of the walls; C – rock debris; D – third layer of blocks leveling the walls and the platform under the niches; E – earlier fragment of the wall (PCMA UW | drawing A. Kwaśnica, based on a drawing of A. Brzozowska-Jawornicka)

- 11 E.g., the side rooms in the Statue Room of the Main Sanctuary of Amun or the niche in the Lower Anubis Shrine.
- 12 Niches in the Bark Hall and in the western wall of the Upper Courtyard were at a similar (1.03 m) or higher (1.55 m) level, but they were not meant to be entered. They also differed from Niches A and B in size and shape, and, most importantly, in the fact that they had three walls and openings closed by a door in place of the fourth. Niches A and B, however, have four walls, all of them decorated, and only a small part of the texts is visible from the outside.
- 13 Based on the fragments of architraves found, it was possible to establish that the axis of the columns was located at a distance of 1.75 m from the eastern wall. Therefore, the space was big enough to fit six steps, each 0.35 m wide and 0.14 m high.



of blocks protruding from the face of the wall beneath the entrance to Niche B. They appear to be remains of a structure anchoring the stairs to the wall [Fig. 9].<sup>14</sup> The elevation of the entrances was not haphazard, given that the niches perfectly fit the decorations. The builders could have placed them 0.40–0.50 m above the ground, making access to them easier, but that was not the priority. Instead, the most important goal was apparently to harmoniously integrate the niches with the decorations of the western and southern walls.

### LACK OF JAMBS

The second atypical feature of the niches is the lack of jambs and door mountings, making them impossible to close. In the Temple of Hatshepsut, the only niches without doors were located in roofed spaces (in the chapels of Thutmose I and Hatshepsut — see Karkowski 2001: 152;

Barwik and Dziedzic 2021: 37–41). In addition, a small open niche is present in the southern wall of the Vestibule of the Chapel of Hatshepsut, 2.09 m above the floor [see Fig. 8]. In the case of large niches, however, no such examples have been found, and all other niches, chapels, and portals always had doors and could be closed. This raises the question of why Niches A and B were constructed differently.

### LACK OF INTERLACING WITH ADJACENT WALLS

Remarkably, the walls of the niches were not bonded to adjacent structures. The eastern wall of the Royal Mortuary Cult Complex, in which both niches are located, stood on bedrock that sloped towards the southeast [Fig. 10]. Test trenches in the Vestibule of the Chapel of Hatshepsut (Szafranski 2015: 184) revealed that the lower part of the eastern wall, the south-



Fig. 11. Eastern wall of the Vestibule of the Chapel of Hatshepsut with its third layer highlighted. In the southern part, this layer serves as the floor of both niches (PCMA UW | photo M. Caban, processing A. Kwaśnica)

<sup>14</sup> The new plaster, seen in the photo, shows that the wall was renovated, but it seems likely that the protruding blocks were not the result of a clumsy early modern reconstruction. The cutting of the protruding blocks was most probably the result of construction activities related to the Coptic monastery.

ern wall of the vestibule, and the southern wall of the Room with a Window were built together and bonded to form a T-shaped structure. The foundation of the southern wall stretched from the eastern wall of the Chapel of Hatshepsut, where it had the form of one layer of stones. As the slope of the bedrock grew steeper, near the eastern wall of the vestibule the foundation already comprised five courses and was two meters deep.

The bedrock also continued to slope under the Room with a Window. The rock substrate was located 3.8 m below the flooring of the entrance to this room (Szafranski 1995: 371–372), and in its southeastern corner it dropped below 6 m (Konikowski 1991: cross-section No. 14; Barwik and Dziedzic 2021: 87). The eastern wall of the Room with a Window, which closed off the new part of the temple from the east, belonged to the same structure.

During the construction of the new walls, the space between their founda-

tions was gradually filled to bring both areas (the vestibule and the Room with a Window) to level, thus creating an extension of the platform in the southern corner of the Upper Terrace. At that point, the builders reached for an interesting solution in construction of the floors of the niches. Once the walls of the T-shaped structure were two layers high above the flooring, the third layer was laid using narrow, long blocks. Their top surfaces, which formed a level, horizontal line in the wall faces, constituted the flooring of both niches [Figs 11–12].

The next step was the construction of Niches A and B. At this point, the simultaneous construction of the three interconnected walls was no longer continued. Above the third layer of blocks, where the decoration begins, the walls of the niches are detached from the adjacent walls. Niche B is not bonded with the walls on the southern side [Fig. 13:a, b], and Niche A was attached to the northern wall without observing the principles of masonry joints with

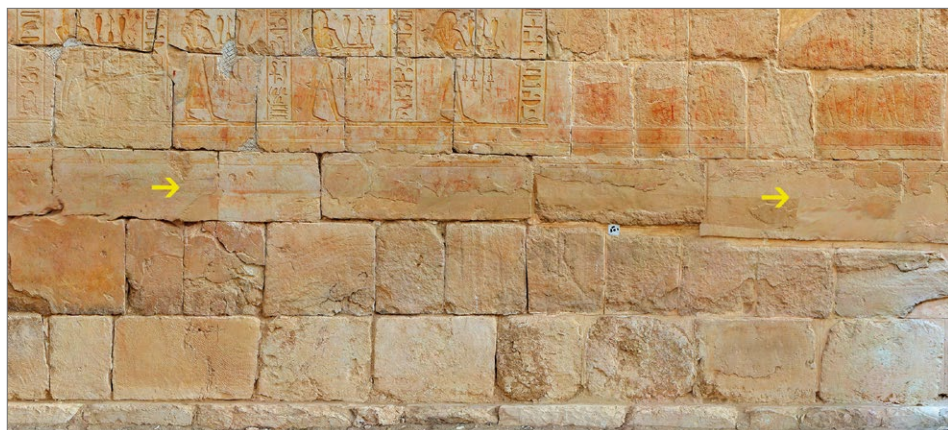


Fig. 12. Third layer of blocks marked with arrows. The blocks in this layer are longer and thinner than in other layers of the eastern wall of the vestibule. The top surface of this layer forms an even, horizontal line. The layer continues throughout the entire length of the southern wall of the vestibule and the Room with a Window [see Fig. 10] (PCMA UW | photo M. Caban, processing A. Kwaśnica)

the wall to the north. The layers of stone are not interlaced, and the blocks of the whole structure are haphazardly arranged. This leads to a conclusion that the niches were built separately from the wall adjoining them from the north [Fig. 14].

It therefore appears that Niches A and B were “inserted” in the wall structure. Although the construction is uniform at the level of the foundation and plinth, the walls are not bonded at the level of the decorated blocks.

### SIZE OF THE BLOCKS

Another relevant trait of the niches is the size of the blocks used in their construction. Nine massive blocks

(0.74–0.76 m high; length of the largest blocks: 1.28 m; 1.31 m; 1.49 m; more than 1.80 m) frame both niches at their lower level. They were placed directly on the plinth, which also served as the floor of the niches. By comparison, the blocks used in the vestibule, the Chapel of Hatshepsut, and the Room with a Window were several times smaller. This raises the question of why a group of very large and almost identical blocks was placed in this location. The only blocks of similar size found in the temple are the lintels of portals, chapels, and niches, present also in the Main Sanctuary and in the Lower Anubis Shrine.<sup>15</sup>

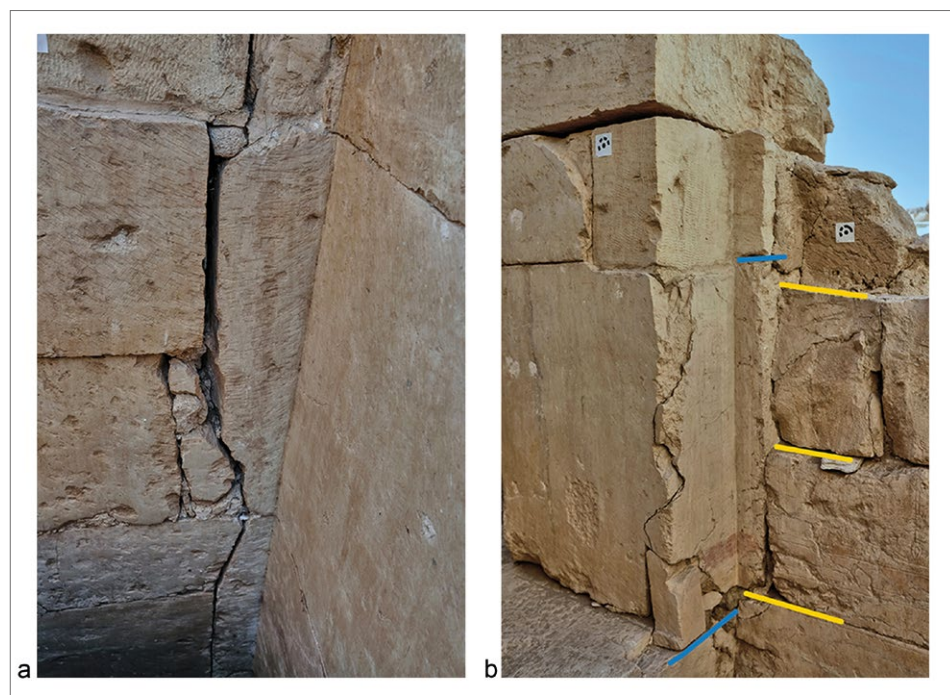


Fig. 13. Lack of bonding between niches and adjacent walls: a – blocks of Niche B added to the southern wall of the Room with a Window and the Vestibule of the Chapel of Hatshepsut (Photo M. Jawornicki); b – much smaller blocks adjoining the blocks of the niche (Photo M. Jawornicki, processing A. Kwaśnica)

15 Considered to be the oldest elements of the temple, see Wysocki 1992: Fig. 1; Iwaszczuk 2017: 86.

Most importantly, however, the blocks inside Niches A and B carry decorations that had been executed prior to the construction of these features and subsequently reassembled in an incorrect manner. This includes eight blocks with damage to their decoration caused by the trimming of their edges.<sup>16</sup> For more on this, see below.

### SLOPING FLOOR AND RESULTING PROBLEMS

Another issue is the incorrect alignment of the walls on the previously prepared floor. In order to understand these incompatibilities, a more detailed discussion of the interior of the niches is necessary.

It appears that the stone platform on which the niches were built posed a significant challenge for the builders. Measurements indicate that the platform slopes by 2.5 cm per meter towards the north, reaching a 12 cm difference in levels over the span equal to the length of the two niches. This was likely related to the sub-

sidence of the ground in the southeastern part of the Upper Terrace (Caban 2015: 79, Fig. 3). The floor level of the niches is parallel to the level of the floor in the Room with a Window. However, on the other side, the floor in the Vestibule of the Chapel of Hatshepsut was not parallel to the floor level of the niches, as the latter sloped more steeply towards the north.

The western and northern walls of Niche A stood on a plinth measuring several centimeters in height, built to level the structures. However, the eastern wall lacked such a plinth, which is why the decorative motifs in the corner are misaligned [Fig. 15]. To date, their erroneous position has been attributed to modern reconstruction work in the temple, repairing damage caused by subsidence, earthquakes, and alterations related to the activity of a Coptic monastery on this site. Careful scrutiny of the position and decoration of the blocks placed inside and outside the niches shows that the reason was, in fact, different.

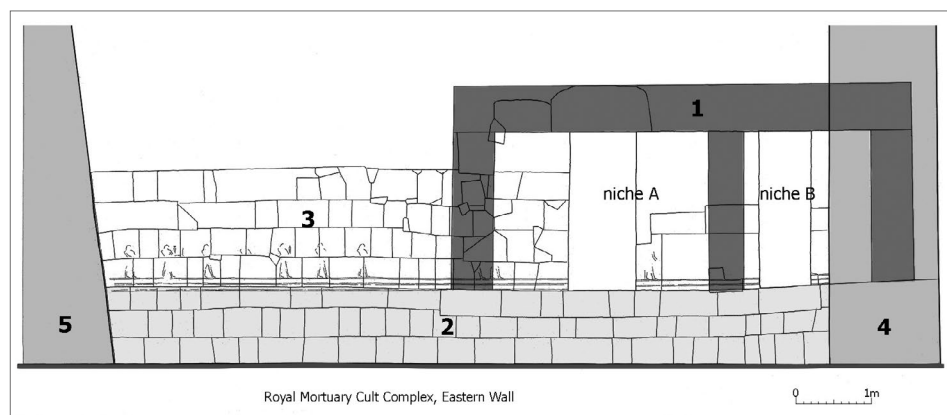


Fig. 14. Placement of Niches A and B in the northern part of the eastern wall: 1 – niches; 2 – three layers of the eastern wall; 3 – part of the wall with regular layers of blocks; 4 – southern wall of the vestibule; 5 – southern wall of the Upper Courtyard (Drawing A. Kwaśnica)

<sup>16</sup> The blocks with trimmed decoration were likely more numerous, but those from the upper parts of the walls have not survived.



## ALTERATIONS IN THE WALLS OF THE NICHES

Decoration was present both in the interiors of the niches, and on their external walls on the side of the Vestibule of the Chapel of Hatshepsut. Importantly, as the walls of the niches were one block thick, the blocks of the western wall were decorated on both sides. This is relevant because the original layout of the blocks required the decorations to be legible concurrently on the internal and the external sides.

### WESTERN WALL OF NICHES A AND B

Since this wall was erected on a sloping floor (see above), a wedge-shaped plinth was inserted under its lower end [Figs 16–17]. The wedge slightly raised the blocks, making them parallel to the vestibule flooring. However, this altered the alignment of the dado rail inside the niches. Instead of forming a straight line running across the entrances in both spaces, in Niche B the top levels of the dado rail on both sides of the doorway differ in elevation. In turn, in Niche A, the dado rail runs diagonally on the left and right-hand sides of the entrance [see Fig. 16].

One might think that the skewed dado rail and the plinth are second-

ary effects of earthquakes and incorrect reconstruction, but this is not the case. Proof that the decorated blocks were arranged correctly during the construction of the niches is found on the external face of the wall, where the decoration is properly aligned. Any later changes in the arrangement of the blocks would have affected the decoration on both sides of the wall. Had the plinth been removed, or the interior dado rail straightened, the exterior decoration, which has its horizontal lines parallel to the floor level of the vestibule, would have been disturbed [Figs 18–19]. Therefore, the placement of the western wall of Niche A on the slanted plinth and the slope of the dado rail were no doubt contemporary to the construction and decoration of the vestibule.

The same applies to Niche B with block No. 1 [Fig. 20:a]. From the outside, the dado rail is parallel to the floor of Niche B because the entrances to the niches were integrated into the external decoration [see Fig. 8]. The dado rail also continues on the southern wall of the vestibule [Fig. 20:b], meaning that this part of the temple was decorated at the same time.

To sum up, the mismatched decoration on the inner faces of the western walls of both niches caused by the sloping floor, the plinth in the northern part, and the tilt of the dado rail date back to the time of construction and decoration of the vestibule walls. Therefore, the misalignments inside the niches belonged to the same construction episode and were unrelated to later reconstructions.

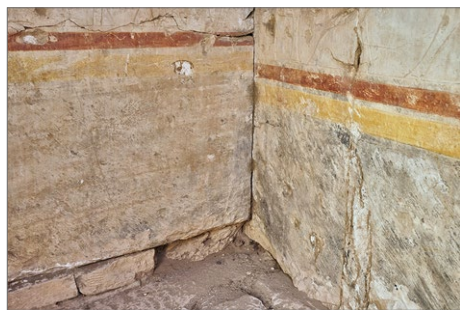


Fig. 15. Corner of the northern and eastern walls of Niche A (Photo M. Jawornicki)

### NORTHERN WALL OF NICHE A

Even more clues helping to explain the enigma of the niches could be observed on the northern wall of Niche A. The plinth continues below this wall, as well as under the western wall, proving that this leveling layer came into being at the same time as the niche. The dado rail continues on the same level from the western onto the northern wall, ruling out any subsidence of the blocks in that part of the structure. However, the most significant clue lies in the decoration itself. The northern wall bears an erased representation of Queen Hatshepsut standing in front of an offering table [Fig. 21:b]. Behind the queen is a relatively well-preserved figure of the royal *ka*. The entire scene, like all others in the temple, was framed by a decorative border, visible behind the royal *ka* in the left corner of the scene but missing on

the other side. The original large block with the dado and the offering table had been trimmed by several centimeters on the right-hand side, depriving the scene of the decorative border in that part. A sketch of the missing fragment [Fig. 21:a] and a reconstruction of the scene on the northern wall of Niche A are provided herein [see Fig. 21:b].

Based on the decoration, the original internal width of Niche A along the western wall can be reconstructed as 1.28 m. Given the current width of 1.17 m, it is easy to calculate that 11 cm are missing. This can be explained by spatial constraints. To restore the original width of Niche A, its eastern wall would have to be pushed out by 11 cm. This would cause this fragment of the wall to protrude from the face of the wall inside the Room with a Window, because, as previously mentioned, the wall had the

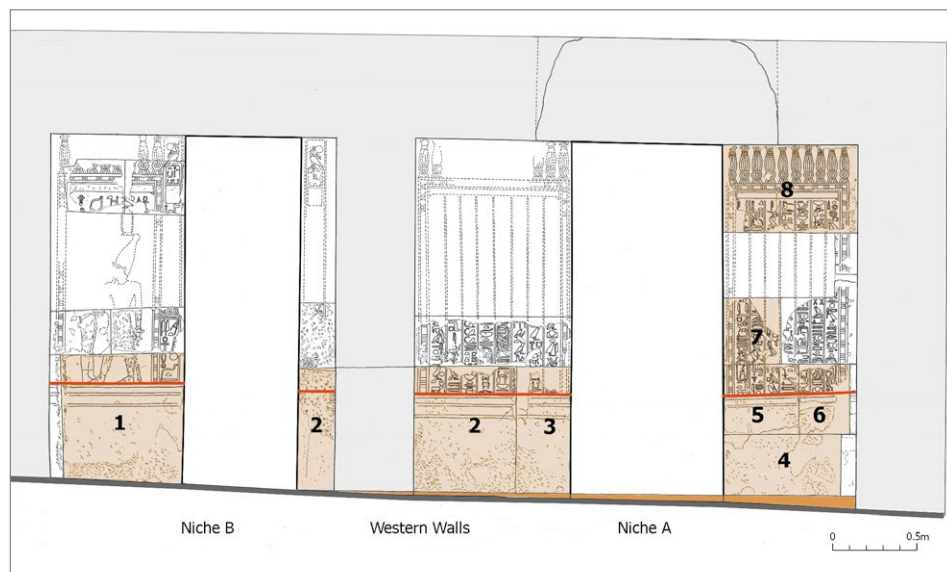


Fig. 16. Western wall of Niches A and B. The marked and numbered blocks were decorated on both sides. A wedge leveling this part of the wall is visible in the lower right corner, under Block 4 (Drawing A. Kwaśnica, on the basis of Egyptological documentation by J. Karkowski)



thickness of one block. Thus, any attempt to recreate the original appearance of the decorations on the northern wall inside Niche A would have caused the niche to protrude beyond the plinth [Fig. 22:a, b].

### NORTHERN WALL OF NICHE B

The wall separating the two niches is a similar case: it was also built of blocks, which had been decorated and subsequently cut in several places [Fig. 23:a, b]. Reassembly of the blocks to keep the original decoration was impeded by the limited space between the side walls of the niche, too small to recreate the full length of the northern wall. The eastern wall would have to be shifted by 6–7 cm to accommodate original decoration including the missing part. Interestingly, the blocks that had been cut off

were located in the lower and middle parts of the wall. In order to trim these blocks, the wall had to be completely dismantled. A reconstruction of the original wall decoration is shown below [see Fig. 23:b].

### SECONDARY MATCHING OF THE DECORATED BLOCKS

Caban (2015: 81) rightly pointed out that the decoration in the corners of Niche B had been trimmed and repainted during the reassembly of the niches in the vestibule. This applies, in particular, to the junction of the western and southern walls. The latter was, in fact, integrated into the wall flanking the vestibule of Hatshepsut from the south [see Fig. 2], and therefore constituted a very sturdy element of the structure. Two huge decorated blocks were placed in this spot in such a way that their faces were misaligned. For this reason, their decorated surfaces were cut at the joint, then plastered and painted again by the builders of the vestibule [Fig. 24].



Fig. 17. Blocks Nos 4–7 in the western wall of Niche A. The red line indicates where the top of the dado rail should be; the yellow line marks the wedge-shaped plinth (PCMA UW | photo M. Caban, processing A. Kwaśnica)

### PLATFORM BENEATH THE TWO NICHEs

A closer scrutiny of the dimensions of the platform on which the walls were erected helps explain the enigma of the niches. The width of Niche B along its southern wall is 1.25 m. The thickness of its outer walls is 0.55 cm and 0.56 cm, rendering the plinth 2.36 m wide in the southern part. Niche A, in turn, is 1.17 m wide along the northern wall, and the thickness of its walls is 0.52 and 0.55 m, giving a total width of 2.24 m

for the plinth. Thus, the plinth tapered towards the north by 0.12 m. However, the northern walls of the original Niches A and B, as calculated on the basis of their reconstructed decoration, were both about 1.28 m wide. The southern wall of Niche B, which retained its original dimensions, had a similar width.<sup>17</sup> Thus, the niches were meant to be rectangular in plan, but ended

up tapering towards the north. If the original-sized niches had been placed on the platform as it stands today, their back sides would protrude from the western face of the wall into the Room with a Window [see *Fig 22:a, b*]. Most likely, during the initial stage of the construction process, the plinth was built too small to accommodate the niches in their original size.

## RETRACING THE COURSE OF EVENTS

The data presented above indicates that the niches had been transferred from another place in the temple to

the vestibule of the Royal Mortuary Cult Complex when the latter was still under construction. Reconstructions

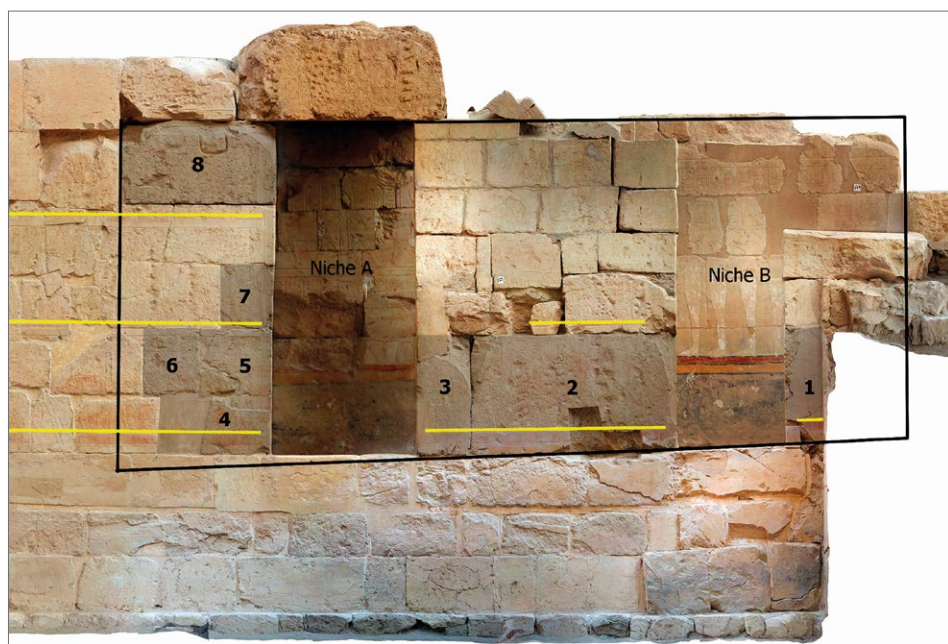


Fig. 18. Eastern wall of the Vestibule of the Chapel of Hatshepsut with the wedge-shaped plinth and the walls of the niches marked. Blocks Nos 1–8 are decorated on both sides. Yellow lines mark the horizontal elements (parallel to the floor) in the decorative scenes on the exteriors of the niches (PCMA UW | photo M. Caban, processing A. Kwaśnica)

<sup>17</sup> The width at floor level is 1.25 m, but it expands higher up and at the level of decoration it is about 1.28 m, matching the dimensions of the walls analyzed previously.

and architectural transformations resulting from the change of the function of some rooms are typical of many buildings erected by Hatshepsut, but the transfer of entire finished segments and their reassembly in another place remains without parallel. Both niches became part of a major construction project that resulted in the erection of the Royal Mortuary Cult Complex. The builders made optimal use of the limited area behind the southern wall of the courtyard. The undertaking involved preparing the building site for the Chapel of Hatshepsut by leveling the rock formation on the western side and building a sturdy retaining wall

from the southeast, down to the level of the Middle Portico.

An artificial platform was created in front of the future Chapel of Hatshepsut. Two niches were inserted into the wall built between the Vestibule of the Chapel of Hatshepsut and the Room with a Window. Thus, the Royal Mortuary Cult Complex was created on a newly prepared level surface [see *Fig. 3*].

Both niches were pre-made elements integrated into the newly created complex. They had to be dismantled and moved from their original location, which had changed its function. The niches were mostly made of large

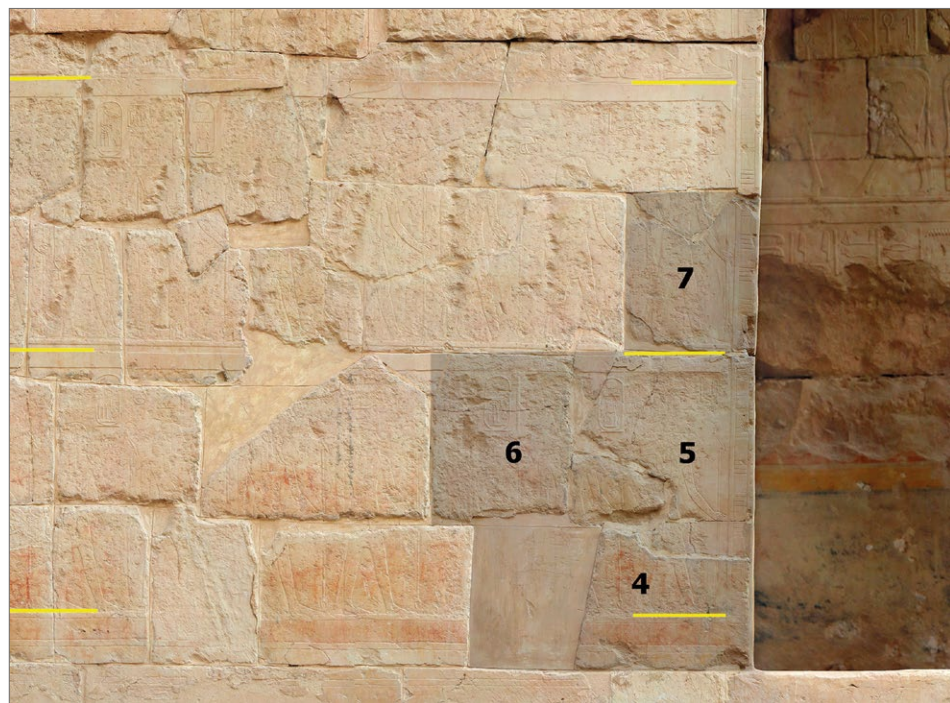


Fig. 19. Eastern wall of the Vestibule of the Chapel of Hatshepsut. Blocks Nos 4–7 are decorated on both sides, which means that they could not have been moved without destroying the scenes. The exterior decoration on the walls of the niches must have been executed when these blocks were placed in their present position (PCMA UW | photo M. Caban, processing A. Kwaśnica)





Fig. 20. Connection of the eastern and southern walls of the Vestibule of the Chapel of Hatshepsut: a – the dado rail on the eastern wall of the vestibule (PCMA UW | photo M. Caban, processing A. Kwaśnica); b – the dado rail on both walls is on the same level (Photo M. Jawornicki, processing A. Kwaśnica)

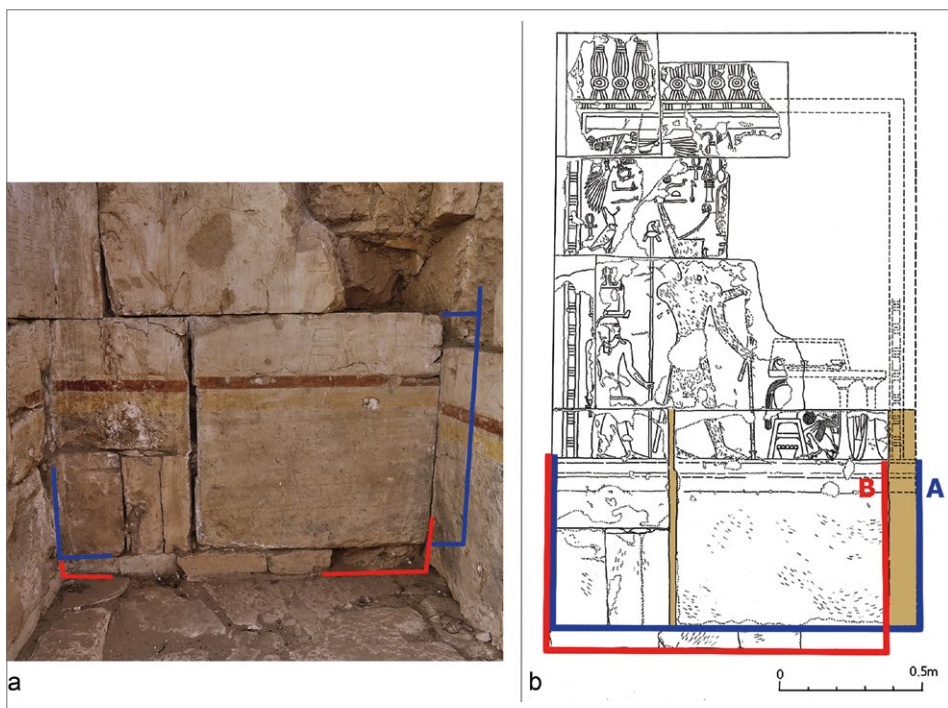


Fig. 21. Northern wall of Niche A: a – the blue line marks the original length of the wall, and the red line shows its current condition (Photo and processing A. Kwaśnica A. Kwaśnica); b – reconstruction of the wall. The cut fragments of the blocks are highlighted in brown. The blue line (A) marks the original floor level and width of the niche. The red line (B) shows the current floor level and width of the niche (Drawing A. Kwaśnica, on the basis of Egyptological documentation by J. Karkowski)

blocks and their disassembly was not difficult. The intention was to save the builders a lot of work involved in creating and decorating the same niches from scratch. This decision was most likely made for economic reasons and to reduce the time required to complete the construction. However, the builders encountered unexpected complications. Their cause was an unpredictable error in the planning of the foundation and platform, the dimensions of which were difficult to calculate precisely. The decorated blocks were removed from the original wall by roughly and unevenly cutting their back sides and re-

quired careful masonry work. However, it was not possible to cut each block separately. Firstly, both niches had to be reassembled in the new location, and only then could the rough blocks, which simultaneously became the face of the western wall of the Room with a Window, be cut down and leveled.<sup>18</sup> Cutting off too much would make the walls too thin. Leaving the walls too thick would lead to many uneven surfaces. As a result, after the final leveling of the face, there were still rough surfaces that had to be hidden under the mortar. Remains of this mortar and rough surfaces are still visible today [Fig. 25].

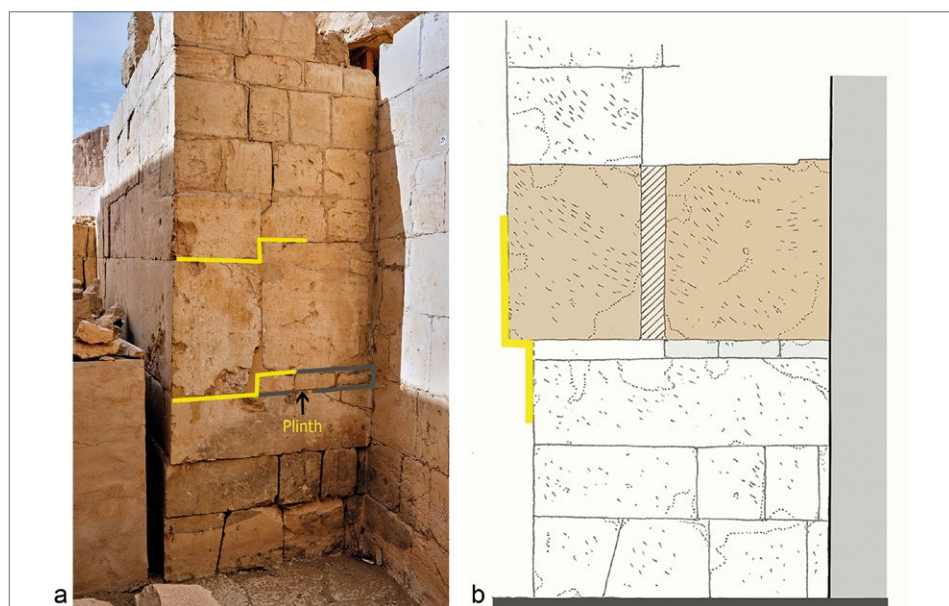


Fig. 22. Northern wall of Niche A: a – in the Room with a Window, showing the effects of placing the plinth under the wall (Photo M. Jawornicki, processing A. Kwaśnica); b – the drawing shows the niche in its original width (Drawing A. Kwaśnica)

<sup>18</sup> A remnant of the rough surface left after cutting a block placed on the platform can be seen in the southern wall of the Room with a Window. This fragment is a connector between the walls [see Fig. 13:a]. A rough block was placed on the plinth, and then the surface was cut to create a smooth face. The photo shows the uneven edge of the block, indicating the thickness of the cut layer.

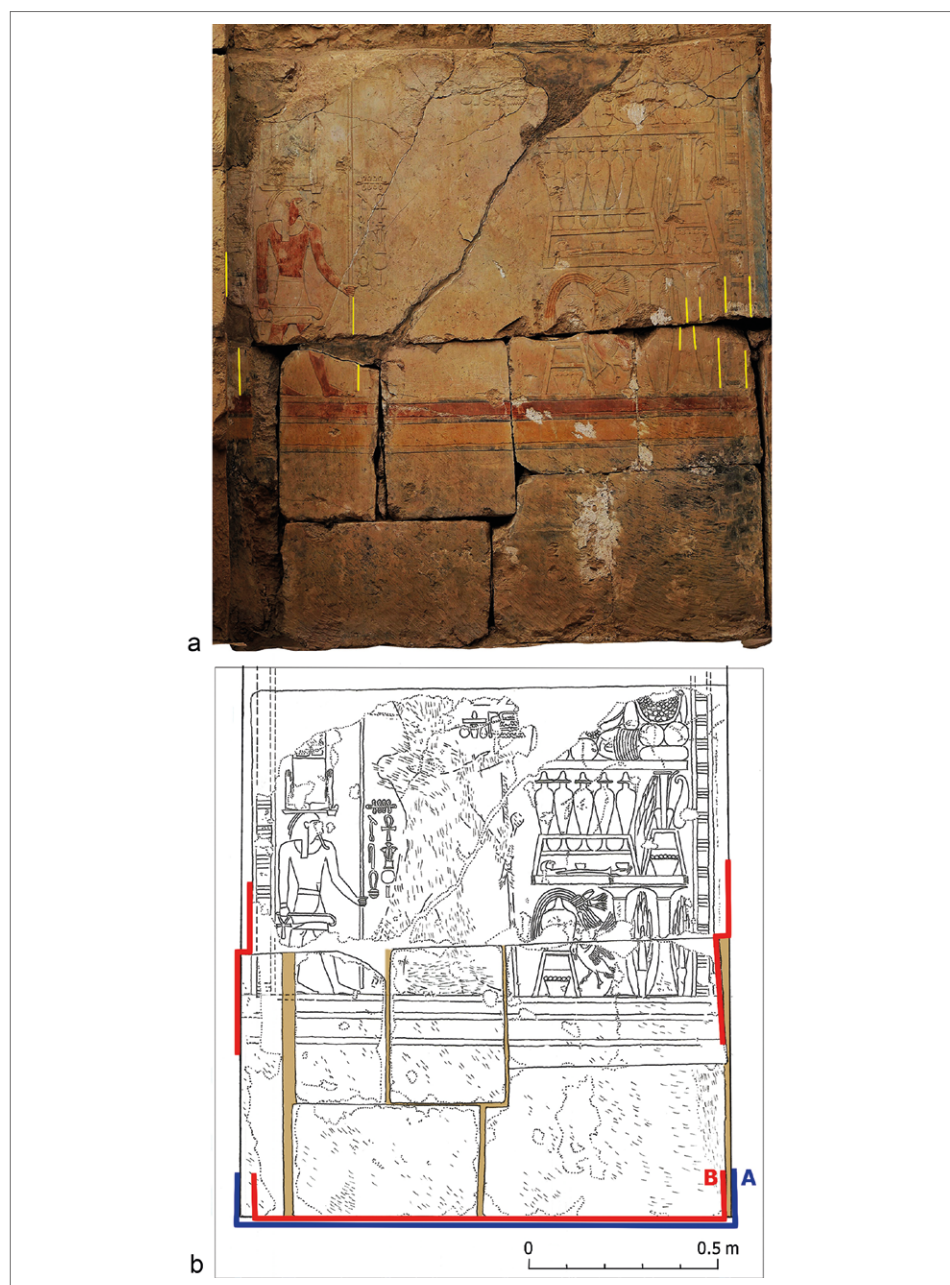


Fig. 23. Northern wall of Niche B separating it from Niche A: a – photo with the yellow lines showing the incorrect arrangement of the upper and lower blocks, which resulted in the deformation of the decoration (Photo M. Caban, processing A. Kwaśnica); b – reconstruction of the wall with the cut-off fragments of blocks highlighted in brown. The blue line (A) marks the original width of the niche. The red line (B) shows the current width of the niche (Drawing A. Kwaśnica, on the basis of Egyptological documentation by J. Karkowski)



Cutting the original exterior decoration from the side of the vestibule was also not a simple task.<sup>19</sup> Had the block been cut too deep or a piece of the edge chipped, a new piece would have been required in its place. This was much more difficult than inserting new blocks, as was usually done. In this particular case, inserting new blocks was impossible, since they were decorated on both sides. As a result of cutting away the outer layer of the face, the original jambs were removed



Fig. 24. Southwestern corner of Niche B. The faces of adjacent blocks do not form a single plane. In the time of Hatshepsut, both blocks were cut, plastered and covered with polychromy. Traces of ancient plaster are still visible on the surface (Photo M. Jawornicki, processing A. Kwaśnica)

as well. Thus, the transferred niches could no longer be closed.

Evidence of cutting off the mentioned layer of the face is a fragment of a large, original block of Niche B, which is also a piece of the southern wall of the Vestibule of the Chapel of Hatshepsut. This wall fragment reveals the thickness of the removed layer [see Fig. 13*b*].

In the light of the above, the exact dimensions of the plinth are nearly impossible to calculate. The final external dimensions of the niches had to be corrected on site during their reassembly. The only mistake that could have been avoided was building a platform with a non-sloping upper surface. On the other hand, the slope of the plinth may have also been caused by uncontrollable subsidence of a part of the foundations, which seems very likely upon examination of the third leveling layer of blocks of the eastern wall of the vestibule. At the time of construction, the plinth should have been parallel to the floor of the vestibule, and now it is not [see Niche B, Figs 11, 14]. Reconstruction of the niches in a new place, on a new pedestal, began with the placement of large slabs 0.74–0.76 m high around the entire plinth [Fig. 26].

Reassembling the entrance to Niche A turned out to be problematic. Since the floor of the niche sloped towards the north, the jambs placed on it were perpendicular to this level, but not to the floor of the vestibule. As a result, the doorway leaned to the left, towards the north. To level the doorway, a wedge-shaped plinth was

19 Since the decoration was inside the niches, it would have also been present on the face of the wall from which the niches were removed.



Fig. 25. Eastern wall of Niche B in the Room with a Window. Arrows indicate cavities patched with lime mortar most likely at the time of erecting the niches (Photo M. Jawornicki; processing A. Kwaśnica)



Fig. 26. Large limestone slab in the eastern wall of Niche B (Photo A. Kwaśnica)



constructed, but its use meant that it had to extend also under the northern wall. There was not enough space to reconstruct the northern wall of Niche A and the wall separating the niches in their original dimensions, so the decorated blocks had to be cut. In order to gain more space inside, the external wall on the side of the vestibule was cut in the northern part of Niche A. This operation caused variation in the wall thickness: from 0.56 m in the southern part of Niche B to 0.52 m in the northern part of Niche A, which was a continuation of the same wall. These were the additional consequences of building the niches on a platform that tapered towards the north due to a construction error. Further re-

duction of the thickness of the outer walls was ill-advised because they supported the heavy ceiling slabs of the vestibule of Hatshepsut, and excessive “slimming” would lead to the danger of ceiling collapse. The above sequence of events resulted in the mismatched wall decorations inside both niches already in the time of functioning of the Royal Mortuary Cult Complex during the reign of Hatshepsut.

### ORIGINAL LOCATION OF THE NICHEs

Hard though it may appear, answering the question about the initial location of the niches is in fact not difficult. A search for potential sites requires taking the following criteria into account:

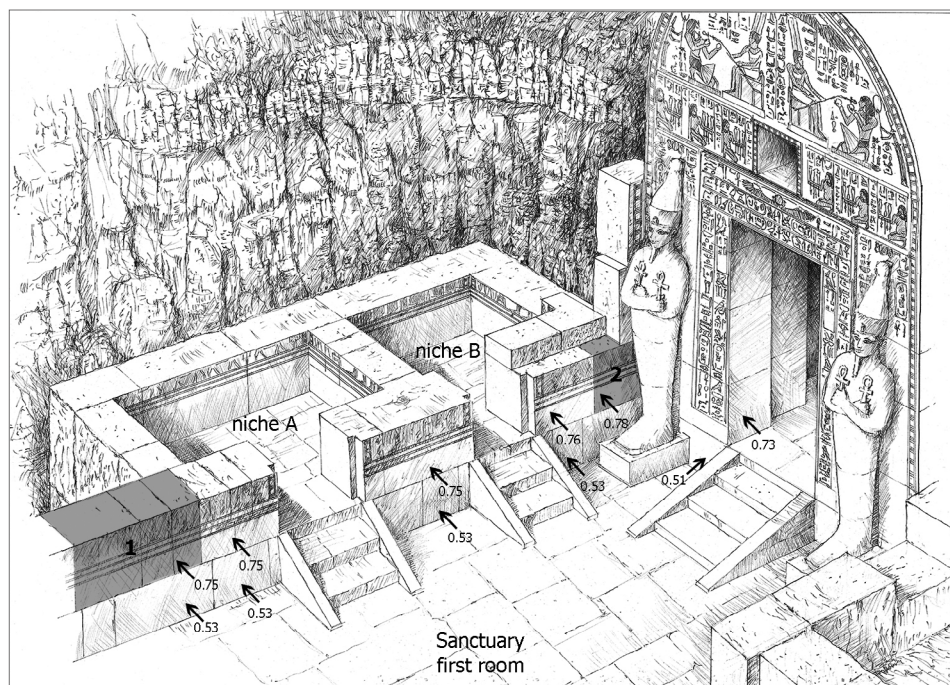


Fig. 27. Visualization of the first room of the Sanctuary prior to the removal of Niches A and B. 1, 2 – blocks that remained *in situ*. The blocks with specified heights (e.g. 0.75), given in meters, are indicated with arrows. The sizes of the blocks indicate that the lower course of the southern wall of the sanctuary and the lower course of blocks from Niches A and B had originally formed one structure (Drawing A. Kwaśnica)

- The niches came from a place that already bore wall decoration, and this decoration was altered during the construction of the Royal Mortuary Cult Complex.
- The room from which the niches were removed changed its function, which means that it had been in use prior to the building of the Royal Mortuary Cult Complex.
- The original room undoubtedly served (albeit only to a degree) an analogous function to Hatshepsut's Offering Hall, as the text in Niche A refers to Chapter 148 of the *Book of the Dead* about ensuring the queen's prosperity and supplying her with food in the Netherworld (Karkowski 2001: 146–147). The location of these niches in the temple must have been a crucial one, and the room from which they came must have been among the most important spaces in the original plan of the temple.
- The depth of the niches (2.36 m), and the fact that the back sides of the decorated blocks had a rough surface, both indicate that the niches were moved from a wall built against the rock face.<sup>20</sup>
- The lower course of blocks in both niches is 0.74–0.76 m high. Courses consisting of such large, regularly arranged blocks have been found in only one place in the temple:<sup>21</sup> the

southern wall in the Bark Hall, where blocks on both ends of the second course are of similar or identical height.<sup>22</sup> Inserting the blocks from the niches in-between these blocks would bring the entire second course to a uniform height almost throughout its length [Fig. 27].

The southern wall of the Bark Hall is virtually the only place in the entire temple that meets all of the criteria listed above. There is no doubt that it was built much earlier than the Royal Mortuary Cult Complex and it underwent significant structural changes (Pawlicki in preparation; Wysocki 1992: 245). The height of the lower course of blocks in the southern wall of the Bark Hall (0.53 m) is nearly the same along its entire length, which additionally speaks in favor of this location. Blocks of this height would have been ideal for a platform below both niches, as they would provide for a convenient entrance. Other than the Bark Hall, it is difficult to find a room in the temple that could accommodate such a large structure (over 5.5 m long) incorporating the two interconnected niches, especially ones that seem to have been originally associated with the royal cult.<sup>23</sup>

Considering whether the iconographic program of the niches, certainly appropriate for the Mortuary Complex, could have originally been executed in a wall of the Bark Hall, one must take one factor into

20 Walls this thick were not found in the temple; the two thickest ones (southern and northern walls of the Upper Courtyard) are 2.2 m thick at a height of 1.5 m.

21 The courses of blocks in the Upper Courtyard are 0.45–0.50 m high, while those in the Middle and Lower Porticoes reach 0.40–0.45 m.

22 The two blocks on the eastern end of the southern wall are 0.75 m high, and the last block in this course on the western side is 0.77 m high. The other blocks of this course were inserted later, as part of the reconstruction of the Bark Hall.

23 The southern wall of the Bark Hall is 9.06 m long.

consideration: the Bark Hall was built after the disassembly of a previously existing room of the sanctuary and after rebuilding the last room (Inner Sanctuary). Then the Inner Sanctuary ceased to serve as an offerings hall with false doors. From this point onward, the Hall of the Offerings of Hatshepsut in the Mortuary Complex carried out this function.<sup>24</sup> The Inner Sanctuary, reconstructed in 2020,<sup>25</sup> was originally dedicated to the royal cult. It proved to be the prototype of the Hatshepsut Chapel, later built in the Mortuary Complex with analogous decorative elements, but on a larger scale.<sup>26</sup> The niches must have originally been located in the “vestibule” of the Inner Sanctuary [see *Fig. 27*], where they served the same purpose as in the Royal Mortuary Cult Complex. Their relocation would have been a natural consequence of the construction of the new Hatshepsut Chapel. The Bark Hall was a new design, to which the previously existing niches did not

readily correspond. They were, therefore, dismantled and moved to another part of the temple (for more about the transformations of the Sanctuary, see Kwaśnica and Pawlicki in preparation).

Besides the Bark Hall, a look at the plan of the Upper Terrace of the temple practically leaves no other place that could be considered as the original location of the niches. Attempts to search for it outside the Upper Terrace area would, in turn, be speculative at best.

The relocation of Niches A and B is valid proof of a direct relationship between the reconstruction of the Main Sanctuary of Amun and the creation of the Mortuary Cult Complex. The existence of such decorated niches before the launch of construction work on the Royal Mortuary Cult Complex indicates that such a temple, albeit with a limited functional program, was already in operation on the Upper Terrace at that time.

24 The concept that the Bark Hall was a secondary function of this room was presented by Pawlicki 2000: 116.

25 The Inner Sanctuary was disassembled in the Ptolemaic period and replaced with a chapel of two sages, Imhotep and Amenhotep son of Hapu, preserved to this day. The primary and secondary versions of the Inner Sanctuary decorations were reconstructed on the basis of 20 wall fragments. Most of them were buried under the floor of the Bark Hall during the Ptolemaic period and some were reused to fill cavities in the walls (Kwaśnica and Pawlicki in preparation).

26 A previous reconstruction of the Inner Sanctuary (Barwik 2010: 4–12), which places an ebony naos found in 1893 by Naville (1896b: 1–4) inside the Inner Sanctuary, is, in my opinion, incorrect. The placement of the ebony naos in the Inner Sanctuary seems impossible for technical reasons. Firstly, the naos would not have fit in the doorway, which is less than 0.73 m wide (own measurements; according to Barwik's plan (2010: *Fig. 1*), the width of the doorway was about 0.74 m), while according to Barwik's reconstruction the naos was wider than 0.74 m. Therefore, it would have to be assembled inside the very narrow space of the Inner Sanctuary (0.82 m wide), which seems practically impossible. The strongest argument against this hypothesis, however, is that the walls of the naos bear the originally carved names of Thutmose II, not Hatshepsut. Consequently, the king making sacrifices to Amun in the naos decoration is Thutmose II (for a detailed description, see Naville 1896b: 1–4). It therefore seems unlikely that Hatshepsut kept the naos, which she had made for her deceased husband and predecessor, in the most important place in her own temple.



## CONCLUSIONS

The relocation of the niches indicates that the chronology of the temple's construction differed from the commonly accepted one. It seems that the temple was initially situated solely on the Upper Terrace.<sup>27</sup> The decorated walls from this period feature Hatshepsut with full royal titles, which may indicate that the construction work was completed around the 7th year of the reign of Thutmose III. It was probably only after the success of the expedition to the Land of Punt (9th year), around the 10th year, that the new construction project was launched. It involved the transformation of the small temple into a vast terrace complex with a lower temple, a causeway, and Tomb KV20. At that time, foundation deposits were made in the lower courtyard, paving the way for a new spatial arrangement. Dismantlement of the southern and northern walls of the first room of the sanctuary down to the first, lowest course<sup>28</sup> was associated with the creation of the Bark Hall. The appearance of the bark of Amun-Ra in the temple required the transformation of the previously existing courtyard into a "festival courtyard" (Gabolde 1993: 56–61; Iwaszczuk

2017: 95), which, in addition to functions related to making offerings to Amun-Ra, would also be associated with the celebration of the Beautiful Festival of the Valley to be held in this place. Following the new design, the Upper Court was turned into an enclosed courtyard surrounded on each side by two rows of columns, while previously the columns were only on the western side.<sup>29</sup> Three previously plain walls of the Upper Courtyard received decorations. Two of them (northern and eastern) bore scenes related to the participation of the bark of Amun-Ra in the Beautiful Festival of the Valley and in the Opet Festival.<sup>30</sup>

The design of the terraced Hatshepsut Temple, created in the 10th regnal year most likely by Senenmut,<sup>31</sup> is widely assumed to have been an original project, implemented in stages from the time of the queen's coronation in the 7th year. However, the niches bearing decoration related to royal cult, relocated from a different part of the temple, show that the chronology of the subsequent stages of the construction of the temple requires further scrutiny and revision.

27 The first investments in the Middle Terrace were directly related to the reconstruction of the Upper Terrace (Kwaśnica forthcoming a).

28 Two niches on the northern side, also sharing a wall (decorated on both sides) were dismantled and partly adapted to the new temple design (Kwaśnica and Pawlicki in preparation).

29 Based on the present author's reconstruction of the architraves on the Upper Terrace in 2010–2017 (Kwaśnica forthcoming b).

30 A detailed analysis of the transformations of the Upper Court is in preparation (Kwaśnica and Pawlicki in preparation).

31 Senenmut received extensive privileges related to the temple in Deir el-Bahari — tomb TT 353 under the Lower Courtyard and the opportunity to place his images behind the doors of all rooms in the temple.

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# Archaeological survey in Miseeda, Sudan (season 2022–2023)



**Abstract:** The general aim of the archaeological survey in Miseeda was to understand the archaeological context of the church at site MAS021. The survey is part of a larger project entitled “The Good Shepherd of Miseeda. An image in the context of the changing cultural landscape of the Third Cataract of the Nile” directed by Dobrochna Zielińska (Faculty of Archaeology, University of Warsaw). A total of 294 archaeological sites covering the periods from prehistory to the modern times have been recorded (13 verified sites and 281 previously unknown sites).

**Keywords:** Survey, Nubia, Sudan

## INTRODUCTION

The general aim of the archaeological survey in Miseeda was to understand the archaeological context of the church at site MAS021. The church in Miseeda is located at a distance of approximately 1 km from the Nile Valley, on a granitic rock outcrop across Wadi Farja. Based on the results of previous surveys in the area, the church appeared to be an isolated, single building removed from other known medieval settlements (Osman and Edwards 2011: 325–326). It was constructed against a boulder with

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### **Acknowledgments**

We would like to thank the National Corporation for Antiquities and Museums of Sudan for their support and the residents of Miseeda for their hospitality.

The project's host institution is the Faculty of Archaeology of the University of Warsaw. The project is funded by the National Science Centre, Poland (agreement No. UMO-2019/35/B/HS3/02440).

The archaeological survey was conducted from 20 to 30 November 2022 and continued from 19 January to 2 February 2023. The survey team comprised (in alphabetical order): Joanna Ciesielska, Mariusz Drzewiecki, Karel Innemée, Hanna Kurcz, Paweł Polkowski, Katarzyna Rosa, and Dobrochna Zielińska.



Fig. 1. General view of the church in Miseeda (site MAS021). The arrow points to the location of the boulder with the rock drawing (Photo M. Drzewiecki)

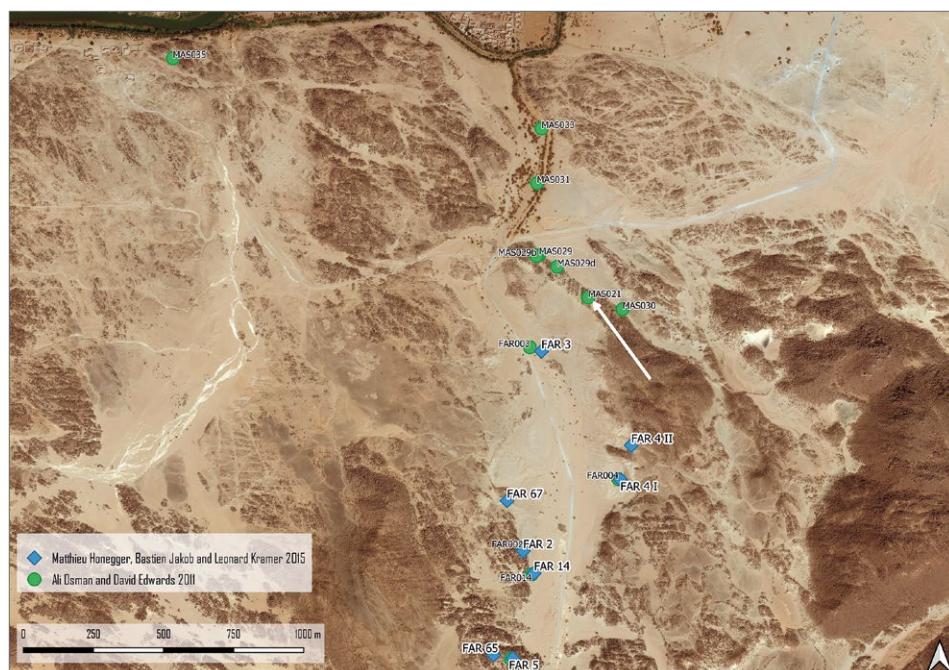


Fig. 2. Miseeda, archaeological sites recorded during previous archaeological projects. The white arrow indicates the location of the church (Processing M. Drzewiecki; background image Pleiades 2020)

a petroglyph depicting a 2.5 m high male figure and two goats, executed at an earlier date [Fig. 1]. The focus of the project is determining the reason behind this particular location of the church. The archaeological survey of the surroundings aims at providing insights into local settlement patterns, identifying other sites of the same date, and studying the intentions behind local rock art images.

Before the launch of our project, Miseeda was included in the large archaeological survey projects that covered the entire Mahas region (Osman and Edwards 2011) and the main section of the Wadi Farja (Honegger, Jakob, and Kramer 2015). Due to their regional and fairly general character, these projects were characterized by low-intensity fieldwalking focused mostly on the Nile Valley and the Wadi Farja. As a result, only major sites and sites along the main routes have been identified [Fig. 2].

Since we aimed to cover a much smaller area, our methodology consisted of a detailed fieldwalking survey in order to document the extent of the known sites and identify other, previously unrecorded remains from all periods. Handheld Garmin GNSS devices were used to record waypoints and tracks [Fig. 3]. Each identified/verified site was pinpointed (coordinate system WGS84) and photographed. Photographic documentation was made with handheld digital cameras (various types). Selected sites and the general landscape of the surveyed area were additionally documented with aerial photography (drone Mavic Air 2 with Hasselblad camera). So far, we have covered an area within a radius of about 1 km from the church, encompassing a section of the Nile Valley, Wadi Farja and the surrounding deserts and hills [see Fig. 3].

Altogether, 294 archaeological sites have been recorded (13 verified and 281 previously unknown sites). An archaeological site is here understood as an area with moveable and/or immovable archaeological objects scattered on the surface. Usually, the sites featured pottery and/or lithic scatters. However, a single find (a potsherd or a stone tool) was considered an insufficient site indicator. A different situation was with immovable objects, which were always recorded. Stone structures, when present, were pinpointed as individual objects and marked with consecutive letters (A, B, etc., for example MAS105A, MAS105B, etc.). They were usually associated with other moveable artefacts. On rare occasions, a stone structure was the only object recorded on a site. In such situations, the closest surroundings of the object constituted a site, and the stone structure was marked with a letter. A similar approach was applied to rock art. These types of finds, recorded in only a few locations, were registered as panels (Panel 1, Panel 2, etc., for example MAS105 Panel 1, MAS105 Panel 2, etc.). Due to the small number of rock art finds, there was no need for a more complex registration system, similar to, for example, the one used by the Scandinavian Joint Expedition (Hellström and Langballe 1970).

The survey area is currently a harsh environment where rare but intensive rainwater flows can have a significant impact on the post-depositional movement of small finds. This is clearly visible in the beds of the seasonal streams, where the archaeological sites tend to have elongated shapes covering longer parts of the wadis. The extent of each site, based on the distribution of surface finds, is presented in Fig. 4.



### STONE STRUCTURES

Most of the sites were found in either of two types of locales: in the dried-out waterways of the interior with areas cleared of debris or on top of a hill, in between the boulders providing shelter from the elements. Some sites appear to have been delimited by low boundary walls running between and over the rocky outcrops. Similar structures were recorded all over Sudan (for example Welsby 2005; Suková and Cílek 2012). The tops of the hills are also dotted with various types of structures of unidentified functions. Accumulations of stones of various shapes and sizes (from small piles of no more than a dozen stones to a large oval 2–3 m in diameter) were recorded on top of the

rock outcrops and very large flat-topped boulders. Some of those structures take on the appearance of circular or oval rings consisting of a single row of stones, others resemble funerary cairns, but with no chamber underneath. Circular-walled features with stones arranged radially in several courses were also identified.

A number of simple linear features running across valleys could have been used as elementary water management installations. Deliberate entrapment or slowdown of water flow would have permitted drainage of excess water and prevention of flash flood destruction during the rainy season and its judicious distribution during the dry months. Various other stone features were recorded, either free-standing or

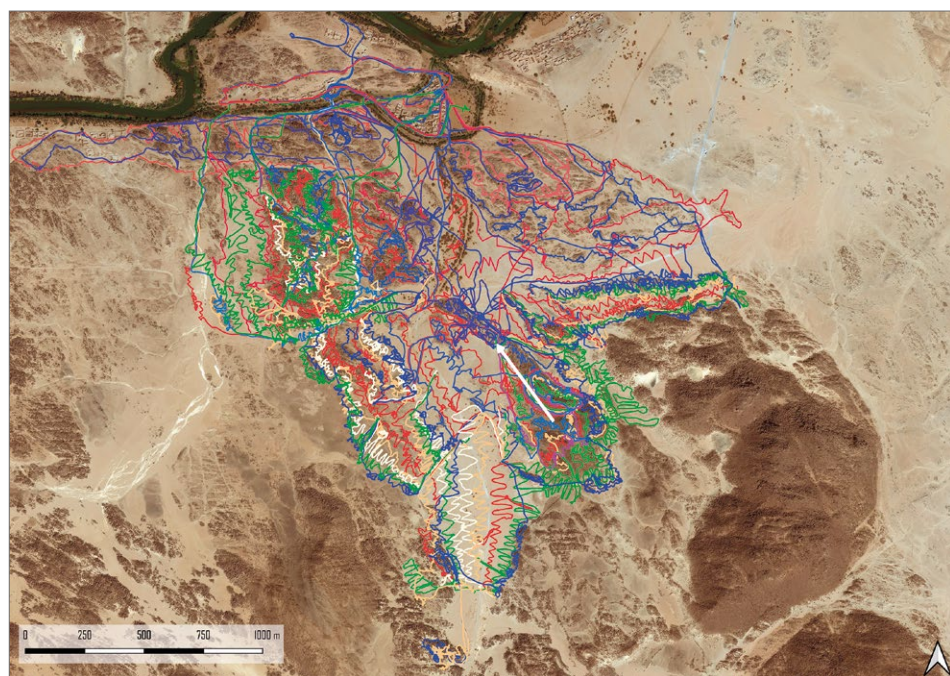


Fig. 3. Area covered by the archaeological survey. Each line represents a track of a surveyor: green Joanna Ciesielska, red Mariusz Drzewiecki, blue Paweł Polkowski, yellow Karel Innemée, purple Katarzyna Rosa, and white Dobrochna Zielińska. The white arrow indicates the location of the church (Processing M. Drzewiecki; background image Pleiades 2020)



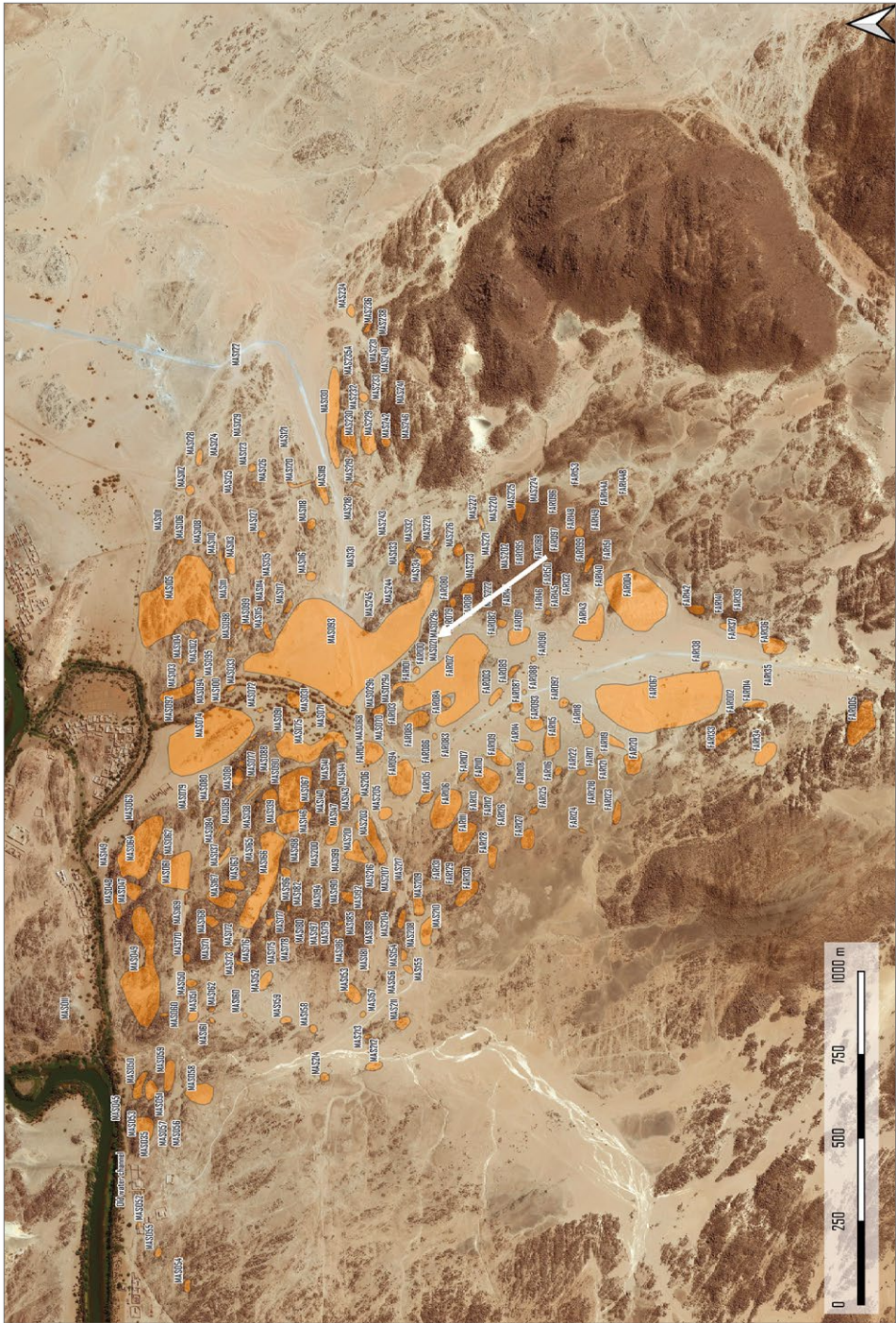


Fig. 4. Archaeological sites recorded during the season 2022–2023. The white arrow indicates the location of the church (Processing M. Drzewiecki; background image Pleiades 2020)

clustered together and usually associated with other finds. Whenever possible, identified features were classified according to the system introduced by Borowski and Welsby (2012) for the Merowe Dam Archaeological Salvage Project. The most abundant among them were the remnants of temporary occupation, such as circular or sub-rectangular huts/shelters, either free-standing or abutting outcrops of bed-rock or large boulders, usually preserved in the form of a single-course outline. Such structures were usually placed at the foot of hills or between large boulders on the beds of wadis running between mountain ranges. They are often accompanied by other installations, such as small circular rings of a single row of stones (campfires?), linear stone arrangements closing up an empty space between boulders (stock enclosures?), windbreaks, and animal pens. Another form of human occupation can be found in the upper sections of the hills, where natural rock shelters formed of mas-

sive boulders were used, occasionally supplemented by low stone walls filling up empty spaces between the rocks. Circular wells with walls rising a few courses over the modern walking level constitute a rare type of find, identified only at a few sites, mostly in the bed of the Wadi Farja (for example FAR003).

Only a few presumed cemeteries or free-standing graves have been identified. A series of small gravel mounds covered with stones were identified in a *khôr* between two hills with extensive settlement sites on their flat tops. The cemetery, tentatively dated to the Kerman period based on the associated pottery finds, was clearly divided into four sections (MASo84–086 and MASo88) by low linear arrangements of stones running across the small valley. A number of isolated, possibly funerary features in the form of oval cairns were also recorded in other parts of the concession. However, without further in-depth investigation their identification remains uncertain.



Fig. 5. Selection of pottery fragments decorated with zoomorphic representations from site MAS110, probably dated to about the 5th/6th century CE (Photos D. Zielińska)

## SMALL FINDS

The majority of the recorded artifact collection consisted of pottery and lithics, often occurring as large surface concentrations [Fig. 5]. However, isolated metal objects, organic materials (such as shells and burnt fragments of bones) and beads were registered as well. A unique find at site MAS066 consisted of a fragment of what seems to be a pottery figurine, strongly resembling the Late Neolithic anthropomorphic figurines known from Kadruka and Kadada (for example Chłodnicki, Bagińska, and Polkowski 2015: 64–65). The surviving piece is approximately 3.5 cm high, preserving what seems to be the torso and part of the lower body [Fig. 6]. The latter is covered with several rows of parallel lines incised before firing. Should this identification be correct, then the small hole in the front side near the lower end of the figurine might indicate the navel.

Samples of all small finds have been collected for further studies. However, already at this point it can be stated that prehistoric, Kerman, medieval, post-medieval, and modern materials were identified. Prehistoric sites are numerous, encompassing a long time span from the

Paleolithic to the Late Neolithic period. Remains attributed to the pre-Kerman and Kerman periods were encountered most frequently. Some of the largest sites, in turn, can be dated to medieval times, and one such previously unknown locality, MAS105, is described below as an example.

## SITE MAS105 (COORDINATES: 2260001.5/3383459.1)

Among the most notable sites recorded was the locale labeled MAS105. The site is located about 400 m to the southeast of the modern Miseeda village [see Fig. 4], on a large plateau among granite outcrops breaking through the sand overlay forming a massif restricted by larger wadis [Fig. 7]. MAS105 is composed of at least 18 stone features distributed over an area of approximately 4 ha [Fig. 8], covered with large amounts of pottery sherds datable to the medieval period. Several features merit special attention.

**Feature A** is composed of two stone rings, each about 2 m in outer diameter, joined together to form an 8-shaped structure [see Figs 8 and 9]. Each ring separately is reminiscent of free-standing circular structures recorded during the Merowe Dam Archaeological Salvage Project (Borowski and Welsby 2012: types CS05–07), but no similar combined features were identified by these authors.

**Feature B** resembled **Feature A** in outline (both are visible in the bottom-central part of Fig. 7), though it was significantly larger and constructed of somewhat larger stone blocks. In addition, faint semi-circular stone arrangements can be traced between the two stone rings, potentially delineating internal divisions of space within the structure. Three rows of small



Fig. 6. Fragment of an anthropomorphic figurine from site MAS066 (Photos D. Zielińska)





Fig. 7. Site MAS105, aerial view. Stone features A and B are visible at the bottom and center of the picture (Photo M. Drzewiecki)



Fig. 8. Site MAS105. Stone features are marked with letters A–Q; panels with rock art as P1 and P2 (Processing M. Drzewiecki; background image Pleiades 2020)

stones, often set some distance apart, were used to delineate a rectangular space abutting a rocky outcrop at the center of the plateau, forming **Feature D** (reminiscent of Borcowski and Welsby's type RFo2a). **Feature F** is representative of a wide class of features recorded during the present survey, a large curvilinear enclosure built up against a rock outcrop (similar to SBo6 by Borcowski and Welsby 2012). A number of features were also recorded in adjacent *khors* and on top of the rocky outcrops, among them very small free-standing circular structures (such as **Features J** and **O**, similar to Borcowski and Welsby's type SSo1) and much larger circular-walled features or cairns (**Features L** and **M**, see Borcowski and Welsby's types FMo3, CSO6, or SSo4).

As previously mentioned, the entire area was covered with large amounts of pottery sherds.<sup>1</sup> In addition, many of the features yielded ceramics associated with them and were thus recorded separately. The main component of the assemblage appears to be superior-quality tableware (mostly medium-sized bowls) made out of fine red clay with tiny particles of non-organic additives. It was often covered with red, orange, or cream slip and painted with darker motifs. Fragments of utility ware, including storage vessels, large bowls, *qawadis*, *dokat*, and jars of a coarser Nile clay, some decorated with incised geometric motifs, were also identified. Most of the assemblage can be dated to the period between the 8th and 10th–12th centuries CE. Structures like **Features**

**A** and **B** can possibly be interpreted as occupational in nature, in tandem with other installations and ceramic evidence marking the presence of a large habitation site. As observed by Suková and Cílek (2012), in the Jebel Sabaloka area major Christian settlements were often located at the entrance to a gorge to provide protection among the towering hills and extend control over the nearby routes. A similar scenario can be envisaged for MAS105 and some other Christian sites in the survey area.

In close proximity to the potential habitation zone, at the northern edge of the hilltop plateau, two adjacent rock art panels were located. The panels occupy vertical rock surfaces overlooking the lower ground (currently farmland). The most prominent archaeological feature, the fortified site MAS020, is clearly visible from the spot. However, the petroglyphs found in this locality seem to considerably predate the medieval remains described above. **Panel 1** contains three zoomorphic figures: two depictions of cattle and a giraffe [Fig. 10]. All petroglyphs seem to have been executed by the same hand, as they share a number of common traits. The figures were first outlined by pecking; the lines consist of closely spaced and relatively deep peckmarks, and hence the outlines are more clearly visible compared to the filling of the images, which also consists of peckmarks, but more widely distributed. All the animals are rendered in a peculiar manner that is usually considered typical for the Kerman horizon petroglyphic

1 The pottery material is being studied by Katarzyna Rosa, Faculty of Archaeology, University of Warsaw.



iconography (see Kleinitz 2012). The cattle have straight backs, long horns and specifically rendered heads/muzzles. The horns are characteristically incurved, referring to artificial horn deformation, another typical feature of Kerman/C-Group cattle petroglyphs. Both bovids have what seems to be a pendant hanging from the neck, which most probably is another deformed body feature, namely the dewlap. Although all figures are likely



Fig. 9. Site MAS105, Feature A  
(Photo J. Ciesielska)

contemporaneous, there is an indication of the order of their execution. Apparently, the giraffe, and possibly also the cattle image placed lower on the panel, were created before the second depiction of the bovid. The hind leg and the tail of the latter are clearly superimposed on the giraffe's neck/head. The association of cattle and giraffe motifs is another element pointing to the "Early Cattle", most likely Kerman, identification of the petroglyphs. It is known from various areas in Sudan, including the Third and Fourth Cataract regions (cf. Kleinitz 2012: 39, Fig. 11). **Panel 2**, located opposite **Panel 1**, contains most probably more depictions of giraffes, but their state of preservation is very poor.

#### PETROGLYPHS AND ROCK GONGS

The petroglyphs described above are by no means a unique feature in the survey area, and altogether 24 rock art localities and one rock gong site have been found

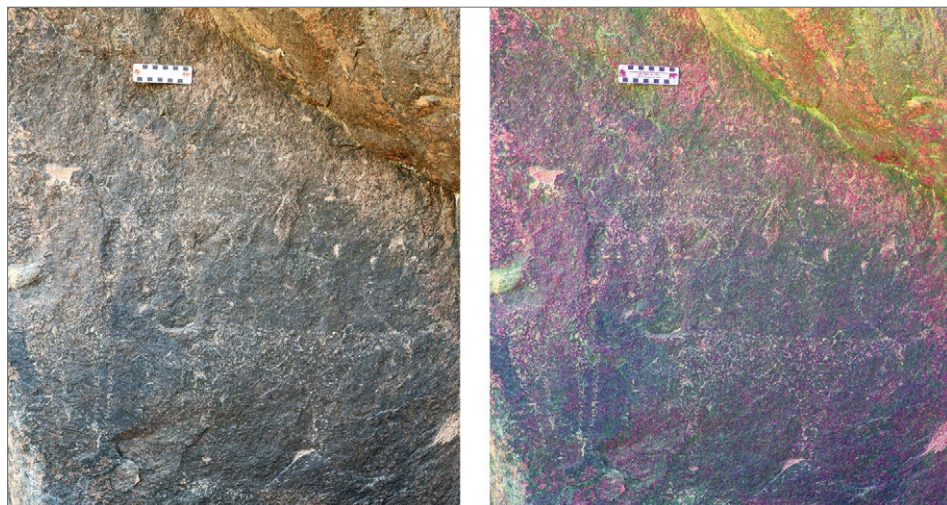


Fig. 10. Site MAS105, Panel 1 showing two depictions of cattle and a giraffe; image taken in natural light (left) and enhanced using dStretch software, YDT color space (right) (Photo and processing P. Polkowski)

to date. A large part of the petroglyphs can be tentatively dated to the Kerman and Christian periods. It should be noted that the vast majority of images are very shallowly pecked or scratched into granitic surfaces, causing considerable difficulties in the documentation process. Most of them become relatively clearly visible only at particular times of day, and many remain poorly visible regardless of the circumstances.

One of the aims of the survey was to verify if monumental petroglyphs similar to the ones in the vicinity of the church (lion, “warrior-king”, elephant, see Osman and Edwards 2011: 328–329) occur also in other areas. So far, no depictions of a similar size and style have been recorded elsewhere. However, several sites feature petroglyphs that may have been inspired by the monumental images. They show stylized versions of the “warrior-king” (e.g., MASo11), as well as a smaller and differently rendered lion (FARo02).

In the context of the church, petroglyphs from the Christian period are

of particular importance. Two sites in Wadi Farja seem to be especially significant. Both contain crosses pecked onto vertical rock surfaces and both are well visible from the level of the wadi bed. FARo14 is located to the south of the church and consists of four panels with crosses, while FAR103 is a large isolated boulder to the north of MASo21, with its northern side covered with Christian symbols. Both these localities seem to be directly related to the church, perhaps meant to indicate its presence to the passers-by traveling along Wadi Farja.

So far, only one rock gong site (MASo56) was discovered within the limits of the survey area. It consists of two stones, a slightly concave smaller one and a large oval boulder [Fig. 11]. Both have cup marks indicating repeated pounding, although it is the former that displays typical traits of a lithophone (cf. Kleinitz, Till, and Baker 2015), being a low-lying slab-like stone with a percussion zone situated at one of its edges [see Fig. 11]. Cup marks on the larger boulder are, in turn, distributed more

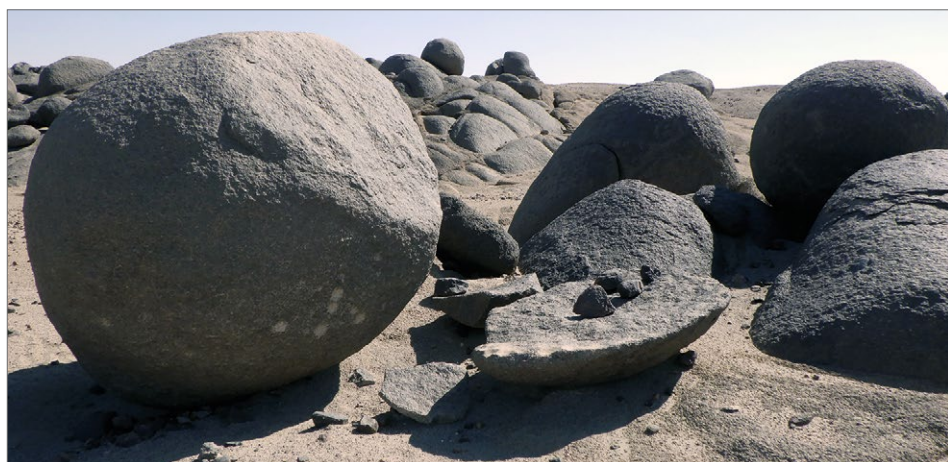


Fig. 11. Site MASo56, two rock gongs (Photo P. Polkowski)

widely and seem to be not patinated, which may indicate that this “gong” was

used much more recently. No associated archaeological material was registered.

## CONCLUSIONS

Previous archaeological surveys in the area proved the Mahas region and Wadi Farja to be rich in archaeological remains from various periods. The results of our fieldwork, employing a systematic high-intensity fieldwalking approach, provided an extensive amount of data to support this observation. Currently, it can be stated that the entire survey area is an archaeological landscape in which concentrations of surface finds are indicated by archaeological sites. The land was intensively used by past communities of various sizes throughout most periods of human history.

A question arises whether the most visited/traversed area in the region was the mouth of the Wadi Farja. It would explain the large number of archaeological remains in that area. Alternatively, the distribution might reflect the state of research and, with more systematic survey projects elsewhere, the entire Mahas region will turn out to be similarly rich in material remains of the past.

The survey encompassed merely a part of the local landscape and did not include the major medieval cent-

ers. Although Miseeda is thought to have been peripheral, the first season of fieldwork has shown that the church (site MASo21) was not isolated but surrounded by many, sometimes large, settlement sites generally dated to the medieval period. Based on the quantity of small finds one can infer that some of the sites were settlements inhabited for a considerably long time. Similar pottery sherds found in the church and at nearby sites may indicate that several places in the area were used in the same period as the church. However, more detailed studies of the small finds and the chronology of the sites will be conducted in the subsequent phases of the project.

The church is not the only medieval site where older petroglyphs have been recorded. Site MAS105, described above, is only an example. In-depth studies of relations between older sites with petroglyphs reclaimed by younger occupational sites may provide insights on the ways past communities perceived, used or reinvented older concepts represented in rock art.

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# New advances in research on pre- and proto-historic settlement of Argi and Letti, Upper Nubia



**Abstract:** New fieldwork in Argi and Letti (Southern Dongola Reach) has produced unique data on early Holocene settlement and burial practices. New surveys, backed by GIS data, shed light on true forms and preservation of settlements dating from the Paleolithic to the Kerma periods, providing an absolute chronology as well as exciting future directions.

**Keywords:** survey, Argi, Letti, early Holocene, Paleolithic, Neolithic, Kerma

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## INTRODUCTION

From 6 January to 7 February 2023, a team from the Polish Academy of Sciences explored two areas located between the 3rd and 4th Nile Cataracts (Sudan), opposite the modern city of Debba. Presented herein are the outcomes of this survey and excavation work, as well as new radiocarbon and OSL dating results.



### **Acknowledgments**

In January–February 2023, the project team was directed by Dr. Piotr Osypiński (prehistorian). The team also comprised Assoc. Prof. Marta Osypińska (archaeozoologist), Justyna Kokolus (archaeologist), Roman Łopaciuk and Paweł Wiktorowicz (surveyors), as well as Franciszek Osypiński and Fatima Idris (students and assistants). Ms Amel Hassan Gismallah, an NCAM inspector, was a valuable and helpful addition to the team. Field activities took place between 6 January and 7 February 2023. The mission was housed in the Banganarti Archaeological Station created and managed by Bogdan Żurawski. The research was financed by the National Science Centre, Poland (NCN): grant UMO-2020/37/B/HS3/00519.

The Southern Dongola Reach follow-up research project involved excavations on two archaeological sites in Letti: LTD1 and LTD2 [Fig. 1]. Other field activities included large-

scale mapping with RTK GPS, mapping of three Holocene sites (Argi Cemetery, Argi Crossroad, and Argi 2), and follow-up surveys of the entire area (Argi).

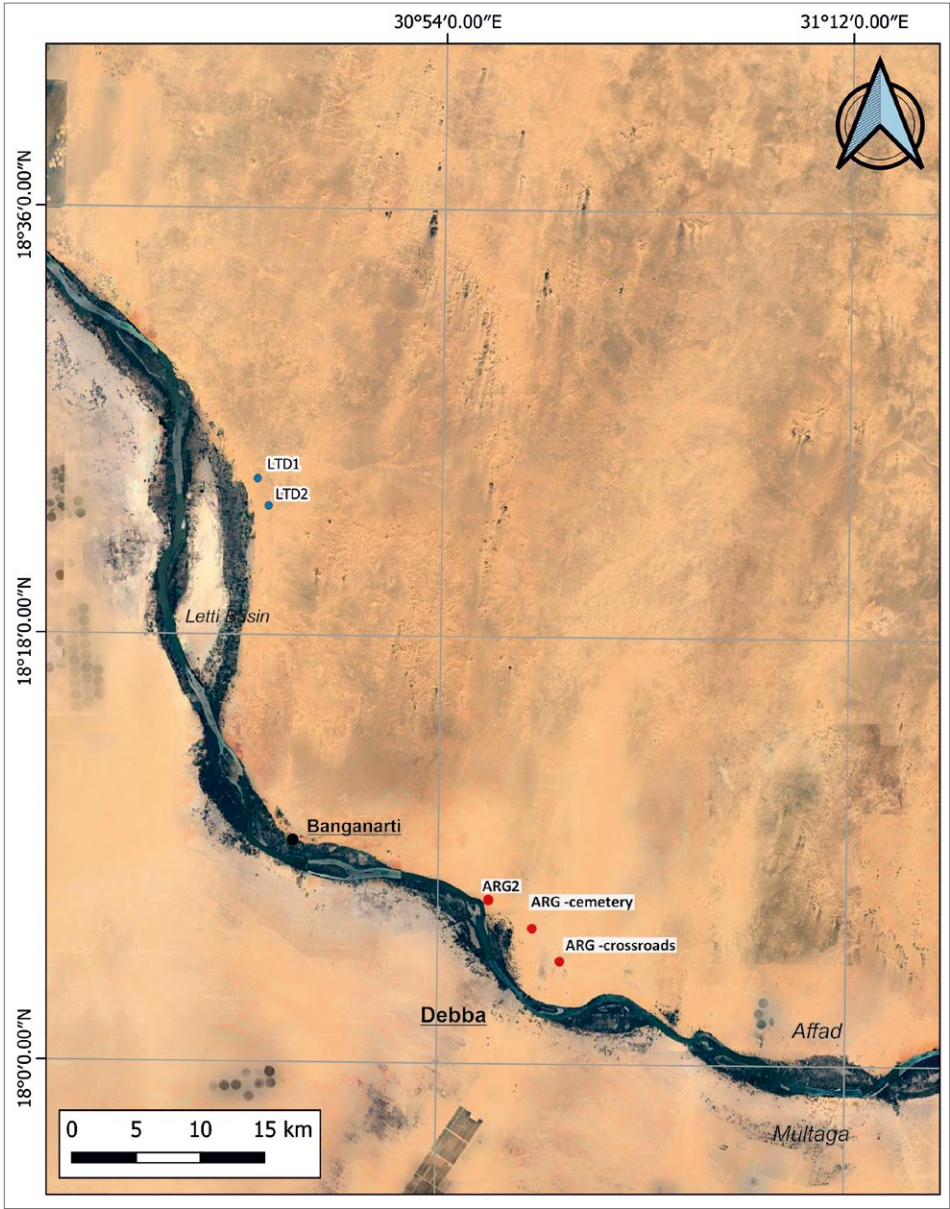


Fig. 1. Area investigated in January–February 2023 (Mapping P. Wiktorowicz)

Both areas (Letti and Argi) are widely known for the presence of prehistoric sites, noted already in publications from the mid-20th century (Arkell 1950). Subsequent generations of Dongola Reach researchers have mapped the prehistoric settlement in both the Letti Basin (Grzymski 1987; Kobusiewicz and Kabaciński 1996; Usai 1998; Chłodnicki and Kabaciński 2003) and the Argi *mantiga* (Arab.: district) (Żurawski 2003). The previous field season of the current project expanded the knowledge on the prehistoric settlement in the desert part of Letti and its absolute chronology (Osypiński et al. 2022). Three stages of the human presence on

the Middle Nile were the focus of our attention. The oldest was the Pleistocene period, with settlement remains that provide the geographically closest parallels to the Affad discoveries (Osypińska and Osypiński forthcoming). The second focal point were the early Holocene sites. The 2022 research at the LTD2 site allowed for the first time to structure the settlement phases of communities that used pottery, a standardized set of insert (lithic) tools, and stone querns. These were the oldest post-Pleistocene communities in the Nile Valley, although it has so far been problematic to segregate mixed assemblages comprising material correlates of both

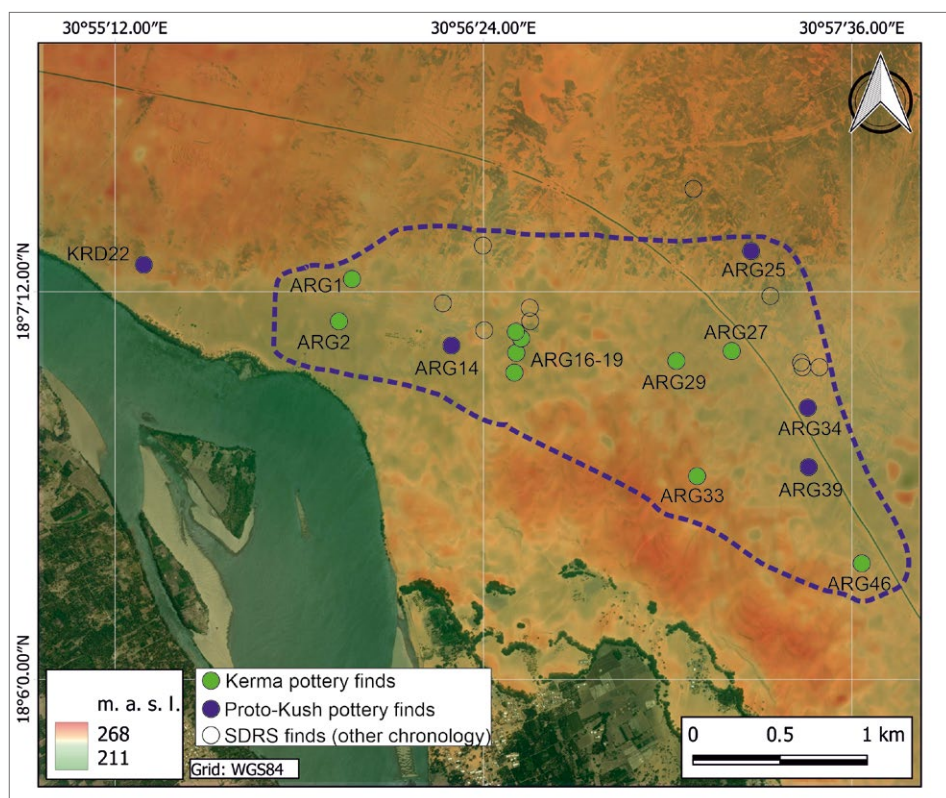


Fig. 2. Argi, cluster of SDRS sites; maximum extent of settlement with finds of Kerma and proto-Kush pottery (DEM by P. Wiktorowicz; edited by P. Osypiński)

aquatic/riverine (Karmakol) cultures and other proto-pastoral (Tergis) groups (see Marks, Hays, and de Heinzelin 1968). Both of these adaptation strategies were in place before the Holocene climatic optimum (8.2 ka). Finally, the third phase that captured our attention was the period of formation of the first civilizations along the

Nile. Both Neolithic (5th millennium BC) and Kerman (3rd–2nd millennium BC) sites provide new data on the emergence of Nilotic/Kushite communities whose economic and ideological focus was on cattle herding. Reminiscences of this cultural complex are present in all later Nubian civilizations (Osypińska et al. 2023).

## SURVEY IN THE ARGİ AREA

Research to date identified about 100 prehistoric sites preserved in the Argi area. All of them were recorded as part of the Southern Dongola Reach Survey (SDRS) project and published in 2003 (Żurawski 2003). However, the current project revealed large-scale damage to some sites and deterioration of the state

of preservation of all loci. The surface survey consisted in a systematic scrutiny of selected locations (SDRS archaeological sites) by a team of specialists (prehistorians and an archaeozoologist), involving GIS ground-based documentation (RTK GPS) and aerial photography (drone).



Fig. 3. Clusters of animal bones and pottery on site ARG2 (Photo P. Osypiński)



### KERMA/PROTO-KUSH PERIOD SITES

The first goal was to verify the presence of settlements dating back to the Kerma period (2500–1500 BC), which, until now, have been very poorly known in the area. A concentration of SDRS sites with fragments of pottery resembling Kerman wares was noted in the northwestern part of the Argi area, on both sides of the Nawa – Karima asphalt road: ARG2, ARG16, ARG17, ARG18, ARG19, ARG27, ARG29, ARG33, ARG46; locations with ceramics identified as proto-Kushite were ARG14, ARG25, ARG34, ARG39 [Fig. 2].

The current survey has shown the presence of one large settlement inhabited until the Napata period, perhaps with roots in the Kerma period. Loci ARG2 and ARG14 were the exposed parts of this settlement [Fig. 3], while the remaining parts were covered with dunes. A number of sites (14 loci) recorded during the SDRS project were local exposures of anthropogenic sediments between the dunes.

During the current prospection, numerous well-preserved remains of settlement sites were found: clusters of Kush-period pottery fragments, domestic animal bones (also bearing traces of burning), and stone artifacts [see Fig. 3].

The survey also revealed recent looting of a Kush-period cemetery located slightly west of the Argi settlement (the site identified during the SDRS as Karendiwai 22/KRD22, see Fig. 2). The site bore traces of damage with bulldozers [Fig. 4].

### EARLY HOLOCENE SETTLEMENTS

Another goal of the verification survey was to identify early Holocene sites in Argi. Already during the SDRS fieldwork, two large clusters of loci with “Neolithic” pottery, lithic artifacts and animal bones were recognized. Large fragments of querns and partly exposed graves pointed to their identification as well-preserved prehistoric settlements and burial grounds. One of the sites



Fig. 4. Necropolis from the Kush period near Argi (SDRS site KRD22) (Photo R. Łopaciuk)



(ARG113=MG4), excavated in 2001, revealed a multi-phase early Holocene settlement (Osypiński 2003).

Upon investigation during the current survey, both clusters of early Holocene finds turned out to be large settlement and sepulchral sites surrounded by vast zones of deflation/erosion. The first cluster of SDRS loci comprised a central zone featuring the best-preserved and exposed graves on SDRS sites ARG62, ARG61, ARG53, ARG59, and a number of heavily degraded loci in the periphery: from ARG54 to the west and ARG76 to the south to ARG71 to the northeast [Figs 5, 6]. A characteristic feature of the landscape in this area

is an extensive modern cemetery directly adjacent to the Neolithic settlement [see Fig. 6: inset photo], hence the reference to this complex of sites as “Argi Cemetery”. In 2008, the central part of the complex was destroyed during the construction of the Nawa – Karima road.

To the south of ARG111 is a Neolithic settlement of a similar nature to the first cluster, also with partly exposed graves, but much smaller in size [Fig. 7].

The second large cluster of SDRS sites with early Holocene ceramics comprised a central zone with well-preserved settlement remains (ARG115, ARG114, ARG113) and a peripheral deflated area [see Figs 7,

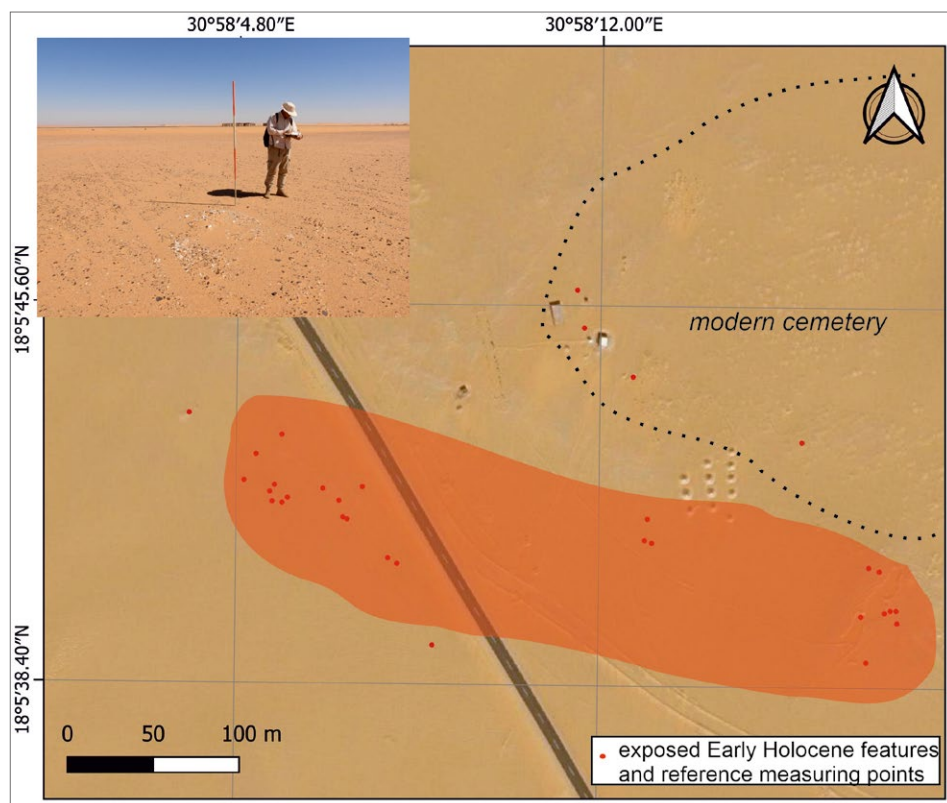


Fig. 5. “Argi Cemetery” site. Total extent of early Holocene graves/artifacts marked in red; inset: an example of the state of preservation of features (Mapping P. Wiktorowicz; photo M. Osypińska)

8]. The site complex is referred to as “Argi Crossroads” due to its location at a cross-roads near the Debba bridge. In 2008, during the construction of the Nawa – Karima road and the connection to the Nile bridge at Debba, a part of the site was completely destroyed. In the 2023 season, construction dumps containing a large number of pottery fragments, stone artifacts, and animal and human bones [see Fig. 8: inset photo] were subjected to surface exploration and partially screened.

The recovered ceramics [Fig. 9] represented three major technological workshops (groups) corresponding to the three general phases of early Holocene settle-

ment in the region (see Marks, Hays, and de Heinzelin 1968): Karmakol with wavy-line and dotted wavy-line pottery, fully decorated and tempered with chaff; Tergis with decoration only in the upper parts of the vessels, tempered with sand; and Karat — thin-walled cups (most probably grave furnishings). No fragments of red slip vessels that could be associated with Kerma culture manufacture have been recorded, although such material was found in the area during past research (locality ARG117, Żurawski 2003: 204).

Stone artifacts represented an inventory based on the production of blades from cryptocrystalline raw materials:

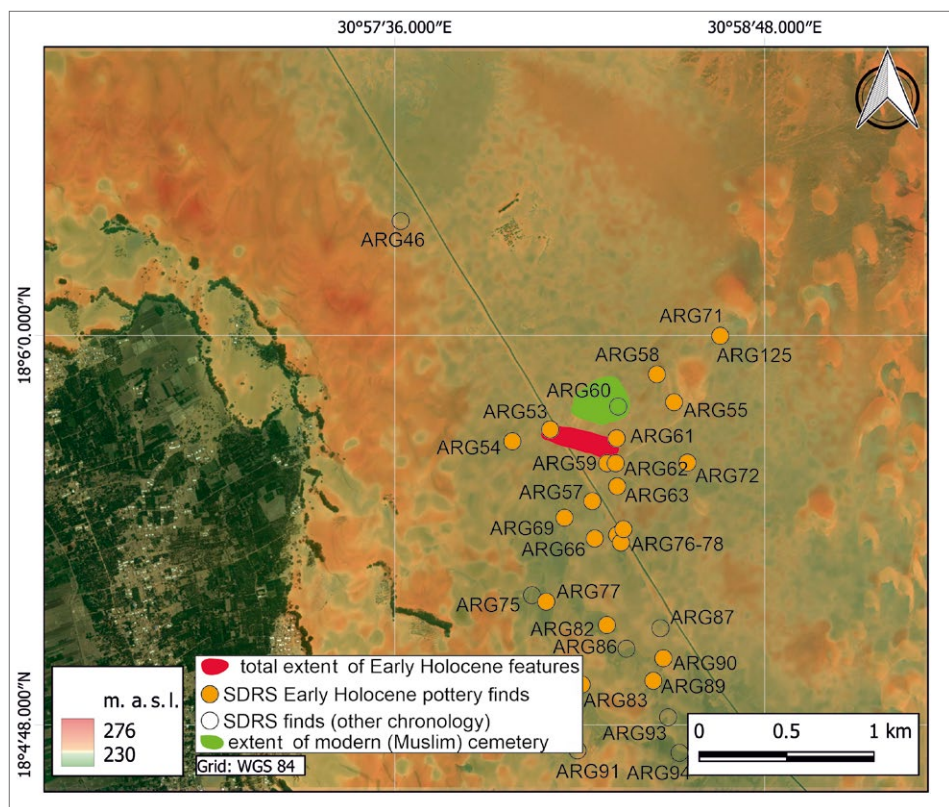


Fig. 6. Argi, a cluster of early Holocene loci around the modern cemetery (DEM by P. Wiktorowicz; edited by P. Osypiński)

chert and agate [see Fig. 9]. Animal bones tended to originate from wild species (ranging from fish to mammals such as warthogs, Oribi antelopes, and hippos), but remains of domesticated cattle were also relatively numerous [see Fig. 9]. Unlike LTD2, these SDRS sites yielded no ostrich eggshell beads.

The area is at risk of further destruction as a result of the establishment of industrial farms, one of which is already operating to the south of the site.

### PLEISTOCENE FINDS

The third goal of the current survey was to determine the nature of the Pleisto-

cene SDRS finds (MSA?) between the two clusters of early Holocene sites [see Fig. 7]. Due to their location in the lowest parts of the terrain, we believe that they are secondary deposits of Pleistocene settlements, washed out from the higher ground to the northeast. Therefore, they cannot be used in comparative studies with sites/collections from Affad or Letti.

Vestigially preserved relics of the natural environment (riparian forest?), which can be linked to the pre-Holocene period, were recorded near site ARG124 [see Fig. 7]. They consisted of petrified trunks and roots of trees. However, no human-made artifacts of any period were found there.

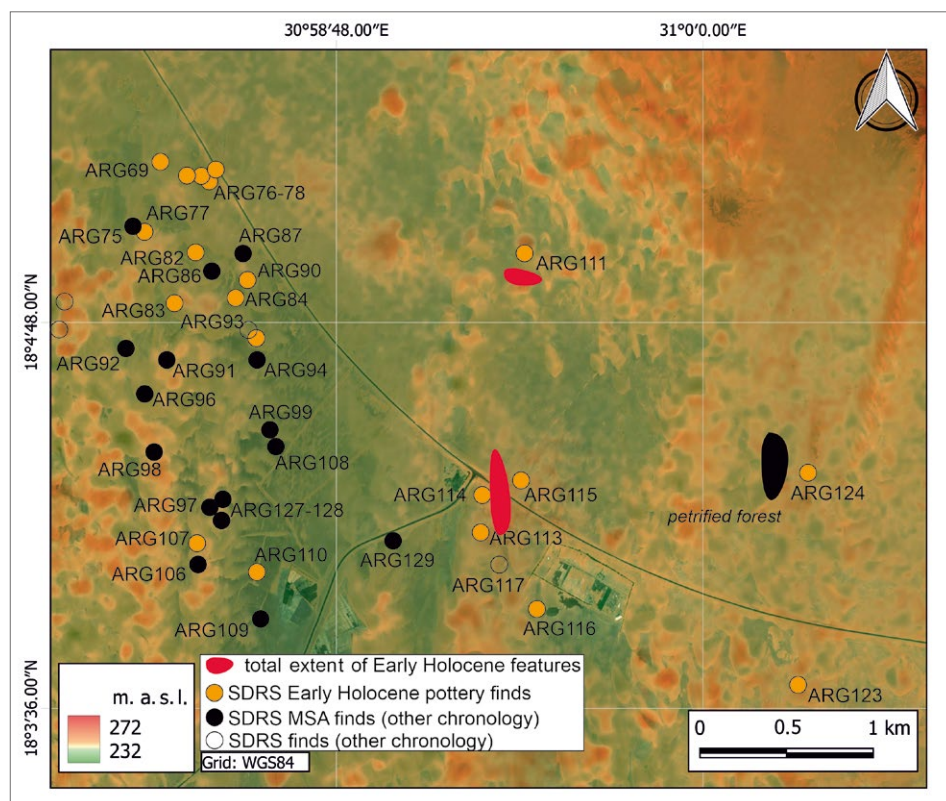


Fig. 7. Cluster of early Holocene SDRS loci: "Argi Crossroads" and Pleistocene locations including the "petrified forest" and clusters of MSA stone artifacts (DEM by P. Wiktorowicz; edited by P. Osypiński)



## EXCAVATIONS AT LETTI: LTD1 AND LTD2

The sites were discovered during the 2022 survey and have been explored since then (Osypiński et al. 2022). During the 2023 season, three trenches were excavated at LTD1 and the results have been published separately (Bobrowski et al. 2023, in this volume). At site LTD2, in 2023 work continued in a trench opened in the previous year (designated as Area A), as well as at LTD2/B, a Neolithic cemetery about 180 m to the east.

Early Holocene artifacts in Area A, present at a depth of approximately 0.5 m below ground level, represented a homogeneous complex defined as the Tergis Group level (after Marks, Hays, and de Heinzelin 1968). Numerous stone artifacts, pottery fragments and animal bones were found. According to radiocarbon dates of samples collected in the preceding season, the assemblages recovered at this site are datable to the middle of the 8th millennium BC (Osypiński et al. 2022: Table 2).

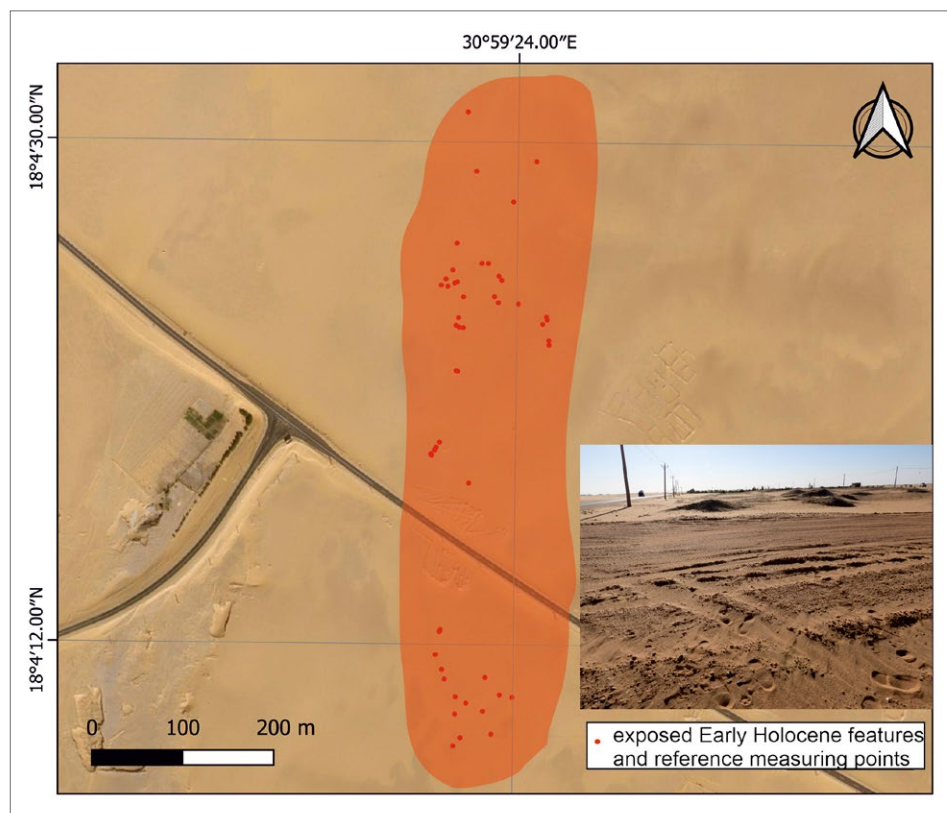


Fig. 8. "Argi Crossroads" site. Total extent of early Holocene graves/features (shaded red) and road-side dumps containing vast quantities of Neolithic artifacts (inset photo) (Mapping P. Wiktorowicz; photo M. Osypińska)

Early Holocene layers containing artifacts filled a natural depression of the ground, covering some rock debris (Context 6). The latter layer included stone slabs, which formed a kind of flat surface (floor?) recorded in the northeastern [Fig. 10] and southeastern corners of the trench [Fig. 11]. The origin and purpose of these slabs is puzzling; however, the nearby clusters of stones (including quern fragments) were deliberately placed, most likely to serve as pillar supports [see

Fig. 10]. They are the first evidence for early Holocene settlement architecture known from the southern part of the Dongola Reach. They are, however, different from the known semi-pit houses from el-Barga near Kerma (Honegger 2004).

Among the materials discovered during the current season, an important category were archaeozoological finds including a concentration of cattle bones and two distinct clusters of Nile oyster shells [Table 1].

Table 1. LTD2/A. Animal remains excavated in the 2022 and 2023 seasons (early Holocene strata)

TAXONS	n	%
Cattle ( <i>Bos primigenius</i> f. <i>domestica</i> )	39	8.1
Common tsessebe ( <i>Damaliscus l. lunatus</i> )	5	1.0
Oribi ( <i>Oureba ourebi</i> )	5	1.0
Jackal ( <i>Lupulella</i> sp.)	4	0.2
<i>Gazella</i> sp.	14	3.0
Cape hare ( <i>Lepus capensis</i> )	3	0.6
Common warthog ( <i>Phacochoerus africanus</i> )	16	3.3
Crested porcupine ( <i>Hystrix cristata</i> )	2	0.4
Aardvark ( <i>Orycteropus afer</i> )	3	0.6
Waterbuck ( <i>Kobus ellipsiprymnus</i> )	52	10.8
Common ostrich ( <i>Struthio camelus</i> ) – eggshell	114	23.7
Catfish ( <i>Siluriformes</i> sp.)	59	12.2
Nile oyster ( <i>Etheria nilotica</i> )	135	28.0
<i>Pila africana</i>	30	6.2
<b>NISP</b>	<b>481</b>	<b>100 / 35.2</b>
Mega fauna	1	0.07
Large ruminants	81	5.9
Medium ruminants	152	11.1
Small mammals	79	5.8
Mammals	240	17.6
Unidentified	330	24.2
<b>TOTAL</b>	<b>1364</b>	<b>100</b>





Fig. 9. Selection of pottery fragments (a), stone artifacts (b) and animal bones (c) excavated from dumps at the "Argi Crossroads" site (Photos P. Osypiński)

During exploration of the early Holocene strata, stone tools showing characteristics of a much older technological tradition —Levallois flakes— were noted. From Level 3 onward, their share in the material increased. In Context 6 (rock debris with silt, which constituted the natural substrate in the Holocene era), Paleolithic artifacts already dominated the assemblage. The tools included bifacial points (various raw materials — from chert to quartz to ferruginous sandstone), Mousterian points, denticulated tools, and distinctive notch tools with wide, shallow cavities. Also characteristic are wide, fan-shaped scrapers made of massive cortical flakes. Most formal tools were made of massive cortical blanks or Levallois flakes. One Mousterian point in particular is unique, retouched much

later than the time of making the blank Levallois point, as evidenced by a completely different patina [Fig. 12, lower left]. Thus, during the period of Paleolithic settlement at LTD2/A, much older products with similar features were available in the landscape.

An unusual feature of the preservation of approximately 20 percent of the Pleistocene stone artifacts was a white patina covering their surfaces and edges [see Fig. 12, top row]. This probably indicates long-term surface exposure of these artifacts, suggesting the absence of plant cover and soil formation processes. Ultimately, however, all these artifacts were recovered from buried contexts (mostly from Context 6). A lengthy time on the surface may be responsible for some natural breakage and accidental retouching,



Fig. 10. Assumed elements of early Holocene settlement structures: stone clusters with pillar supports and a flat surface made of stone slabs (upper right corner of the excavation area). View from the south (Photo P. Osypiński)



but the formal types of the tools are identifiable with confidence. The white patina formation leads us to hypothesize that the dry period (e.g., during MIS<sub>4</sub>) occurred immediately after (or during) the Paleolithic settlement phase. It was not until much later that the whole area was covered with another series of silts related to Nile flooding. In order to con-

firm the chronology of the Paleolithic assemblage at LTD2/A, two OSL samples were collected from sediments preceding (Context 8) and subsequent (Context 5) to the rock debris (Context 6) [Table 2]. The results obtained date the Paleolithic deposits from LTD2/A to the end of MIS<sub>5</sub> and suggest that they remained exposed until MIS<sub>3</sub>.

Table 2. LTD2/A. OSL dating results (multigrain, CAM – UMCS Laboratory)

Sample	Depth [m]	Annual Dose $d_r$ [Gy/ka]	OSL Effective Dose $d_e$ [Gy]	OSL Age [ka]
OSL1 (Context 8)	0.50	$1.31 \pm 0.16$	$120.87 \pm 3.69$	$92.3 \pm 11.6$
OSL2 (Context 5)	0.30	$1.50 \pm 0.18$	$71.60 \pm 2.55$	$47.7 \pm 6.0$



Fig. 11. Trench LTD2/A in the final stage of excavation, view from the north. In the front and in the section, rock detritus is visible (Context 6) containing Paleolithic artifacts. Above (in profile) early Holocene sediments and a stone slab in the left corner indicating the level of settlement (Photo P. Osypirski)

A new discovery on site LTD2 is a Neolithic burial ground located about 180 m east of Trench A [Fig. 13]. In this area, clusters of thin-walled Neolithic pottery and bones were visible on the surface. One of the bone clusters consisted mainly of cattle remains. The latter finds analogies at cemetery site AFD130, excavated in 2016 and dated to the 5th millennium BC (Osypińska et al. 2021). Radiocarbon dates obtained from the carbonate fraction of teeth from LTD2/B burials, as well

as from surface clusters of human bones at the LTD2/A excavation support this association [Table 3].

During construction of an asphalt road in 2008, a geodetic reference point was established in the immediate vicinity of the cemetery, and many graves were destroyed as a result of intensive use of construction machinery on the site. A 10 m × 10 m excavation trench, marked as LTD2/B, was established at the concentration of the destroyed burials.

Table 3. Radiocarbon dates obtained for human teeth from LTD2/A and LTD2/B burials (carbonate fractions dated at the Poznań Radiocarbon Laboratory)

Context	Sample type	Sample ID	Radiocarbon age (BP)	Calibration results (95.4% probability)
LTD2/A, Cluster 2	Human tooth 0.1%N 2.3%C carbonate U	Poz-164649	5590±35	4494 BC (7.1%) 4471 BC 4461 BC (88.3%) 4350 BC
LTD2/A, Cluster 3	Human tooth 0.1%N 2.9%C carbonate U	Poz-164650	5650±35	4551 BC (78.5%) 4436 BC 4430 BC (16.9%) 4363 BC
LTD2/B, Burial 3	Human tooth 0.1%N 1.0%C carbonate U	Poz-164654	5250±30	4168 BC (28.3%) 4094 BC 4228 BC (11.5%) 4197 BC 4076 BC (55.6%) 3979 BC
LTD2/B, Burial 4	Human tooth 0.3%N 1.2%C carbonate U	Poz-164655	5115±35	3985 BC (43.6%) 3893 BC 3882 BC (51.9%) 3798 BC
LTD2/B, Burial 5	Human tooth 0.1%N 1.0%C carbonate U	Poz-164656	5085±35	3964 BC (95.4%) 3794 BC
LTD2/B, Burial 6	Human tooth 0.1%N 1.8%C carbonate U	Poz-164657	5135±35	4041 BC (5.6%) 4018 BC 3994 BC (53.5%) 3907 BC 3879 BC (36.4%) 3802 BC
LTD2/B, Burial 7	Human tooth 0.3%N 0.8%C carbonate U	Poz-164658	5275±35	4236 BC (20.4%) 4189 BC 4174 BC (61.6%) 4036 BC 4027 BC (13.4%) 3987 BC

Exploration of the trench was carried out manually, with additional sieving of the entire sediment. The first two levels (down to a depth of 15 cm) were a mixed surface layer full of bone pieces and pottery from destroyed parts of the graves, as well as remains of the early Holocene settlement. Below, a dark gray silty mass with outlines of oval grave

cavities was recorded. A total of seven Neolithic burials were found within Trench B, with pit depths ranging from 5 cm to 40 cm below the modern surface. Originally there were more skeletons, as evidenced by several additional concentrations of small bones and pottery pieces in the northwestern part of the surveyed area.

Burial No. 1, discovered near the northern edge of the trench, was visible on the surface as a concentration of fragmented human bones [Figs 14, 15]. In 2008, its soft fill caused the wheels of excavation machinery to collapse and completely destroy part of the grave (or even two graves, as preliminary tooth analysis suggests the presence of two individuals). Only the lower body of one individual from the pelvis downward survived. The body was originally buried with the head to the west and the legs strongly bent [see Fig. 14]. No furnishings were recorded with the deceased, although this may be due to the severe destruction of this grave.

Burial No. 2 was found in the central part of the trench after removing the top layer. The irregular oval pit, filled with loose sand and a few burnt stones, contained the skeleton of an adult individual interred with bent legs and the head toward the west [see Fig. 14]. The skull had

a hole with healed edges — evidence of trepanation during life. A small stone pallet and a fragment of a bone point or awl were found at the knee [Fig. 16]. The burial pit had been dug in the bedrock to a depth of about 30 cm below the contemporary surface.

Burials Nos 3 and 4 were found in the central part of the excavated area after removal of the top layer. The burial pits had been dug into the silty subsoil to a depth of approximately 15–20 cm below the contemporary surface. The slightly earlier inhumation, No. 3, was deposited with the legs strongly bent and the head toward the west. The second inhumation was oriented in the opposite direction, with the head toward the east [see Fig. 14]. The pit of this grave partly cut into Burial No. 3, resulting in displacement of the latter's knee bones. Burial No. 3 lacked furnishings, while Burial No. 4 contained a complete ceramic vessel:



Fig. 12. Original white patina covering the surfaces of numerous Pleistocene artifacts from LTD2/A (top row) and a Mousterian point (lower left) retouched much later than the time of separation of the Levallois blank (double patina visible as a much more glossy surface of the ventral face than the flat-retouch negatives at the tip) (Photo P. Osypiński)

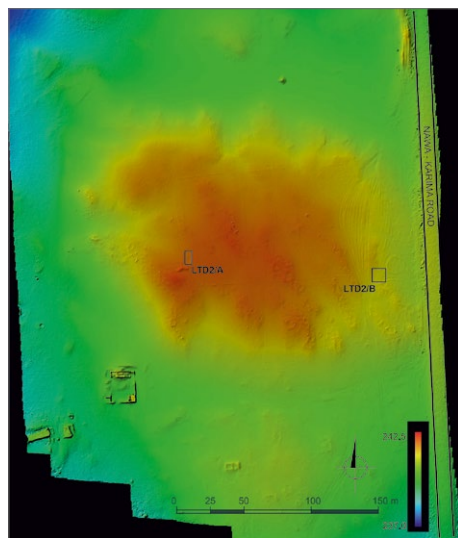


Fig. 13. Site plan of LTD2 and location of Trenches A and B (DEM by R. Łopaciuk and P. Wiktorowicz)



an undecorated bowl with the rim bent inward [see Fig. 16].

Burial No. 5, likewise located in the central part of the trench, also became visible after removal of the surface layers. The burial pit was excavated to a depth of about 20 cm below the modern surface. Originally the burial was interred with the head toward the west and the legs firmly bent. Unfortunately, in 2008, a part of the grave was destroyed by excavation machinery [see Fig. 14].

A fragment of a cattle metatarsal bone and a fragment of a rectangular bone plate, most probably original elements of grave equipment, were found in this mixed zone. The same context contained a crescent flint insert. However, its presence should be explained as a secondary deposit from the stratification of the settlement that functioned in the same place at a much earlier date. Slightly further to the south was a stone pallet, perhaps originally a part of grave equipment.

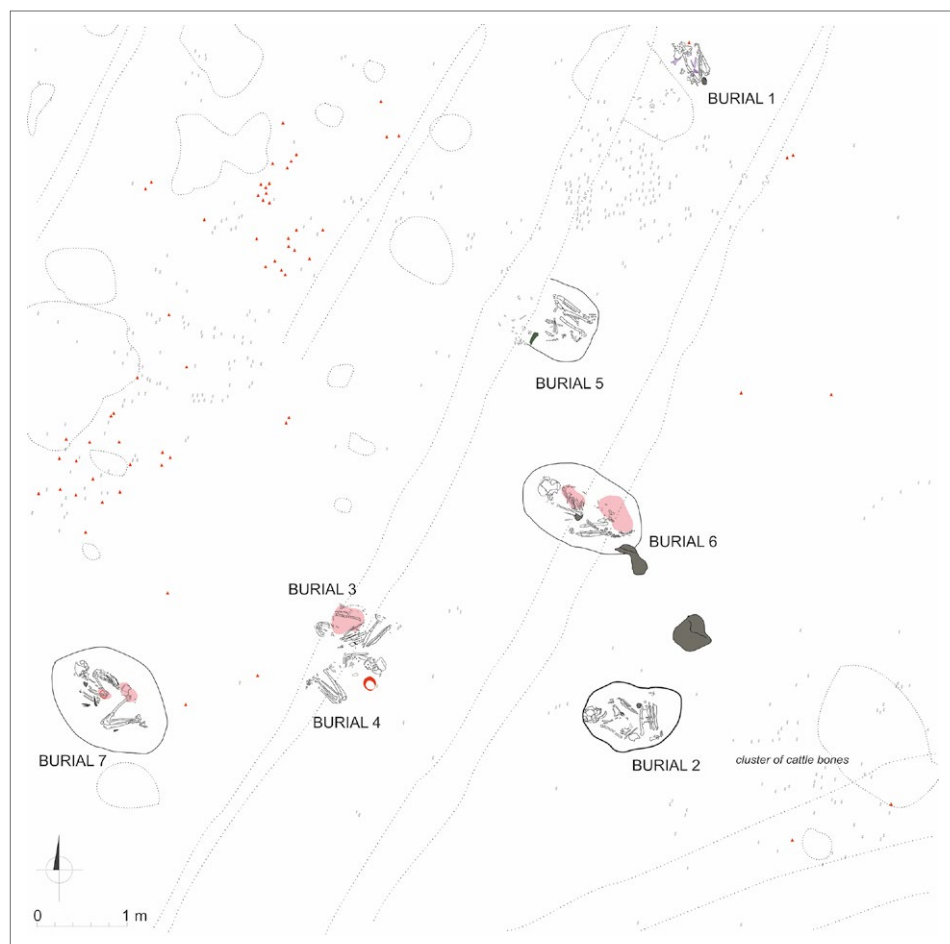


Fig. 14. Plan of the LTD2/B burial ground. Uniform red – pottery finds, pale red – ochre range (Processing P. Osypiński)



Fig. 15. Exploration of LTD2/B: a disturbed Neolithic tomb (Burial 1); bulldozer tracks from 2008 are visible in foreground (Photo M. Osypińska)

Burial No. 6 was also found in the central part of its pit following removal of the top layer. The grave was dug down to the level of the bedrock, that is, to a depth of about 25 cm below the modern surface. The body was laid with the head to the west and with the legs pulled up [see Fig. 14]. A small stone pallet was discovered under the left elbow [see Fig. 16], and red discoloration found on the pelvic bones indicated the presence of ochre.

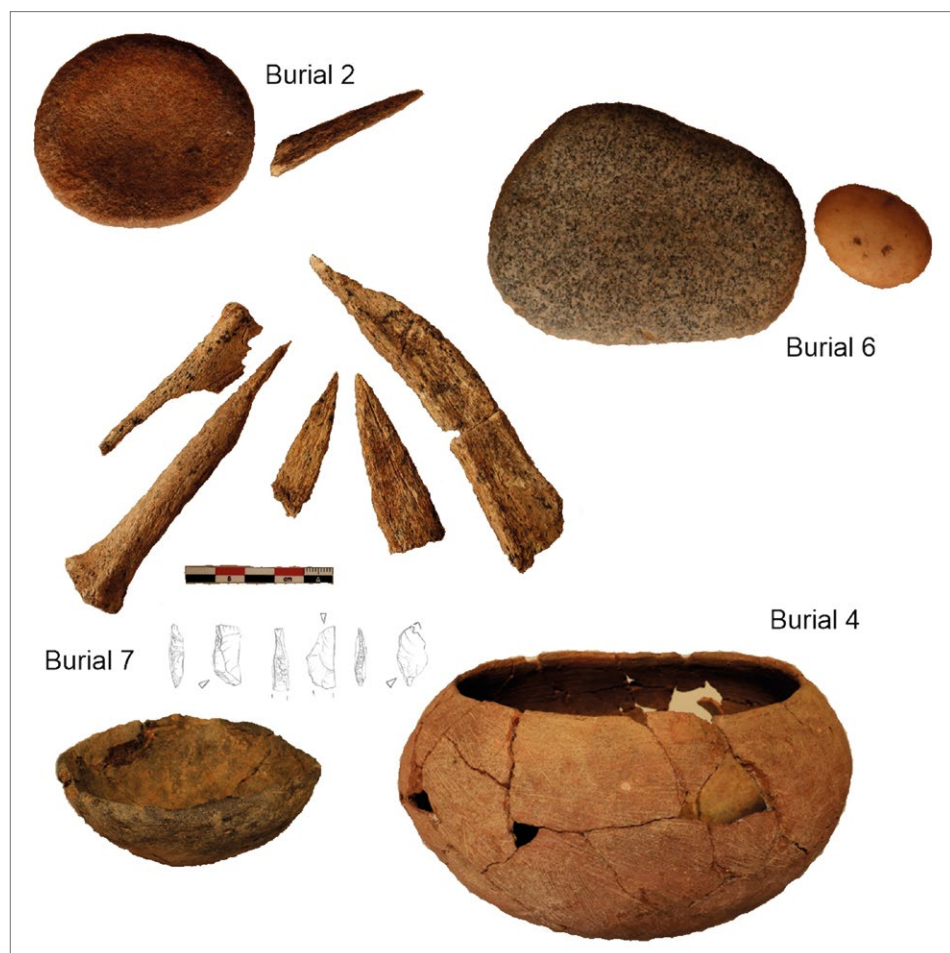


Fig. 16. Equipment of Neolithic burials LTD2/B (Photo M. Osypińska)

Burial No. 7 was discovered at the western edge of the excavation area, at relatively the greatest depth, reaching 40 cm below the current surface. The clusters of pottery found at the beginning of the exploration just by the burial pit seem not to be associated with it, as the interment bears no signs of disturbance. The material probably came from yet another, completely eroded deposit. Burial No. 7 was laid with the head to the west and with the legs folded up [see *Fig. 14*]. Several bone points or awls were recovered at the

level of the hand and chest, and a small, undecorated ceramic bowl was found below the elbow [see *Fig. 16*]. Several flint splinters and three sickle inserts had been placed under the head, undoubtedly as elements of the deceased's equipment. There were also traces of ochre around the chest and pelvis. The skeleton indicates the advanced age of the deceased, several dental diseases, and bone cancer (preliminary anthropological and pathological observations were carried out by M.O.; detailed analysis forthcoming).

## CLOSING REMARKS

The new data from Letti facilitates a better understanding of each of the prehistoric periods under consideration and helps interpret the Argi findings.

The Paleolithic LTD2/A assemblage is similar to the 2022 surface assemblage from the LTD14 site (Osypiński et al. 2022), but it is fundamentally different from the Affad wares dated to MIS3. Bifacial points of a character and size analogous to those from LTD2/A are found both to the north, at Miseeda (D. Zielińska, personal communication) and in the el-Gaab depression (Tahir and Nassr 2015), as well as in the area of the 4th Cataract (Wąs 2006). None of these sites, however, has yielded data on the absolute chronology of bifacial points manufacture on the Nile. Our current findings, which place this tradition at the end of MIS5, constitute baseline data of crucial importance for a better understanding of the technological and cultural complexity of this region during the Paleolithic. Redeposited MSA

finds from Argi recovered by our team and previous surveys (SDRS) lacked bifacial items and white-patinated artifacts, permitting to hypothesize that the age of these artifacts was later than MIS4. Similar redepositions of MIS3 settlement remains were noted in the Tergis area, directly to the east of Affad (Osypińska and Osypiński 2015).

The study of the Neolithic cemetery provided data for reconstructing the next settlement phase of site LTD2. The burials from Area B provided a reference point for the clusters of human bones from Area A, which, however, proved diametrically different in character. It seems that, during the period of use of area A as a cemetery, complete and equipped burials were not practiced and did not come to be an accepted practice until a few centuries later. It should be noted that we explored a partial and unequipped burial at Argi 113 (now part of the "ARGI-Crossroads" site) more than

two decades ago (Osypiński 2003). Preliminary data from a micromorphology study of the molars of individuals from LTD<sub>2</sub>/A and LTD<sub>2</sub>/B sites, as well as from other Karat horizon cemeteries from Affad, suggest a biological identity of the Neolithic populations in the region (Isabelle Crevecoeur, Nicolas Martin forthcoming). Also the isotopic data has the potential to provide extremely important information on the origin of populations from the early Holocene Letti, Argi and Affad (in-depth analysis forthcoming).

Summing up, all evidence of sepulchral activities in Letti and Argi should be linked with the Neolithic (5th millennium BC), leaving previous phases of early Holocene human presence with no data from burials. Paradoxically, we now have rich evidence of early settlement with no burials and no less ample evidence of later cemeteries with no settlements. Thus, the huge settlements in Argi identified as multiphase sites could

potentially provide important data on both early Holocene and later inhabitants of the area.

Due to the dire ongoing geopolitical situation in Sudan from mid-April 2023, further research is currently postponed. Plans for next season included excavations of a well-preserved part of the “Argi Crossroads” site to test newly acquired knowledge of the multiphase nature of early Holocene settlement in the Southern Dongola Reach. Also planned were exploratory surveys on the other side of the Nile, at the outlets of Wadi Howar and Wadi el-Melik. At present, the only current data available is from the Section française de la direction des antiquités du Soudan (SFDAS) survey in Multaga. Its prospective publication is expected to enable a fuller understanding of early Holocene settlement and the so-called lithic economy, including the processing of excellent-quality cherts most likely derived from non-local limestone outcrops (in preparation).

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# LTD1: Kerma settlement in the Letti Basin (Sudan)



**Abstract:** Research work carried out in the Letti Basin between 2022 and 2023 revealed a number of unknown sites including LTD1, showing the southern extent of the Kerman culture settlement sites (3rd–2nd millennium BC) in the Nile Valley. The findings represent an important voice in the decades-long debate on the “settlement hiatus” between the Third and Fourth Cataracts in this period. In addition, the results of the new excavations at Letti have yielded data on the material culture and economic basis of the Kerman community away from the capital. Research has found that the Letti population closely followed the cultural and economic patterns known from the capital. This is evidenced by artifacts, e.g. Classical pottery, the organization of settlements, and the dominant role of ruminants –cattle and ovicaprids– indicated by the results of archaeozoological analyses. What is more, strontium analyses have yielded new data on the circulation of cattle far beyond the range of influence of one of Africa’s earliest civilizations, Kerma, previously claimed by researchers to have been limited to the Middle Nile. The new research at Letti provides important information on the functioning of the Kerma state, especially on the hitherto obscure issue of its provincial settlement.

**Keywords:** Nubia, Letti Basin, Kerma, settlement, pottery, lithics, archaeozoology

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Period of work: March 2022; January–February 2023

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## INTRODUCTION

New research carried out as part of the “Unearthing Pan-African Crossroads...” project has revealed a number of previously unknown sites in the so-called Letti Basin, an early Holocene Nile floodplain with ancient channels located in the Dongola Reach region. Thanks to favorable geomorphological conditions, cultivation in this area is more extensive than in other parts of the Nile Valley. An analogous and even more extensive area is the Selim Basin, located a few dozen kilometers north of Letti. There, the pre-Kerma culture emerged in the 4th millennium BC and was followed in the 3rd millennium BC by the rise of one of the earliest African civilizations: Kerma. In past publications, the Letti area was presented mainly as the economic hinterland of Old Dongola, the capital of medieval Makuria (Jakobielski and Krzyżaniak 1967–1968; Grzymski 1987). Archaeological research in the area was restricted to data from regional surveys conducted in the 1970s and 1980s (Kobusiewicz and Krzyżaniak 1974; Grzymski 1987). These studies provided evidence of intensive Neolithic settlement, as well as the presence of Kushite populations, including Kerman groups, in this area (Gratien 1978; O'Connor 1993; Chłodnicki and Grzymski 2018). In the 2022 season, survey work in Letti was repeated and followed by excavations at one of the identified and examined sites, LTD<sub>1</sub> (Letti Desert 1). LTD<sub>1</sub> featured well-preserved relics of a Kerma-period settlement, as evidenced by the chronologically homogeneous pottery assemblage found on the surface. The

Letti sites now mark the southern extent of Kerman culture settlement in the Nile Valley (Osypiński et al. 2022).

Archaeological research to date has indicated a lack of Kerman settlements in the vast area between Letti and the Fourth Cataract, where almost exclusively funerary sites have been recorded. The purported settlement hiatus was a subject of scientific debates (Bonnet 2014), but no clear hypothesis explaining this phenomenon has been put forward. Systematic surface surveys on both sides of the river have revealed only scarce Kerman material, usually found in assemblages attributable to somewhat later periods (e.g. Żurawski 2003; Osypiński et al. 2023, in this volume). However, the already mentioned cemeteries studied in the area of the Fourth Cataract, e.g. at Gamamiya, el-Widay and Hosh el-Guruf or el-Ar, are linked to the Kerman horizon (Sip 2007; Emberling and Williams 2010; Osypiński 2010; Welsby et al. 2018).

One of the key topics in the debate was the economic model of the Kerman communities, especially the pivotal symbolic and economic role of cattle characteristic of this culture. Its prime examples are the burials of rulers from the Middle and Classical Kerma periods featuring monumental tumuli surrounded by thousands of bovine bucranions (frontal bones with horns). The horns bore numerous traces of intentional deformations, evocative of effects of contemporary practices among pastoral communities in Southern Sudan and Ethiopia (Chaix, Dubosson, and Honegger 2012). Archaeozoological data from Kerma, on the other hand, in-

dedicate a gradual decline in the economic role of cattle over time in favor of sheep and goats. Louis Chaix also raised the issue of the origin of large herds of primitive cattle in Kerma. Neither the Selim Basin nor the Nile Valley could provide pasturage extensive enough to support an economic model based on nomadic grazing of large cattle herds. However, until now, the question of the origin of cattle in the capital has remained in the realm of speculation and hypotheses in favor of its remote origin (Chaix 2011).

A major shortcoming of the debates

on the origins and economic foundations of Kerma was the lack of data from provincial settlement sites located outside the Selim Basin. The southern extent of the Kerman state remains hypothetical and is currently defined by cemeteries from the area of the Fourth Cataract and the Bayuda Desert (Paner 2014).

In this context, the new data from Letti are of great informative value, filling important gaps in the knowledge of how one of Africa's first states (other than the Egyptian civilization) emerged and functioned.

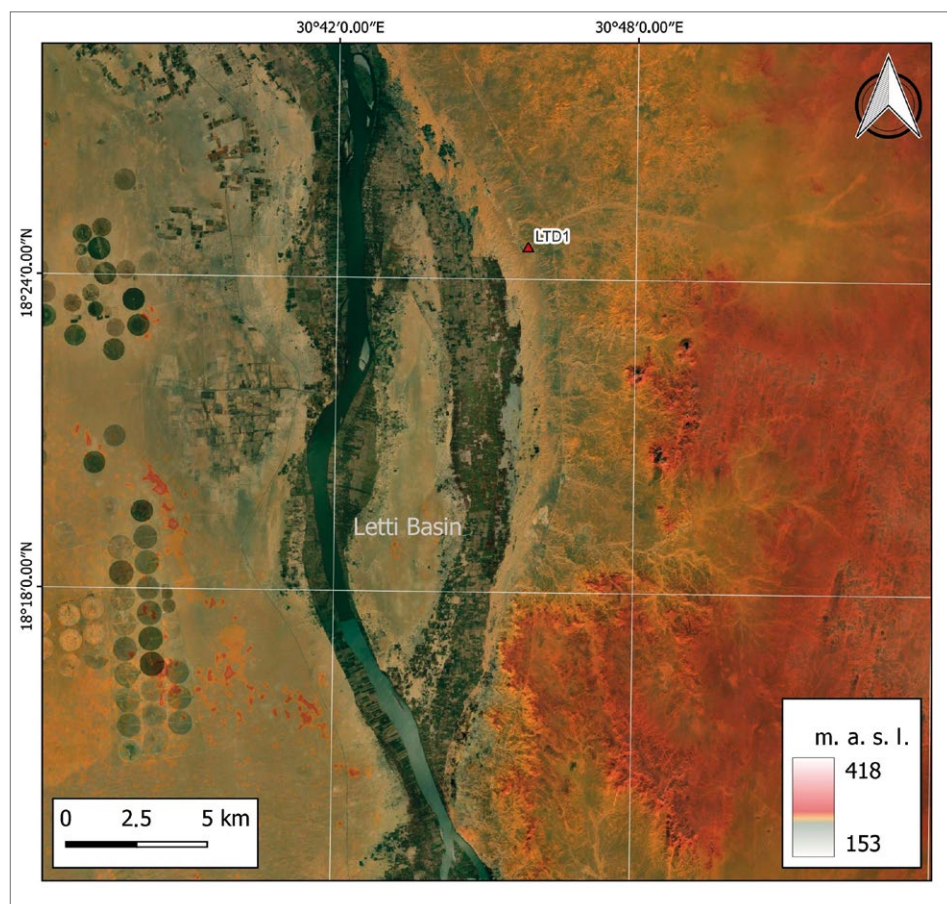


Fig. 1. Location of the LTD1 site in the Letti Basin, Sudan (Base map and editing P. Wiktorowicz)



## LOCATION AND SURVEYS

Site LTD1, discovered in March 2022, is located on the northeastern edge of the Letti Basin. It was a sandy island located halfway between the Third and Fourth Cataracts, extending from the bank of the Nile in the west to an extinct channel known as Khor Letti in the east, on the border with the Nubian Desert (18°24'30.59" N, 30°45'48.09" E) [Fig. 1]. Exploration of the site started right after its discovery (Osypiński et al. 2022) and was continued in January – February 2023.

The site lies in the vicinity of the Letti Gism 1 village, located 300 m to the southeast, and a modern Muslim cemetery situated directly to the north [Fig. 2].

In the 2022 and 2023 seasons, work was carried out in three trenches, each with dimensions of 5 m × 5 m, in crucial parts of the settlement. Trench T1 was established in the southwestern part of the modern cemetery, avoiding disturbance of the contemporary graves. Trench T2 was located approximately 180 m south-

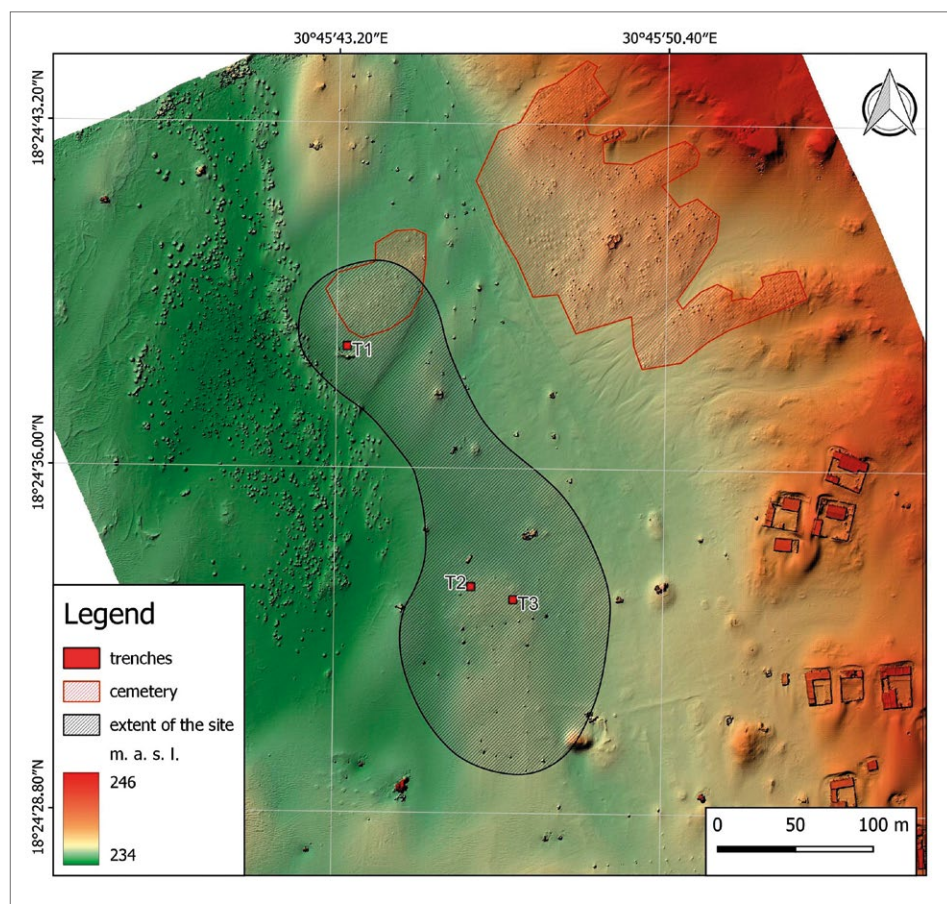


Fig. 2. General map of the site (Orthophoto R. Łopaciuk, base map and editing P. Wiktorowicz)

east of Trench T1, while Trench T3 was located 30 m southeast of T2 [see Fig. 2].

The excavation was carried out in arbitrary layers (levels) 5–15 cm thick. The method was adapted to the observed stratigraphy of the recorded deposits (contexts). The fills were screened within the distinguished units, and the material acquired was inventoried. Each of the levels was documented photographically (including the use of a drone for vertical photography) and on drawings, and height measurements were taken using an RTK GPS set.

### TRENCH T1

In Trench T1, outlines of the first pre-historic features were observed following the removal of a surface layer of

sand about 5 cm thick [Fig. 3:A]. They were visible most clearly in the north-west corner of the trench (Context 2), where a dark brown formation containing charcoals was exposed. Radiocarbon dating of a sample of this sediment yielded an age of  $3275 \pm 30$  BP (Poz-153193) = 1618–1497 calBC (91.6% probability). This feature likely represents the remains of a utility layer filling a cavity inside a dwelling or utility room. Two small near-circular features were also recorded at a similar level (Contexts 4 and 5). At each of the successive levels explored, the outlines and fills of further features—shallow pits and postholes—were observed. Most were fairly shallow, indicating an *ad hoc* function and

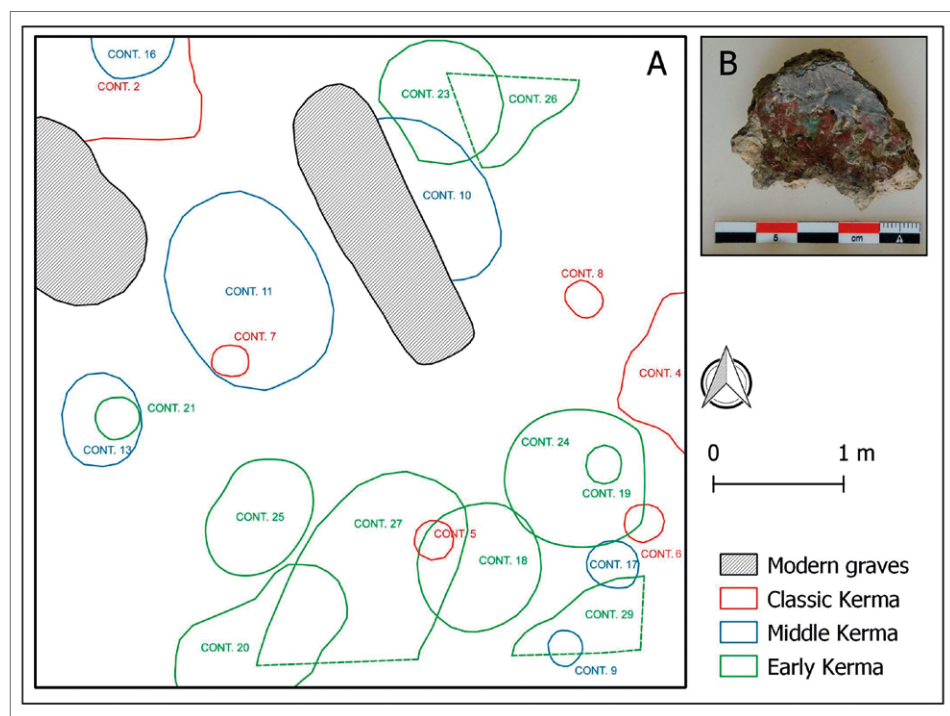


Fig. 3. Trench T1: A – contexts; B – melting form fragment (Drawing J. Kokolus, photo M. Osypińska)

renewed settlement activity in the same location with a natural rise in the surface level due to accumulation of wind-blown sand. This indicates a continuity of settlement over an extended period of time, as indicated by the sequence of radiocarbon dates. The oldest radiocarbon sample (clam shell from a cavity fill on Level V (Context 18) returned a date of  $3715 \pm 35$  BP (Poz-154235)=2205–2020 calBC (92.8% probability). Another sample (ostrich eggshell), collected from Level III (Context 3), yielded an age of  $3490 \pm 30$  BP (Poz-154234)=1892–1740 calBC (93.0% probability). The most recent date (the aforementioned Context 2) was some 500 years later. The deepest level containing artifacts (Level XII) was explored at about 1.5 m below the modern surface.

The artifactual material recovered during the exploration of Trench T1 was dominated by kitchen and table pottery, which amounted to 2484 fragments. A total of 2296 lithic artifacts was also identified, including

53 retouched tools and 18 fragments of various stone macrolithic forms, i.e. grinding tools (both grinders and querns). Animal bones —though highly fragmented— were present in almost every context explored [see below, *Table 1*]. A small number (eight specimens) of beads made of ostrich eggshell or their preforms were also found. Traces of metallurgy included two small bronze/copper smelts and a fragment of a ceramic pot with a glazed inner surface [Fig. 3:B]. The latter artifact came from the fill of a shallow pit (C11) associated with the younger phase of Kerman settlement.

## TRENCH T2

Immediately after cleaning the area of surface detritus, two stone structures were identified [Fig. 4]. The first one was examined in full, the other in part. The complete structure (C2) was a rectangular stone pavement, 2 m × 2 m in size. At the same level, two cut features were visible, a posthole (C4) and a pit

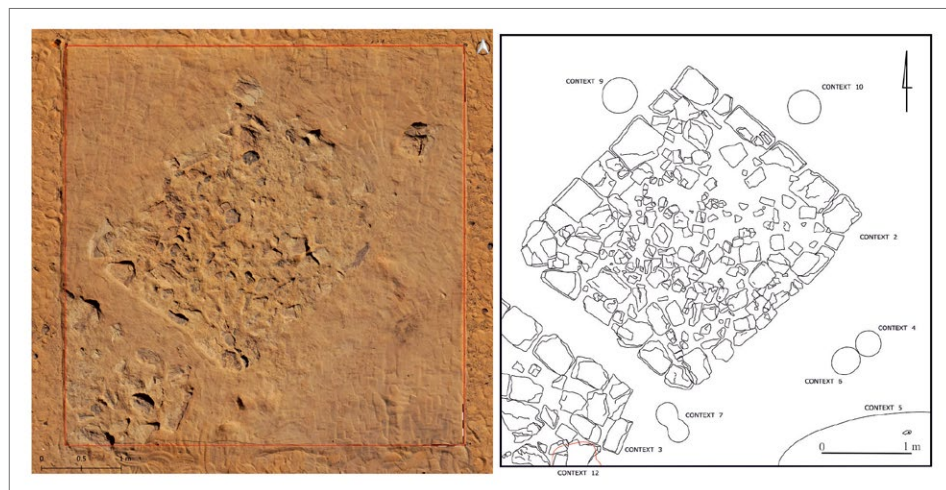


Fig. 4. Contexts of Trench T2 (Drawing J. Kokolus, aerial photo R. Łopaciuk)

(C5), both located in the southern part of the excavated area. More postholes were distinguished at underlying levels, but all the recorded features should be attributed to one occupational phase. A sample of charcoals for radiocarbon dating was taken from the fill of pit C5. It yielded an age of  $3335 \pm 30$  BP (Poz-163168) = 1688–1531 calBC (92.8% probability), which indicates the period of functioning of the stone structures in this part of the settlement.

The source material recovered from the exploration of Trench T2 was dominated by fragments of kitchen and table pottery (1071 fragments in total); 462 lithic artifacts (including 24 retouched forms) were recorded as well. Animal bones—highly fragmented—were present in almost every context explored [see below, *Table 1*]. Also noteworthy is the fairly large number of ceramic combs amounting to eight different fragments, mainly from the first layer (illustrated below, see *Fig. 11*).

### TRENCH T3

Removal of the loose sand cover exposed a fragment of a structure founded on at least two rows of stones dug into the ground. They lay parallel to each other, oriented northwest–southeast. In the northern part, more stones extended from them to the west and continued beyond the excavated area. At this level, in the northern part of the structure, an outline of a vessel (Context 2) was unearthed between two stones (Contexts 3 and 4) [*Fig. 5*]. Further work revealed the remains of two hearths, a pit, and a wall of mud bricks,

the continuation of which was observed to the south and east of the excavated area. It seems that the abovementioned stone structure damaged the mudbrick one [*Fig. 6*]. Noteworthy are fragments of mudbricks found within a radius of 1.5 m from the mud structure. An ostrich eggshell fragment, recorded at the lowest level explored (under the stones forming part of the aforementioned structure), was radiocarbon dated to  $3610 \pm 30$  BP (Poz-163078) = 2037–1887 calBC (93.2% probability). A charcoal sample was also taken from the fill of Pit C6 located in the southwest corner of the explored area, at Level I. It yielded an age of  $235 \pm 30$  BP, which corresponds to a dating span from the 16th century AD until modern times (95.4% probability).

The artifactual material recovered during exploration of T3 was dominated by fragments of kitchen and table pottery (1429 fragments in total, including numerous pieces of vessel C2); 1310 lithic artifacts (with a few retouched forms) were also recorded. Animal bones—highly fragmented and sometimes bearing traces of burning—were present in almost every context explored [see below, *Table 1*]. The excavation yielded a relatively high number (41) of ostrich eggshell fragments and five complete beads from this material. Several fragments of grinding tools (both querns and grinders) and two fragments of bone awls [illustrated below, see *Fig. 13*] came mainly from the upper, subsurface levels (C1). In addition, two fragments of ceramic combs were discovered.



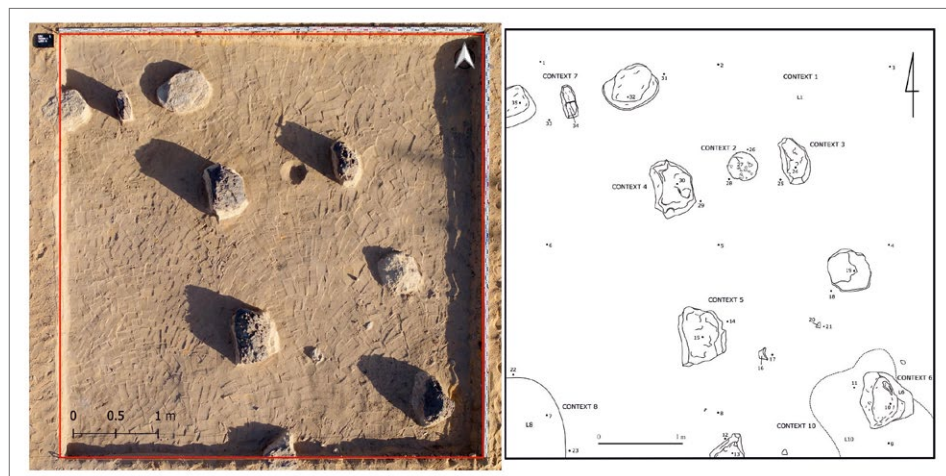


Fig. 5. Contexts of Trench T3 (Drawing J. Kokolus, aerial photo R. Łopaciuk)

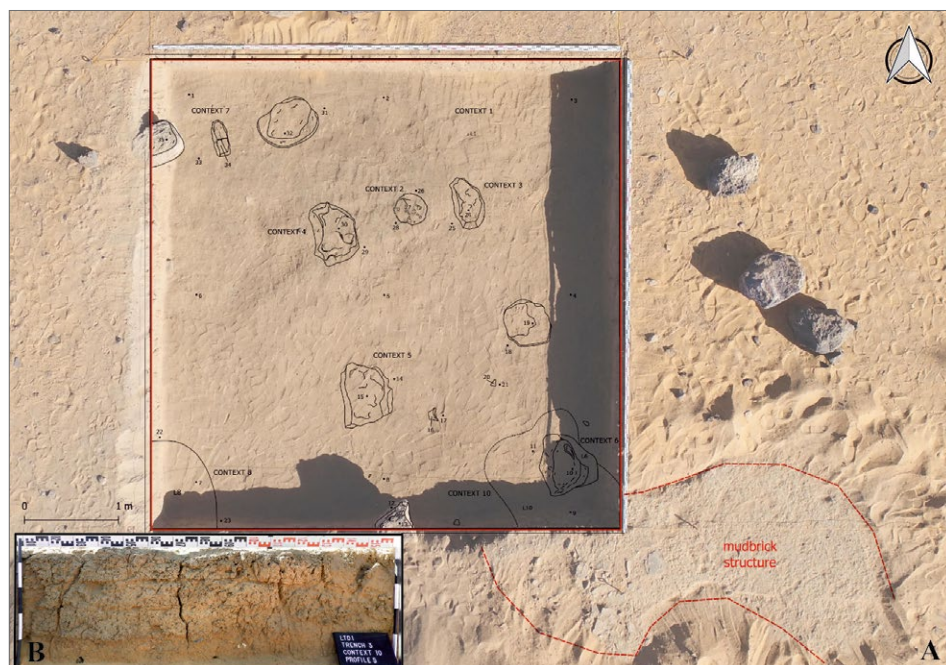


Fig. 6. Data compilation: structures around Trench T3. Inset photo: cross-section of a mudbrick wall (Drawing and inset photo J. Kokolus, aerial photo F. Osypiński)



## ASSEMBLAGE

### LITHIC AND STONE (MACROLITHIC) ARTIFACTS

Analysis of the stone artifacts found at site LTD1 has enabled identification of some general features of tool acquisition and use by the Kerman community.<sup>1</sup> Above all, no convincing evidence of local production of blade blank was found in any of the pits and contexts explored. This observation is also confirmed by

an analysis of the forms retouched or used as tools. Nor were any significant numbers of cores for flakes found (only a dozen specimens made of chert and single specimens of agate, quartz, and fossilized wood). On the other hand, there were several clearly older forms: Levallois flakes made of chert and different varieties of quartzitic sandstone. It can therefore be surmised that in the process of sourcing lithic raw material for toolmaking, the resources available in the area (older Stone Age sites) were used, although blade products were not favored.

The assemblages found are marked by the presence of rocks with traces of ad hoc quality testing — their proportion ranges from 2% to 3.5% depending on the batch of sediment (excavation area). This category includes both cryptocrystalline raw materials (chert, agate) and quartz. Among the debitage from the various raw materials, unprepared butt predominate, which is indicative of the simple and ad hoc methods used to obtain the blank for tools. The dominant raw material was quartz and, to a slightly lesser extent, chert, with a low proportion of other raw materials. Among the latter, agate and sandstone were the most abundantly represented (with a high share of clearly older artifacts) [Fig. 7].



Fig. 7. Artifacts from Trench T1: A – different kinds of raw material used on the site; B – samples of cores and tools (Photos P. Bobrowski)

<sup>1</sup> A total of 4070 siliceous rock artifacts were recovered from the three trenches during the 2022–2023 survey. The largest number came from Trench T1 (2298), Trench T2 yielded 462, and Trench T3 — 1310 artifacts. It was possible to fully analyze the specimens recovered from different contexts (features and depositional layers) within the first two excavation areas. Analysis of the material from Trench T3 was planned for the next research season, but initial observations of the artifact collection have already shown that it does not generally differ from the rest of the Kerman material.

The proportion of overheated artifacts varies between 19% and 37%, with no recorded intentional overheating of the tools' raw materials.

In terms of form, the repertoire of stone tools from the Kerman settlement is dominated by simple, ad hoc flakes with a denticulated edge [Fig. 8:A.4], most likely used for cutting soft organic materials. Analogous forms with abrupt retouch [Fig. 8:A.7] and perforators [Fig. 8:A.3, 5, 15–17] were also present. We have no indication of whether these forms were hafted in any way. In contrast, the use of mounted composite tools is suggested by the presence of several backed pieces made exclusively from flake

blank [Fig. 8:A.9]. A separate category appears to be wedge-type tools — perhaps a waste product of this use of artifacts are a few splintered pieces (including flakes with edge butts).

The flint materials find their technological and typological parallels at another site with remnants of Kerman settlement at Letti: Kadakol 1 (cf. Kobusiewicz and Krzyżaniak 1974; Chłodnicki and Grzymski 2018; Bobrowski et al. 2022).

### POTTERY FINDS

In the 2022 season, 805 pottery fragments from T1 were analyzed. Among them, several categories were distinguished [Figs 9–11].

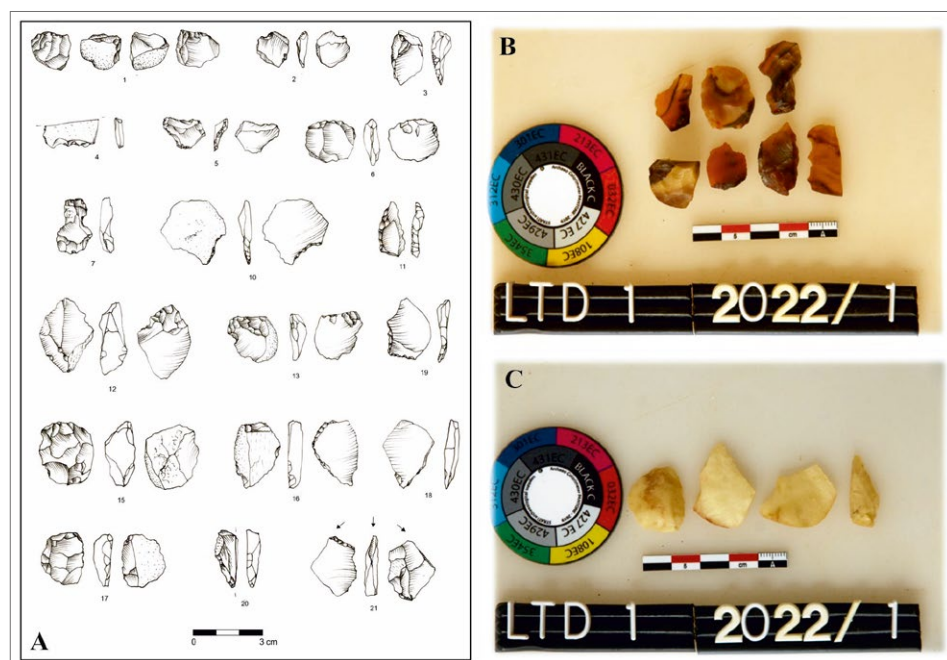


Fig. 8. Lithic artifacts from Trench T1: A – lithics: 1 – core, 2 – borer, 3, 5 – perforators, 4 – denticulated piece, 6 – scraper, 7 – notch (all made of agate); 8 – borer, 9 – segment, 10–12 – perforators, 13 – core (all made of chert); 14 – scraper, 15–17 – perforators (all made quartz); 18 – burin made of silica glass; B – samples of tools made of agate; C – samples of tools made of quartz (Drawings and photos P. Bobrowski)

Fine, well-polished pottery with very fine temper constituted 14% of the sample [see Fig. 9:A, B]. The surfaces were red (sometimes brown), black, or with a grey band between the red and black. The wall thickness was 2–6 mm. All these vessel fragments came from black-top beakers. The group also included well-polished pottery with fine temper, both surfaces black, and rims slightly thickened.

Fine, brown pottery with polished or smoothed surfaces constituted 11% of the sample. The break and interior were black, with very fine temper. The wall thickness was typically 4–6 mm.

Thick-walled pottery coated with a red slip on the outside and with black or brown interiors constituted 9% of the sample. The break was black, with fine mineral and or-

ganic temper. The wall thickness was mostly 6–10 mm. Thickened rims were decorated with oblique comb impressions [see Fig. 9:C].

Brown, coarse ware was the most common category (41% of the sample). The external surface was brown or grayish brown, the interior grayish brown to brown. The break was black with fine and medium mineral and organic temper.

Pottery with fine mat impressions was the second most popular category (21% of the sample). The whole surface was covered with mat impressions, and sometimes near the rim additional decoration constituted a row of deeply impressed dots. The external surface was grayish brown to brown, and the internal — dark gray to black. The break was black with abundant medium-sized chaff temper [see Fig. 9:D].

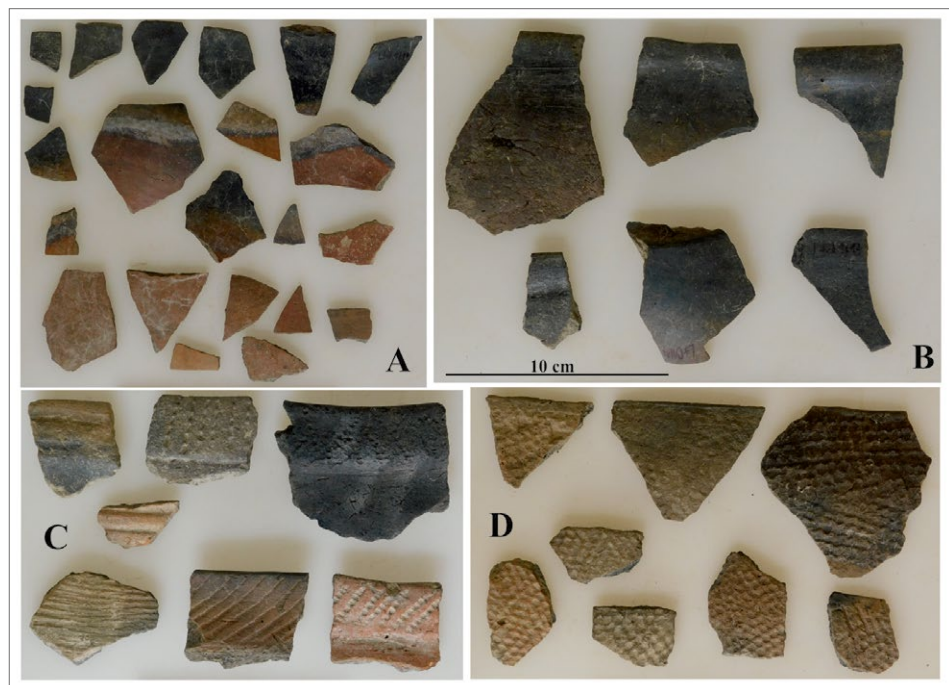


Fig. 9. Pottery from Trench T1: A, B – well-polished pottery with very fine temper; C – pottery with comb impressions; D – pottery with fine mat impressions (Photos M. Chłodnicki, editing P. Wiktorowicz)

Vessels with coarse mat impressions were rare (1%). They had brown or grayish brown external and internal surfaces. The color of the break ranged from dark brown to black. Fine to medium mineral temper was discerned.

About 3% of the pottery was decorated mostly with incisions, sometimes comb impressions. All the decorations were preserved only in small fragments.

A further 2500 fragments of ceramic vessels were collected during the 2023 season. The material in its mass appeared similar to that found in 2022, but some differences could be seen, and some types of decoration were not observed in

the previous season. Fragments of black-top ceramics and typical Classic Kerma cups were less numerous than in the previous season. Thick-walled pottery covered in red slip, with thickened rims decorated with diagonal comb impressions, was also rare. On the other hand, bowls with a straight rim decorated under the edge with oblique engravings, comb impressions or a grid pattern were more numerous [see *Fig. 10:A–D*]. Sub-edge decoration in the form of rows of triangular impressions was attested [see *Fig. 10:E*]. Storage vessels covered with mat impressions were popular. The share of ceramics decorated with paral-

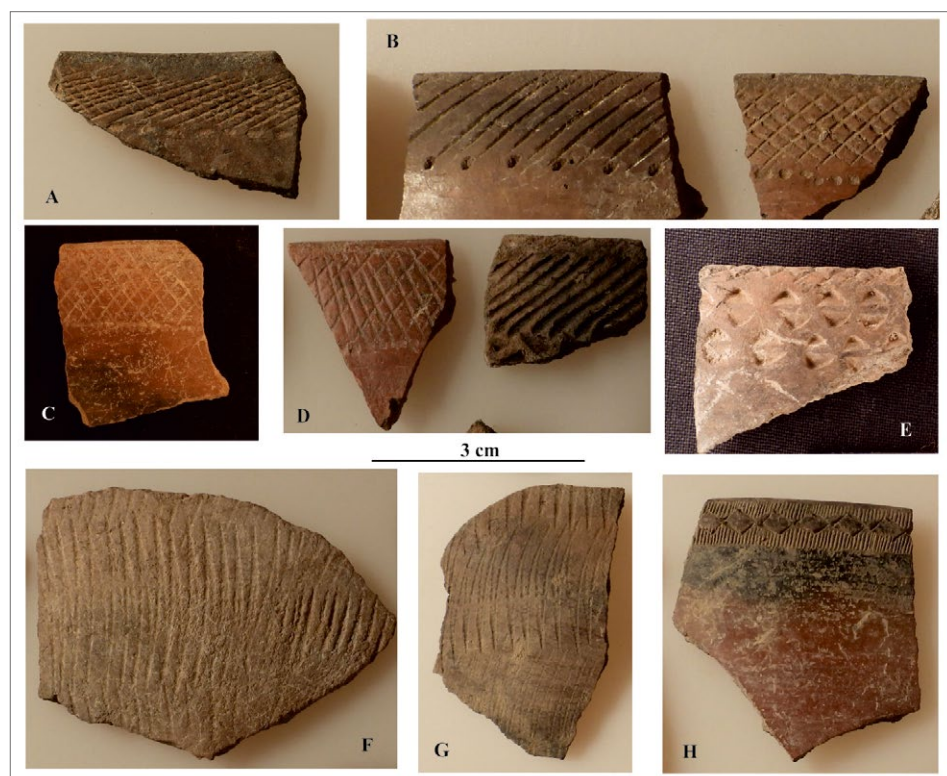


Fig. 10. Decorated pottery from Trench T1: A–D – diagonal engravings, comb impressions or grid patterns; E – rows of triangular impressions; F–G – engraved lines and zigzagging made using the rocker-stamp technique; H – geometric patterns (Photos M. Osypińska)





Fig. 11. Finds from trenches T1, T2, and T3: A – reconstructed early Kerma vessel; B – ceramic combs (Photos M. Osypińska, editing P. Wiktorowicz)

lel engraved lines as well as zigzagging made using the rocker-stamp technique was prominent [see *Fig. 10:F, G*]. Tools probably used for executing this type of decoration have been found at the site [see *Fig. 11:B*]. They were made from vessel fragments, but their form is the same as in similar stone tools known from other Kerma culture sites (cf. Nordström 2004: 253).

Of particular note is the only complete vessel discovered in Trench T1 (Context 21/L) [see *Fig. 11:A*]. It was decorated under the edge with a double zigzag placed between vertical lines. Other geometric patterns were also attested [see *Fig. 10:H*]. The decoration found on the ceramics from LTD1 appears as early as in the late phase of Early Kerma and the early phase of Middle Kerma (Gratien



Fig. 12. State of preservation of osteological materials from LTD1 and graph showing the shares of identified taxa in general terms (Photos and graph M. Osypińska)



1978: Figs 4, 41, 43, Pl. V; Bonnet 1996: 108; Privati 1999: Figs 2, 4, 7, 8; Welsby et al. 2018: Figs 3.14, 3.15). The more numerous fragments of black-top beakers found in the upper layers [see Fig. 9] indicate that settlement continued after the Classic Kerma period (Gratien 1978: Figs 61, 62; Bonnet 1996: 112–113; Privati 1999: Figs 10, 18–20; Emberling and Williams 2010: 24–32).

## ARCHAEOZOOLOGICAL DATA

### Material

During the two excavation seasons, a total of 3015 animal remains were discovered in the three trenches. They represented a variety of taxa including mollusks, fish, and birds, although mammalian remains were by far the

most numerous. The state of preservation of the faunal material from LTD1 was very poor. The relatively low percentage of remains identified was impacted by severe fragmentation, resulting from the fragility caused by great loss of organic components (collagen). The composition and geological structure of the overlying deposits (dominance of aeolian sands) were not conducive to the preservation of organic artifacts. The state of preservation was particularly poor in the materials from T1, where the percentage of elements identified is only NISP=20.16%. Slightly more diagnostic features were preserved in the animal remains from the other trenches, T2 and T3, where the NISP amounted to 43.1% and 42.6%, respectively [Table 1].

Table 1. Animals from the Kerma settlement at LTD1

	LTD1/T1		LTD1/T2		LTD1/T3 (2023)	
TAXONS	n	%	n	%	n	%
Cattle ( <i>Bos primigenius</i> f. <i>taurus</i> )	60	34.68	89	27.63	113	17.87
Sheep/goat ( <i>Ovis aries</i> / <i>Capra hircus</i> )	62	35.83	209	64.90	439	69.46
Rodents	2	1.15	2	0.62	2	0.31
Fox ( <i>Vulpes</i> sp.)	0	—	4	1.24	—	—
Common ostrich ( <i>Struthio camelus</i> ) – eggshell	5	2.89	13	4.03	35	5.53
Fish	—	—	1	0.31	—	—
<i>Pila africana</i>	44	25.43	3	0.93	21	3.32
<i>Bivalvia</i> sp.	—	—	1	0.31	2	0.31
<b>NISP</b>	<b>173</b>	<b>100 / 20.16</b>	<b>322</b>	<b>100 / 43.16</b>	<b>632</b>	<b>100 / 42.61</b>
Large ruminants	44	5.12	—	—	23	1.55
Medium ruminants	360	41.95	52	6.97	—	—
Mammals	233	27.15	347	46.51	745	50.23
Unidentified	48	5.60	25	3.35	103	6.94
<b>TOTAL</b>	<b>858</b>	<b>100</b>	<b>746</b>	<b>100</b>	<b>1483</b>	<b>100</b>

Six cattle tooth fragments were submitted for strontium isotopic analysis ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) at the university laboratory in Poznań. Preliminary interpretations of the results based on previous studies (Osypińska et al. 2021; 2023) have indicated that two samples were from organ-

isms of local origin (from the riverine floodplains), but the others were from animals raised outside the Nile Valley [Table 2]. Detailed studies concerning issues of isotopic composition of animal tooth enamel from Letti sites are discussed in detail in a separate, forthcoming paper.

Table 2. Strontium isotope analysis results for samples from the Kerma settlement at LTD1

Context (site-trench-context-level/Sample ID)	$^{87}\text{Sr}/^{86}\text{Sr}$	Error	Comments (compared to published data: Osypińska et al. 2021; 2023)
LTD1-T1-C3-V/PO23.2	0.708582	$\pm 0.000010$	Non-local
LTD1-T1-C1-V/PO23.3	0.708721	$\pm 0.000009$	Non-local
LTD1-T1-C1-II/PO23.10	0.708735	$\pm 0.000009$	Non-local
LTD1-T1-C22-VIII/PO23.11	0.707140	$\pm 0.000011$	Local
LTD1-T1-XI/PO23.12	0.707682	$\pm 0.000012$	Local
LTD1-T3-C1-V/PO23.13	0.708415	$\pm 0.000010$	Non-local

Discussion

The archaeozoological data from site LTD1 corresponds with the state of knowledge on the role of animals and meat consumption patterns in the Kerma period. It should be noted, however, that almost all previous data available for studies on this issue had come from the capital, Kerma. LTD1 is therefore unique in terms of archaeozoology, as it

complements and enriches our knowledge by providing data from a provincial settlement.

As in the metropolis, the economy in the Letti Basin was also based exclusively on ruminants, cattle (*Bos primigenius* f. *taurus*) and sheep (*Ovis aries*), to judge by archaeozoological analysis. So far, the remains of other domesticated animals —goats, donkeys, pigs,



Fig. 13. Artifacts from Trench T3: A – bone awls (Context 1, Levels II–V); B – ostrich eggshell beads (Photos M. Osypińska)

or dogs— have not been recorded. The well-recognized stratigraphy allowed us to observe an important change in meat consumption preferences in the Letti settlement that occurred over time. The older phases of the LTD<sub>1</sub> settlement were dominated by cattle remains, while in the more recent phases sheep were definitely prevalent. It should be added that both isotopic samples of cattle of local origin were from the earliest contexts, while in the later period only animals from outside the Nile Valley were recorded. A similar phenomenon of the declining role of beef in the consumption pattern in favor of mutton is observed in Kerma itself (Chaix 2006; 2011). There, this process is accompanied by an increase in the importance of cattle in funerary practices, e.g. the monumental deposits of “bucranions” at royal tombs.

Due to the lack of funerary data from Letti, we do not currently know whether cattle played a role in the symbolic sphere in the Kerma hinterland.

The presence of the remains of these animals tends to be linked to burials of the upper classes (Chaix 2001). This is, therefore, an interesting issue to clarify in the course of future research at Letti. It should be added that in the numerous burials of the Kerman horizon in the area of the Fourth Cataract studied to date, only the remains of sheep have been recorded.

In general, however, all contexts of LTD<sub>1</sub> showed a clear domination of the remains of small ruminants, mainly sheep [Fig. 12, graph]. The elements of the bovine skeleton occupied the second place. In addition, isolated bone fragments of fish (Nile catfish) and fox, ostrich eggshell beads and semi-finished products [Fig. 13:B], a Nile oyster shell fragment, and bones of small rodents were recorded — the latter most likely a natural feature of the environment.

The anatomical distributions of cattle and sheep remains indicated local meat consumption and no evidence of distribution outside the Letti settlement area.

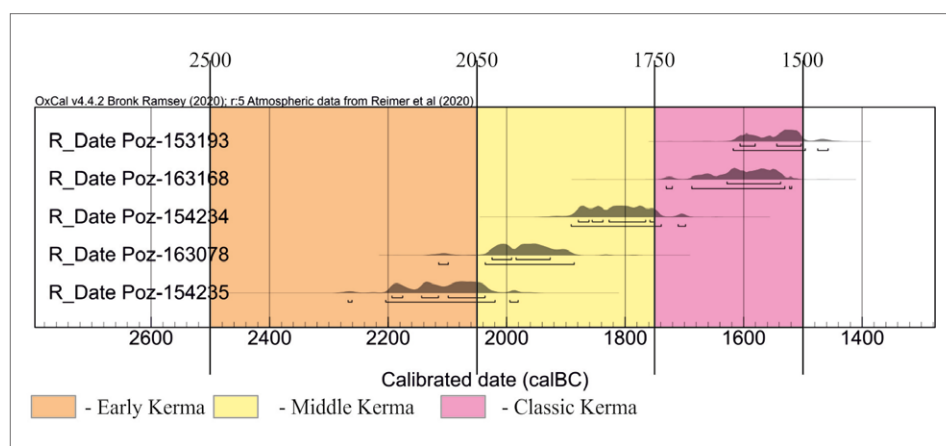


Fig. 14. Absolute chronology of the excavated trenches. Results of calibration of radiocarbon dates (Poznań Radiocarbon Laboratory)

The lack of distinctive traits made it impossible to assess the sex profile of the slaughtered animals. However, it was possible to assess their age at the time of death. The proportion of animals killed before maturity was low and similar for both cattle and sheep, amounting to less than 2% of the total remains in both taxonomic groups (ovicaprids 1.8%; cattle

1.9%). Due to the high fragmentation of animal remains, only a few measurements could be made. A morphological feature noted was the hornedness of the ruminant varieties bred at Letti.

Two ad hoc bone tools of the awl type were made from fragments of shafts of the long bones of a large ruminant [Fig. 13:A].

## SUMMARY

The results of two seasons of excavation at site LTD1 have revealed the remains of a settlement in a good state of preservation, which probably functioned continuously for at least 500 years, from the older, through the Middle, to the Classical phases of the Kerma culture [Fig. 14]. The latter chronology finds confirmation in the analyzed ceramic material, as well as in the radiocarbon dating of the samples collected. The next settlement phase at the site was already associated with the modern Muslim cemetery and village. The Kerma settlement undoubtedly included residential and storage lots (like the area of rectangular stone pavements), as well as a zone in which mudbrick structures of unknown function were erected. The site should undoubtedly be interpreted as a local settlement.

Importantly, surface reconnaissance has indicated the existence of similar settlements in the immediate vicinity, both in the Letti Island area and on the edge of the desert plateau (Osypiński et al. 2023, in this volume). Assuming their similarity to LTD1, these settlements indicate that the Letti area was highly attractive for permanent settlement with an economy based on agriculture and resource control. However, no evidence of a dominant role of large ruminant husbandry has been found. Letti cannot, therefore, be seen as a cattle-breeding base for the kingdom of Kerma, but the first isotopic data have indicated that an elaborate system of importing these animals from outside the Nile Valley was in operation from the Middle Kerma period onwards.

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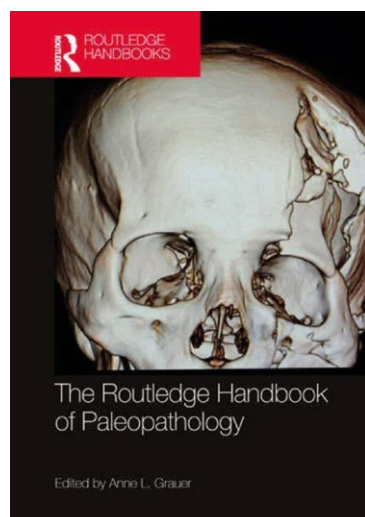


# Book review

Anne L. Grauer (ed.), *The Routledge Handbook of Paleopathology*. London: Routledge (Taylor & Francis Group), 2023; ISBN 978-0-36764-067-5 (hardcover); ISBN 978-1-00313-099-4 (eBook); 692 pages, 44 figures

This edited volume by Grauer and colleagues marks an update on the state of paleopathology as a field of study. The intent of this handbook is not to assist in the identification of pathological conditions and differential diagnoses, a focus already well represented in numerous other recent publications, including *Ortner's Identification of Pathological Conditions in Human Skeletal Remains* (Academic Press, 2019) and *Paleopathology of Children: Identification of Pathological Conditions in the Human Skeletal Remains of Non-Adults* (Elsevier, 2018), but rather seeks to provide broader foundational discussions around paleopathology as a discipline along with theoretical syntheses focused on topics addressed by paleopathological research. This handbook primarily engages with pathological conditions among human populations, though contributions on the fossil record (Chapter 29) and zooarchaeology (Chapter 30) are also represented.

Adopting a tripartite division, *The Routledge Handbook of Paleopathology* utilizes a stepwise approach to introduce readers to the field of paleopathology: Part I—Applications, Methods, and Techniques in Paleopathology; Part II—Investigating Diseases and Conditions of the Past; and Part III—Theoretical Approaches and New Directions. This division of sections follows a logical progression of knowledge familiarization. Readers are first introduced in a broader sense to the field of



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paleopathology, its methods, and larger questions, before proceeding to focused chapters dedicated to pathological conditions, including trauma, treponemal disease, and dental disease, among others. Chapters in Part III demonstrate how the foundational frameworks established in Parts I and II can be operationalized in broader conceptualizations of what life was like in the past and how paleopathology can contribute to discussions of lived experiences such as stress, structural violence, and disability, among other areas, before looking to future directions of the field. The topics considered across the three sections of this volume are not as important for their novelty, as such topics in many ways are as old as the field of paleopathology, but rather for the discourse direction they provide around where the field has been and where it might, and perhaps should, go as it continues to develop into the future.

The combined voices of the global network of scholars represented in this volume create a dynamic point of intersectionality. The benefit of handbook volumes such as this one is the creation of an arena of dialogue. While each chapter stands on its own, advancing independent narratives, the sum of the collective parts creates an environment of synergy in which debate, advancement of methodologies across multiple lines of evidence, and problematization through various lenses act together in a singular, channeled effort, to establish benchmarks of the field. With each iteration of a handbook of this magnitude the breadth and width of a discipline are laid bare, allowing for a litmus test of the state of the field at that moment in

time, providing a useful accounting of avenues of research that will then trend on along different routes, spreading from this nodal iteration to develop further in their own avenues until the next compilation is realized in a future handbook. Accordingly, this volume provides a useful single-source tool for research guidance on manifold topics related to paleopathology that can aid in providing further direction as well as succinct syntheses of given aspects of the field.

The language utilized in this volume is overall quite accessible in tone. While not an explicit aim *per se*, the achievement of creating such a diverse volume with numerous authors across multiple technical fields that can be readily engaged with by novices and experts alike is a commendable accomplishment, making this volume useful to both those already familiar with the field as well as individuals who may be seeking to learn what the field is about and engage with broader ongoing debates.

Beyond simple benefits from signposting to other specialist literature, this volume seeks to update and further contextualize topical debates and themes within paleopathology. Chapter 16 on treponemal disease presented by Baker, for instance, further problematizes conceptions of the spread of treponemal disease, drawing attention to perceived shortcomings of the Columbian exchange model and the need to further investigate connections with the African slave trade and population mobility in relation to colonialism, as well as engaging with recent DNA evidence to further demonstrate the dangers of equating modern distributions of bejel, syphilis, and yaws with



premodern occurrences of treponemal disease. The discussion presented about treponemal disease also highlights several challenges faced by paleopathological research, namely that several global regions have been disproportionately investigated while others have yet to be investigated, and that integration of non-Western literature and oral histories has been comparatively limited to date.

Readers of this volume will notice, in particular, increasing engagement with genomic evidence for developing evolutionary models and further understanding experiences of pathological conditions in the past, with a dedicated chapter on paleogenetics and genomics presented by Sabin and Stone (Chapter 8). Advances in pathogen detection sensitivity coupled with exponential growth in analytical capacities, namely with the advent of high throughput next-generation sequencing (NGS), have provided unparalleled opportunities for advancing paleopathological discourses. Beyond refinement of taxonomic relationships and the global distribution of pathogens, advances in aDNA capacities have made it possible to further identify and quantify heritable conditions as well as the presence of pathogens in instances where skeletal alteration is not expected, such as smallpox and plague, and where impacts to the skeleton may not have developed by the time of death or developed in an unidentifiable configuration, leprosy and tuberculosis being prime examples. Advances in genomic analyses also bring additional opportunities for assessing the alignment of macroscopic lesions with DNA evidence of underlying pathogen loads.

Advances in imaging technology have played a revolutionary role in curation, allowing for virtual analyses and thus reducing the need for invasive sampling. Advances in imaging capacities have also widened the scope of paleopathological assessment possibilities, allowing for broader identification of soft tissue pathological conditions. Notably, the use of computer tomography (CT) has provided an avenue for identifying atherosclerosis among the mummified remains of past populations, a finding which has pushed back the antiquity of this previously proposed “modern” condition significantly.

A unique feature of this volume is the consideration of public perceptions of paleopathology. In an increasingly interconnected social media world, the question of “what do people think we are saying vs. what we are actually saying,” is all the more pertinent and impactful. Chapter 32 by Killgrove and Buikstra addresses this question head-on, pointing out the pitfalls of various “public” interpretations of nuanced research but also the benefits and impetus upon researchers to communicate clearly with broader audiences. The need to increase engagement through plain language venues and community-centered practices is a route forward that benefits both researchers as well as the communities they work within, creating opportunities for feedback and mutually beneficial returns on research investments.

Numerous challenges have faced the field of paleopathology since its inception, both in terms of theoretical frameworks and methodological approaches, as well as around questions of ethics and community engagement. As Grau-

er, among several other authors in this volume, points out, the early roots of both paleopathology and more broadly biological anthropology are steeped in a number of difficult legacies that saw social position and power differentially dictate what research was undertaken. Such social dynamics also played a role in the acquisition and research use of global skeletal collections from numerous questionable contexts, including the remains of individuals who had no known relatives to claim them, colonized and racialized populations, incarcerated individuals, skeletons collected through grave robbing, as well as exported skeletons from various global regions, most notably from India where thousands of skeletons per year were exported for scientific use over a 150 year period. As this volume points out, the only way to move forward

has been and continues to be recognition of instances of broader social injustice wrought upon various communities by earlier practices and seeking to do better in the future through ethically grounded and community-engaged research.

While suitably written for a broader audience, the core demographic that will find this handbook most useful is individuals and institutions engaged with biological, anthropological, and paleopathological research. Beyond the content of each contributed chapter, the cited sources provide highly valuable foundational literature, allowing this edited volume to serve as a starting point for delving deeper into additional areas of paleopathological inquiry. A welcome addition to research and university libraries, this updated volume will remain a key reference resource for quite some time to come.

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