

TELL EL-RETABA 2007–2008

By Sławomir Rzepka, Anna Wodzińska, Jozef Hudec, Tomasz Herbich

Archaeological explorations of the site of Tell el-Retaba in Wadi Toumilat have been carried out by a Polish-Slovak Archaeological Mission working under the auspices of the Polish Centre of Mediterranean Archaeology, University of Warsaw, ever since 2007. Previous excavations had already established the existence on this spot of an important fortress controlling the route between the Eastern Delta and the Sinai in the Ramesside period. The first regular large-scale excavations of the site were conducted more than 100 years ago, but the gaps in our knowledge are still substantial – virtually nothing is known about Tell el-Retaba before the Ramesside period and very little about its history after the New Kingdom. Even for the period of the 19th and 20th Dynasties, which is when the fortress existed, there is practically no information about its organization and functioning. Thus, the aim of the present project is to reconstruct the history of the settlement in Tell el-Retaba from the earliest times until the end of its existence.

1. PREVIOUS EXCAVATIONS ON THE SITE

The site was investigated scientifically for the first time by E. Naville in 1885. Twenty years later W.M.F. Petrie conducted large scale excavations and his publication remains practically the only source of information on Tell el-Retaba. It is not to say, however, that there was no archaeological activity on the site for the next 100 years. Retaba was excavated by several Egyptian and one American archaeological mission, and it was also surveyed twice, but nothing (except the survey results) has been published from this work. The present team has consulted excavation reports in the archives of the Supreme Council of Antiquities and efforts are being made to locate and study the finds from these earlier excavations.

This brief overview of work never mentioned before in archaeological literature is intended to give the reader a fuller understanding of the history and archaeology of Tell el-Retaba.

1885 E. Naville¹

Despite finding a number of New Kingdom objects, Naville came to the surprising (and erroneous) conclusion that he had discovered a Roman military camp.

1906 W.M.F. Petrie²

Petrie discovered the defense walls of a fortress dating to the Ramesside Period and of an older fort, allegedly from the Hyksos period. Within these walls he found some remains of temples and other buildings. Pottery, stone vessels and small objects from the site testify to the existence of a settlement from at least the Old Kingdom to the Third Intermediate Period. A late New Kingdom and Third Intermediate Period cemetery was discovered to the north of the fortress.

1930 S. Schott³

During a survey of the Eastern Delta a large number of flint tools was found. They were dated to the Archaic and Old Kingdom periods.

1972 Mohammed Abd el-Haq Ragab, Suez Canal and Sinai Inspectorate⁴

Small-scale excavations (24 by 14 m) were conducted to the southeast of the fortress, on the outskirts of Ezbet Abu Said village. Several insubstantial vaulted mud-brick tombs were discovered, two with pottery coffins.

1977 J.S. Holladay, Wadi Toumilat Survey⁵

The site was surveyed again by the Canadian Wadi Toumilat Survey Project. Large quantities of

¹ NAVILLE 1887, 24 ff.

² PETRIE and DUNCAN 1906, 28 ff.

³ SCHOTT *et al.* 1932, 44.

⁴ Unpublished. The team has been granted permission to consult reports in the SCA archives and to localize and study objects found during these excavations.

⁵ HOLLADAY 1982; REDMOUNT 1989, 125 ff..

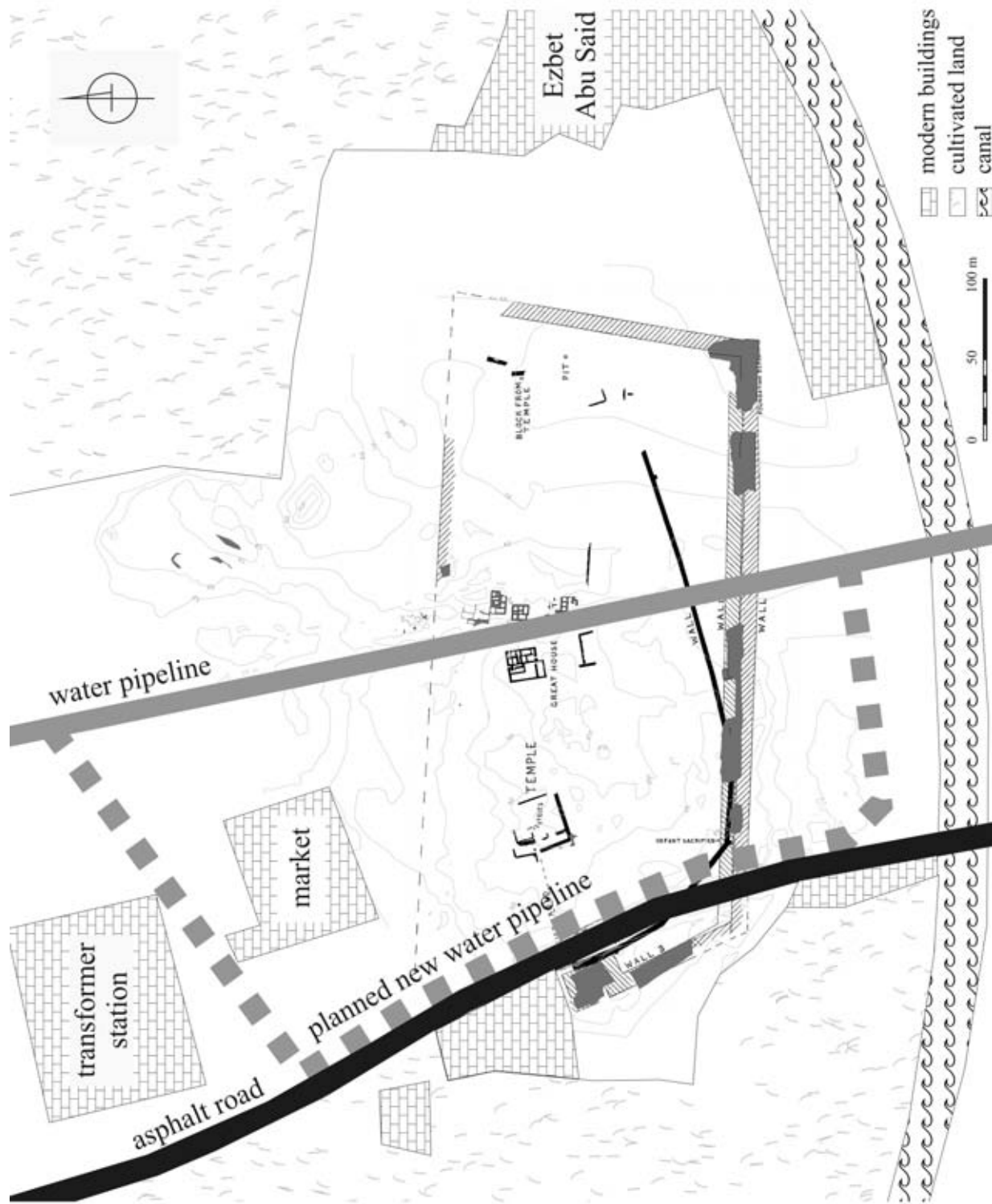


Fig. 1 Map of Tell el-Retaba showing areas destroyed or threatened by modern development

sherds collected were dated mostly to the New Kingdom and Third Intermediate Period.

1977–1981 H. Goedicke, John Hopkins University
Testing on the tell covered, among others, a place identified by Petrie as a temple. Confirmation was obtained of 7-meter deep deposits with archaeological layers from the Second Intermediate Period attested at the bottom, but the results have not been published.⁶ Some of the documentation is accessible on the website of Michael Fuller, one of the members of this mission.⁷

1984 Mahrous Abdallah Ali, Suez Canal Inspectorate⁸

Egyptian rescue excavations were carried out to the northwest of the tell where a large transformer station was planned. A late New Kingdom – Third Intermediate Period cemetery had already been localized there by Petrie and more vaulted mud-brick burial chambers were now investigated. The burials, some in pottery coffins and some in wooden ones, appear to have been furnished quite richly considering the golden amulet and bracelet that were found with one of the bodies. The excavator dated the tombs to the Late Period, but a Third Intermediate Period dating seems more appropriate. These tombs were found c. 0.50 m beneath the surface. An older series of tombs, possibly from the New Kingdom, was located one meter down, but could not be explored because of rising ground water. Nothing can be said of their architecture and furnishings.

1984–1985 Mohammad Selim Hassan el-Hangoury and Magdy Saad Salip, Suez Canal Inspectorate⁹

Digging a long narrow trench (c. 200 by c. 10 m) east of the water pipeline (see below, section on the preservation of the site and major threats), the excavators distinguished two ancient strata: a “New Kingdom” and a “Middle Kingdom layer” under the modern surface layer. In their New Kingdom layer, they found a number of poorly built and poorly preserved structures, many of them round in plan and with traces of fire on the walls. These structures were filled with ashes, preserving also many remains of animal bones and

plants. Saad Salip believed the area to be an artisans’ quarter, but without reexcavation it is impossible to determine whether the structures (of which no plan, section or photo was included in the report) were furnaces or rather storage silos. In the latter case, the traces of fire on the walls would refer to a time when the structures were already abandoned and used as a dumping place. Neither the pottery nor the small finds from this “New Kingdom layer” were illustrated in the report, but judging by general site stratigraphy, these remains should be of late New Kingdom or Third Intermediate Period date.

Ruins of a well preserved rectangular building were excavated in the so-called “Middle Kingdom layer”. The walls were preserved to a height of about 1.50 m including the beginning of domes in the corners. Passages between the rooms were quite small (only c. 0.80 m high). Saad Salip was probably right in interpreting this structure as a “storeroom”. Although in plan it resembles one of the Third Intermediate Tombs found by Petrie,¹⁰ the finds mentioned in the report do not suggest a funerary context. The building may have been a granary and the small openings between the rooms were not doors, but slots for extracting the grain stored inside. Saad Salip’s date to the Middle Kingdom is surely wrong. A New Kingdom dating is more viable, but without further cleaning and excavation nothing more precise can be said.

1988 Suleiman Mahmoud al-Said, Suez Canal Inspectorate¹¹

Reexcavation of the *migdol* in the western defense wall.

1990 Magdy Saad Salip, Suez Canal Inspectorate¹²

Digging of a section of the southern defense walls, c. 15 m long, revealed a number of child burials and two graves of adults. Most of the children were buried in amphorae, which – according to Saad Salip – should be dated to the late 18th and early 19th Dynasty. Unfortunately the stratigraphic relation between the burials and the defense walls is not clearly described in the excavator’s report.

⁶ Hans Goedicke and Betsy Bryan have kindly granted permission to study the mission’s field notes and documentation.

⁷ <http://users.stlcc.edu/mfuller/Retaba>

⁸ See note 4.

⁹ See note 4.

¹⁰ PETRIE and DUNCAN 1906, pl. XXXVA.

¹¹ See note 4.

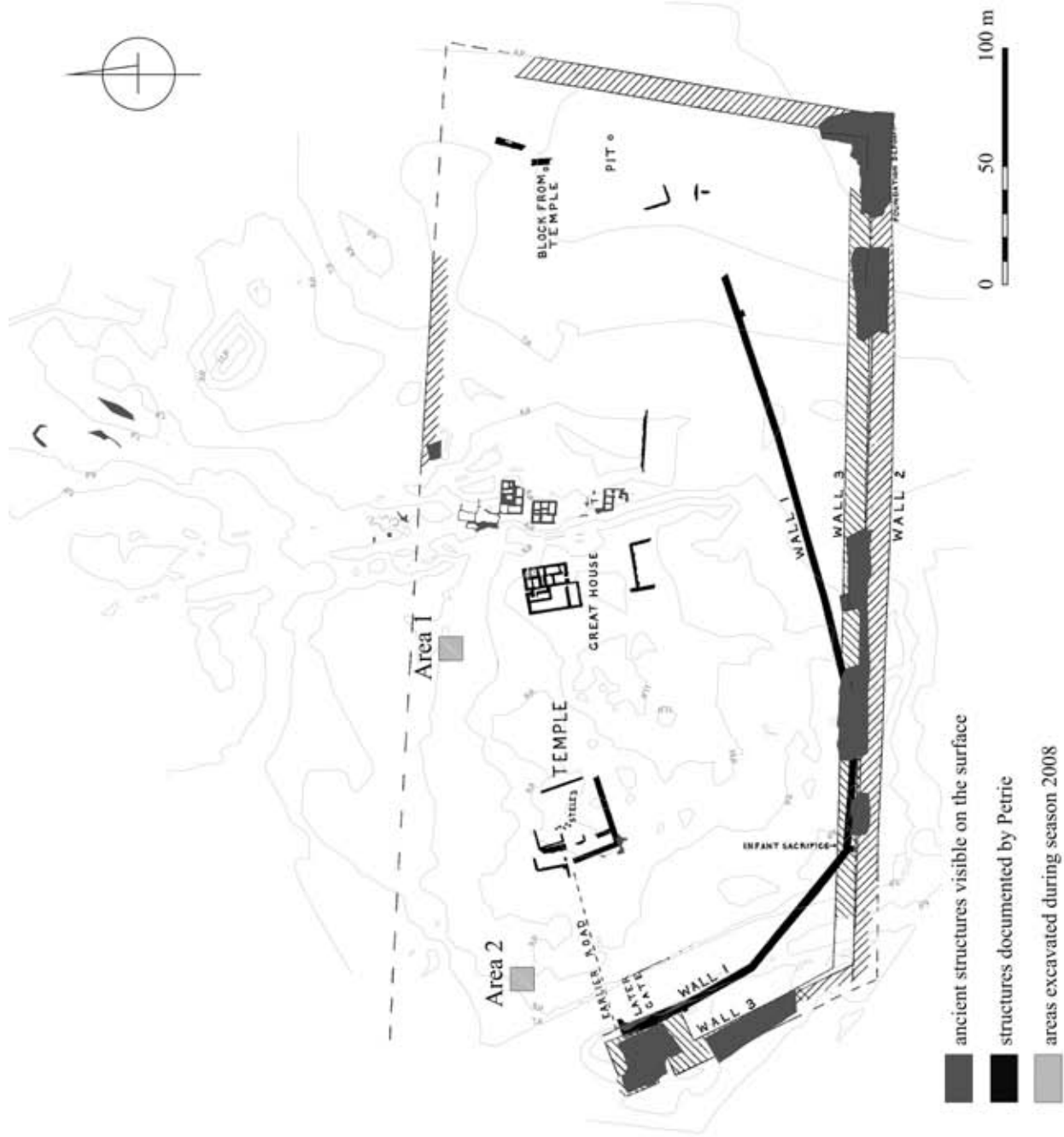


Fig. 2 Map of Tell el-Retaba showing ancient structures visible on the surface and areas excavated during the 2008 season

1997 Ragab Hussein Hosni, Suez Canal Inspectorate¹³

Clearing of part of the southern defense wall revealed nine rather poor burials dug into it. The burials were equipped with amulets and a necklace of glass stratified eye-beads, the latter of the same type as found by Petrie¹⁴ and dated to the 23rd Dynasty. This dating is surely too high as beads of this type occur (not only in Egypt, but in all of the Mediterranean) in the Persian period,¹⁵ so the tombs discovered by Hussein Hosni must also belong to the 27th Dynasty or later.

1998 Mohammad Abdel Maqsour, Suez Canal Inspectorate¹⁶

Two squares 10 × 10 m were opened in the northern part of the site. In one of them, a fragment of the northern defense wall was cleared. Close to this wall, inside the fortress, remains of a silo, c. 2.40 m in diameter, were excavated.

In the other square (its exact location is not clear from the report) a mud-brick tomb was found, apparently quite similar to the tombs found by Mohammad Abd el-Haq Ragab in 1972.

According to information from local antiquities inspectors, excavations have also been carried out in 2000 and 2002. So far no reports of this work could be found in the SCA archives.

2. POLISH-SLOVAK ARCHAEOLOGICAL MISSION, SEASON 2007¹⁷

The objectives of the first season of fieldwork included:

- evaluating site preservation,
- identifying major threats,
- locating structures excavated by Petrie at the beginning of the 20th century,
- verifying Petrie's documentation,
- and supplementing Petrie's documentation, for example, by tracing the northern defense wall.

Mapping, fieldwalking and geophysical survey were among the methods used for the purpose.

2.1. Site preservation and major threats

Serious damage to the site has occurred in relatively recent times (threatened or destroyed areas marked in Fig. 1). An asphalt road put in the late 1970s divides the site into a smaller western part and a bigger one on the east. It used to run on top of the tell, but a few years ago it was rebuilt making it safer, but destroying in the process any archaeological remains found in the part of the tell through which it was cut. This trench, about 20 m wide and up to 3 m deep, runs just east of the western fortress wall.

Huge pipelines bringing water from the Ismailiya Canal to irrigate an area called el-Hasma south of Tell el-Retaba have also caused serious damages. The two pipes, each c. 2 m in diameter, were laid in a trench c. 8 m wide and up to 5.50 m deep, cutting south to north through the center of the tell. The southern part of the tell was leveled to bring in heavy equipment. Some photos and plans documenting the scale of the destruction can be found on the website of Michael Fuller, a member of the John Hopkins University mission, which was working on the site at that time.¹⁸

The building of a large transformer station to the northwest of the tell in the mid 1980s damaged the late New Kingdom – Third Intermediate Period cemetery located there as well as the remains on the tell itself, where poles of the high-voltage power lines crossing the site N-S were erected directly on top of the southern defense wall of the fortress.

Government plans for a new water pipeline following the asphalt road further threaten the archaeological remains on the tell, especially the temple area identified by Petrie. The sides of the cut made for the road have already revealed some thick walls, apparently belonging to a large building, preserved to a substantial height of 1–1.50 m. An appeal to Egypt's archaeological authorities has resulted in action being taken by the Supreme Council of Antiquities to stop the building project and to preserve this important

¹² See note 4.

¹³ See note 4.

¹⁴ PETRIE and DUNCAN 1906, 33, pl. XXXVB.

¹⁵ Cf. SHIAH 1944, 269–273; cf. also SPAER 2001, 91.

¹⁶ See note 4.

¹⁷ April 12–30, 2007. Mission members: Sławomir RZEPKA (archaeologist, director of the mission), Jozef HUDEC (archaeologist, deputy director), Anna WODZIŃSKA

(ceramologist), Vojtech Gajdoš (geophysicist), Kamil Rozimant (geophysicist), Mahmoud Galal Mokhtar Khattab, SCA inspector. Thanks are due Mr. Tarek Harash, General Director of the Ismailiya Area, and Mr. Nasrallah Mohammed el-Killany, Director of the Ismailiya Area, for their professional involvement and generous support.

¹⁸ <http://users.stlcc.edu/mfuller/Retaba/Retaba1981.html>



Fig. 3 Southern defence wall of the Ramesside fortress, Petrie's "wall 2" (Photo S. Rzepka)



Fig. 4 A granary (?) in the middle of the fortress, discovered in 1984–1985 during excavations by the SCA (Photo S. Rzepka)

Pharaonic site in northern Egypt for further study and documentation.

2.2. Mapping

All traces of archaeological remains – defense walls and mud-brick structures – were mapped with state-of-the-art surveying equipment (altogether about 7000 measurement points), drawing a precise contour map of the site and of all of the structures, whether ancient or modern. For a better understanding, the map was combined with Petrie's published plan of architectural remains¹⁹ (Fig. 2), making it clear that some features excavated by Petrie can still be seen on the surface. Especially the thick walls of the Ramesside fortress (Petrie's "wall 2" and "wall 3") in their southern (Fig. 3) and western sections are quite easy to discern. Even the casemate structure of "wall 2" is to be recognized in places. The good visibility of these sections is due to recent clearing by Egyptian archaeologists in the 1980s and 1990s (see above). Structures that are now not traceable but were documented by Petrie include the earliest defense wall ("wall 1") dated by Petrie to Hyksos times (a controversial dating however)²⁰ and the "Great House" (of 18th Dynasty date according to Petrie). Of the Ramesside temple only very modest remains can be traced on the surface. On the other hand, a number of ancient structures not known to Petrie can now be observed on the ground. The most important are the substantially preserved (maximum height c. 1.50 m) buildings east of the Petrie's "Great House", in the middle of the fortress (Fig. 4). These are the structures (storerooms, granaries, workshops) excavated in 1984–1985 by Mohammad Selim Hassan el-Hangoury and Magdy Saad Salip (see above).

Some indistinct remains of mud-brick walls can be seen also outside the fortress, close to the defense wall in one place and about 100 m to the north of it (possibly the cemetery excavated by Petrie).²¹

2.3. Small finds

More than 600 diagnostic sherds²² and 58 small objects were discovered during the fieldwalking of the site. Most of these small finds are objects made of stone: fragments of vessels, weights, pounding



Fig. 5 Fragment of Ptolemaic faience vessel (Photo J. Hudec)



Fig. 6 Fragment of terracotta with representation of a horseman (Photo J. Hudec)

stones, slingstones. The most common type of stone among these finds is limestone; quartzite is also quite common, less frequent is red granite, quartz, greywacke and calcite. One is entitled to speculate that the relatively large number of quartzite fragments is a suggestion that the architectural elements and furniture of the temple of "Atum of Tjeku" discovered by Petrie were made of this material. This type of stone, quarried in

¹⁹ PETRIE and DUNCAN 1906, pl. XXXV.

²⁰ REDMOUNT 1989, 130.

²¹ PETRIE and DUNCAN 1906, 29.

²² Cf. WODZIŃSKA *forthc.*

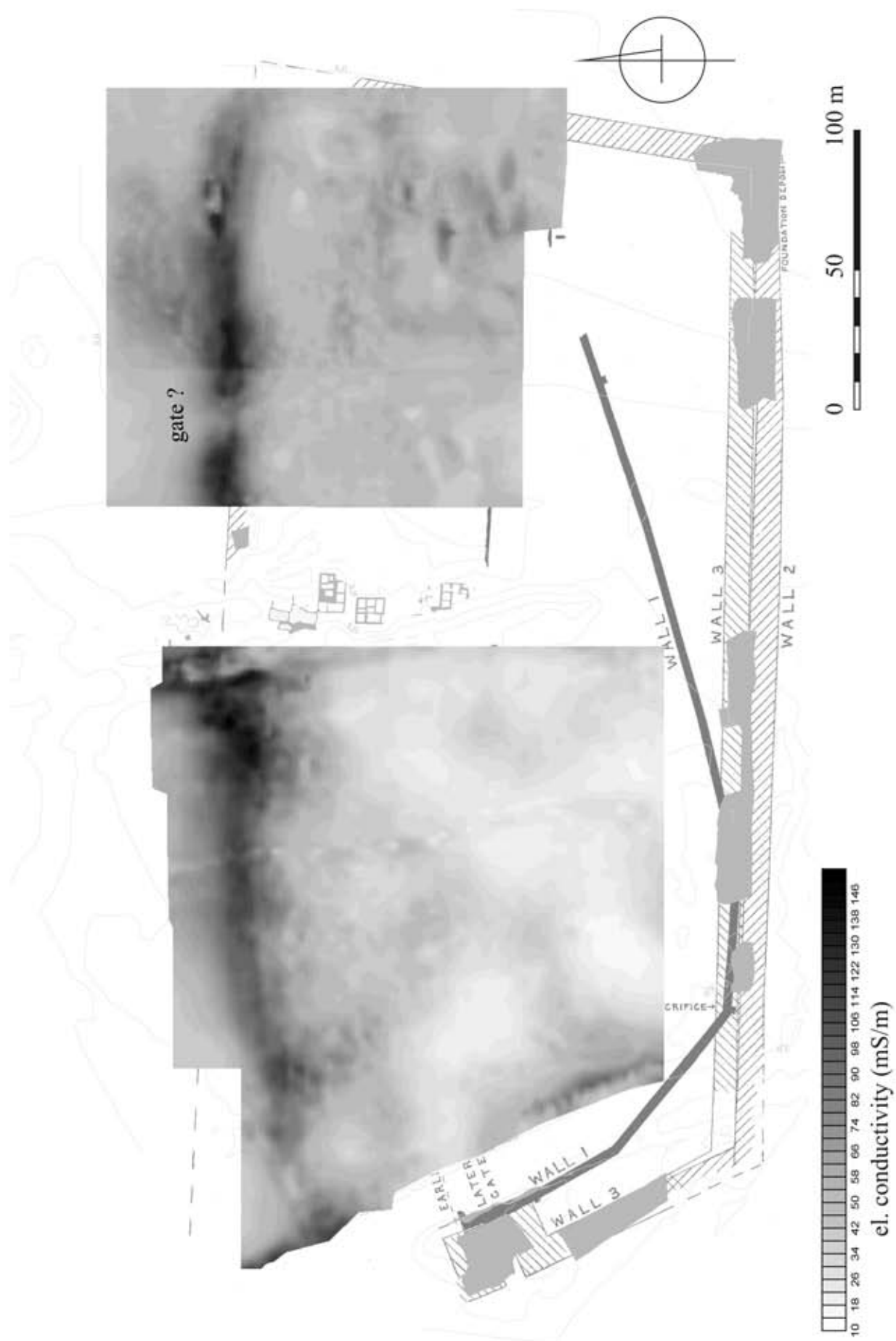


Fig. 7 Electrical conductivity map (Processing K. Rozimant)

Gebel Ahmar near Heliopolis, was a popular material for monuments related to the solar deities and solar ideology already during the Old Kingdom.

Artifacts made of Egyptian faience, copper, clay, and shell were also found. Meriting note is a small faience vessel decorated with a floral motif (Fig. 5), identified as a small goblet of a type well known from Egypt and abroad.²³ This vessel is a puzzling find, because of its date which is placed securely in the Ptolemaic period. Very limited pottery evidence and no architectural remains from this period have been identified on the site so far. It is generally assumed that by this time Tell el-Retaba was a settlement of no consequence and may have even been abandoned in favor of Tell el-Maskhuta. This luxury object (part of a burial set?) is proof that even in the last centuries of the 1st millennium BC Retaba may have been something more than a poor hamlet and/or cemetery. Another object of high artistic quality, also possibly from the Ptolemaic period, is a remarkable fragment of a terracotta horse rider (Fig. 6) found in the eastern part of the site.

Other small finds include, among others, part of a faience Hathor *sistrum*, a small faience amulet in the form of the god Pataikos, several faience beads, some kauri shells.

Objects made of copper are poorly preserved and their shape is difficult to identify. Two of them might even be evidence of copper smelting activities because of the copper slag traces they bear.

2.4. Geophysical survey

The main goal of the geophysical survey²⁴ was to locate the northern defense wall of the fortress. Petrie had excavated only a very small section of this wall, tracing the remaining parts hypotheti-

cally. The objective was to verify its position and locate a gate or gates, if any, giving access to the fortress from the north.

Dipole electromagnetic profiling (DEMP)²⁵ demonstrated that the northern wall did not follow a straight line (as the southern, western and eastern walls did), but clearly turned south in its western part (Fig. 7). The position of the gate also seems to have been located – an evident gap in the eastern section of the wall. Another gap is visible close to the western corner of the fortress, but the tell here is much lower and the defense wall may simply be destroyed. The gap is too broad for a gate anyway; moreover, its position here makes no sense as the big *migdol* in the western defense wall is just around the corner.

3. POLISH-SLOVAK ARCHAEOLOGICAL MISSION, SEASON 2008²⁶

The objectives of the second season were twofold:

- excavation of locations based on results of the 2007 survey;
- continuation of the geophysical survey using different methods and different equipment.

3.1. Excavations

Two locations were chosen for exploration (see Fig. 2):

Area 1 – location of a big limestone block in the center of the northern part of the site. The geophysical survey in 2007 traced the northern defense wall through this area, giving reason to suppose that the block was part of a big gate jamb despite the absence of any gap on the geophysical map tentatively corresponding to an entrance. Excavations soon revealed that the block was not *in situ* and that there was no gate in this place.²⁷

²³ NENNA and SEIF EL-DIN 2000, pls. 6, 40; REDISSI 1994, 423–434; ADRIANI 1932–1933, 31, fig. 6, pl. XV, 3.

²⁴ Carried out by Vojtech Gajdoš and Kamil Rozimant of the Faculty of Natural Sciences, Comenius University, Bratislava.

²⁵ For DEMP the area was divided into squares 50 × 50 m oriented N–S and E–W. Survey lines were set 2 m apart and the station interval was also 2 m. For more details, see RZEPKA *et al.* 2008.

²⁶ The second season of the Tell el-Retaba Archaeological Mission lasted from 12 August to 18 September 2008. The team comprised: Sławomir Rzepka (archaeologist, director of the mission), Jozef Hudec (archaeologist, deputy director of the mission), Anna Wodzińska (ceramologist), Veronika Dubcová (archaeologist), Karoli-

na Górka, BA (archaeologist), Sylwia Gromadzka, BA (archaeologist), Tomasz Herbich, MA (geophysicist), Łukasz Jarmużek, BA (archaeologist), Marcin Jakub Ordutowski (geophysicist), Radosław Soth, BA (photographer). Working with the mission as inspectors representing the SCA were Mahmoud Ahmed Mahmoud and Mustafa Hassan Mahmoud, whose help and support were invaluable to us. We would also like to thank Tarek Harash, General Director of the Ismailiya Area, for his involvement and support.

²⁷ One of the local workers told of the block being dragged to its present location in the 1990s from a spot to the east where the ground had been disturbed by the laying of the big water pipeline.

Area 2 – location in the northwestern part of the site, near the asphalt road crossing the site, in an area threatened by the planned construction of a new water pipeline (for major threats to the site, see above, section 2.1.1). Well preserved mud-brick walls visible in the cut for the modern asphalt road indicate that ancient structures can be expected in the area.

AREA 1

By Jozef Hudec

Excavations in Area 1 covered 10 × 10 m, divided into four squares 5 × 5 m. Squares Y255/X265 and Y250/X270 were excavated to no more than

c. 1.0–1.5 m; in the remaining two squares only the surface layer was cleared.

The upper layers in both excavated squares had been disturbed extensively by *sebbakhin* digging. In square Y255/X265, at least four big pits were recorded; excavations put the number of such cuts in square Y250/X270 at six. More than a hundred years ago Petrie described *sebbakhin* habits as follows: “... As in other ancient sites, so here, the natives remove large quantities of earth to lay upon the fields. But instead of this destructive custom exposing the earlier remains, as is the case on other sites, it makes the lower levels here even more inaccessible. Any pit in this region is quickly filled up with sand from the desert, and the holes

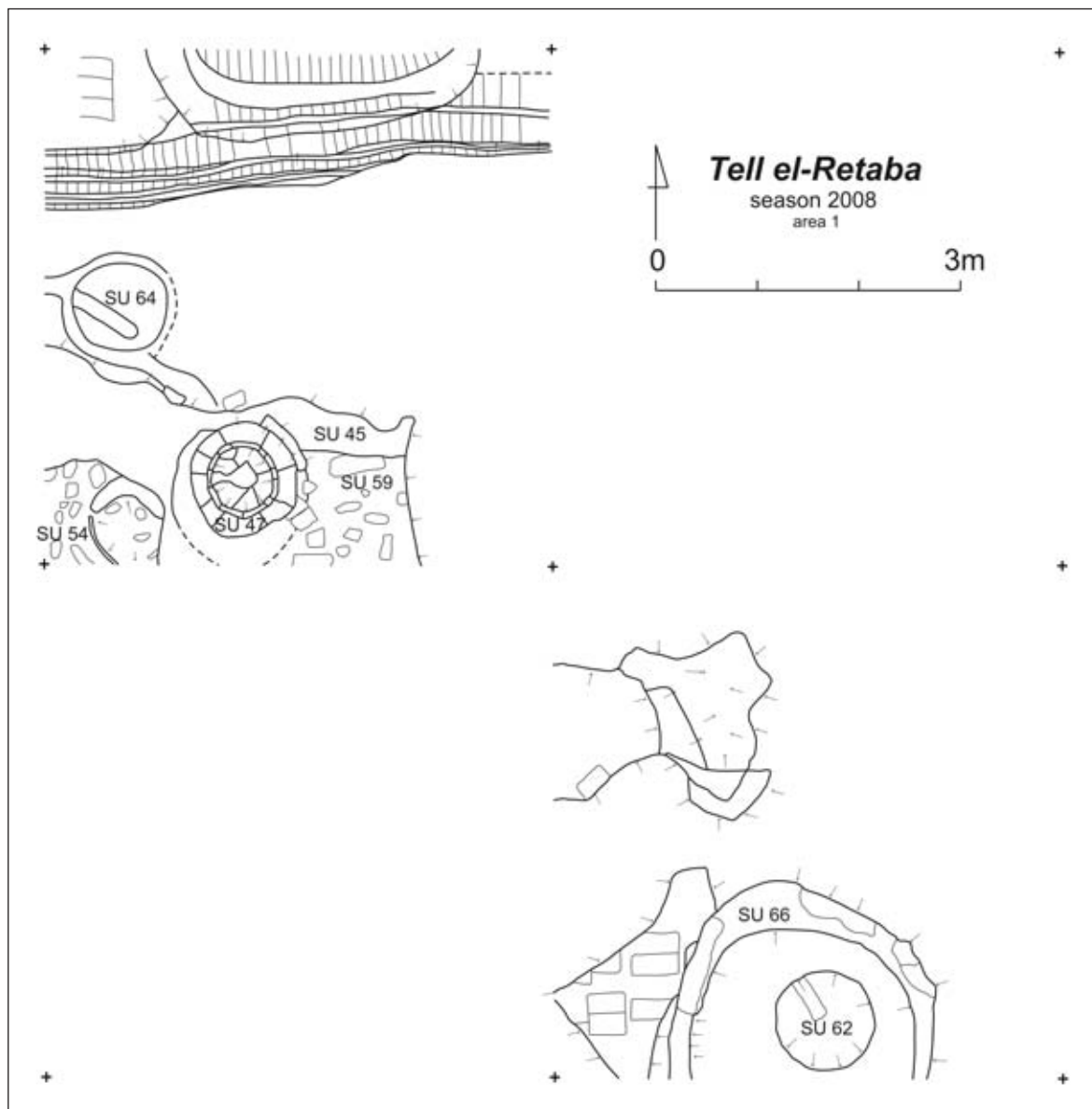


Fig. 8 Plan of Area 1 (Drawing J. Hudec, L. Jarmużek)



Fig. 9 Area 1, square Y 250/X 270, looking north. In the background, remains of the northern defence wall of the fortress (Photo J. Hudec)

made in one year are levelled up again in the next. At first sight the mound looks untouched; but a large part of it is now a honeycomb of old pits filled with sand. This makes work here unprofitable, as it is needful to dig through so much depth of running sand in which nothing can be found...²⁸

The present Polish – Slovak works has confirmed the extent of *sebbakhin* digging activities and the complications described by Petrie with regard to reaching untouched layers. It took five workers digging according to contextual excavation principles almost four weeks to remove the layers of sand mixed with mud-brick rubble and rainfall deposits. However, the unprofitability of the work is a matter of priorities. While spectacular finds were absent from the post-*sebbakhin* layers, there were objects that merited attention despite a weaker chronological attribution.

Square Y250/X270 constitutes the northwestern quadrant of Area 1. A large oval *sebbakhin* pit divided it practically into two. The ground between the pit and the northern edge of the square was filled in part by the **northern defense**

wall (Figs. 8–9). Revealed in the trench is the preserved part of the inner (southern) face of the wall (max. height 83 cm) running from south-west-west to north-east-east; it declines more or less aslant into deposits covering wall's lower edge. The lower part of the wall consists of three stretcher courses of mud bricks, followed by a course of mud bricks laid upright on the long sides. This bonding pattern is then repeated with one mud brick course of each kind (Fig. 9).

Judging by the bondwork, which is similar to that observed on the face of the northern defense wall uncovered east of Area 1, probably in excavations by Mohammad Abdel Maksour in 1998 (Fig. 10), the base of the wall has not been reached in Area 1. It can be assumed by comparison that at least one more course of mud bricks standing on the longer side edges should still be concealed in the ground in this square.

There is a layer of plaster preserved in the eastern lower corner of the defense wall. In this part, another mud-brick wall was connected almost perpendicular to the defense wall; this wall runs

²⁸ PETRIE and DUNCAN 1906, 28



Fig. 10. Northern defense wall uncovered in 1998 (Photo J. Hudec)



Fig. 11 Preserved mud brick bondwork in Petrie's Wall 3 (Photo J. Hudec)

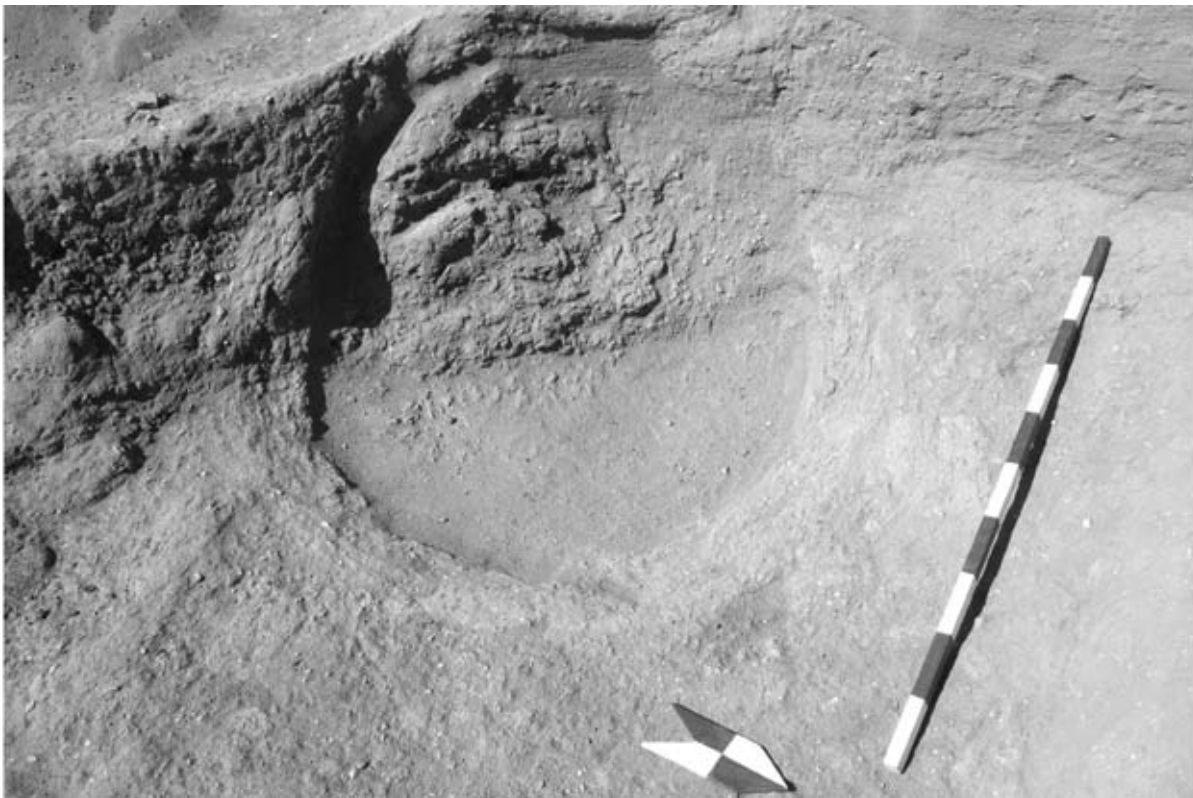


Fig. 12 Vaulted silo (Photo J. Hudec)

southward, disappearing into the eastern trench wall of the square.

The bondwork, as well as color and quality of the material used to manufacture the bricks, shows similarities with Petrie's Wall 3 (Fig. 11).²⁹

This corresponds also to the geophysical survey results (discussed below) and Petrie's observation: "...the third wall was built nearly on the same lines;³⁰ this was slightly inside the older wall at the south, upon the line and the gateway at the west, and there overlapped the old first wall".³¹ On the geophysical map the inner wall of two eastern defense walls at its northern end clearly passes into the northern defense wall. However, the double nature of the walls is less evident on the northern side; further excavations should ascertain the situation (superposition of walls?) and internal structure of the defense wall(s) in this part of the site.

None of the dating ceramic material from square Y250/X270 could be connected reliably

with the defense wall. The deposits from the two *sebbakhin* pits on the top of the northern wall are obviously of no use for this purpose and the wall itself has not yielded any potsherds yet.

The oval *sebbakhin* pit also removed about half of a **vaulted mud-brick silo** (Fig. 12). A similar silo had been found next to the northern defense wall, about 80 m east of square Y250/X270, by Mohammad Abdel Maksour in 1998. The present silo is smaller, its external diameter being only c. 110 cm and wall thickness about 10 cm. It stands about 0.45 m from the defense wall. The silo should be older than the nearby oven and fireplace, judging by its position and the stratigraphy of layers covering it on the southwestern side. Its relation to the defense wall could not be determined now due to time constraints and will be examined in the future. A few potsherds (SU 64) could date, according to A. Wodzińska, the filling of the silo provisionally to the late New Kingdom period.

²⁹ PETRIE and DUNCAN 1906, pl. XXXV.

³⁰ In line with Wall 2; PETRIE believed it was constructed in the times of Ramesses III; on some published items of

the foundation deposit (found under the south-eastern corner) are displayed the cartouches of *Wsr M3rt rꜥ Mry Imn* – PETRIE and DUNCAN 1906, pl. XXXIV, XXXV C.

In the southern third of square Y250/X270, two partly preserved structures were noted in the southwestern corner despite serious disturbance by another three *sebbakhin* pits. This was a furnace (Fig. 13) and a fireplace.

The **furnace** is about 2.30 m south of the defense wall. It stands on a layer of mud-brick rubble. The mud bricks of irregular size and shape may have come from an older silo(s), but the furnace itself seems to have been built to order without reusing any earlier structures. It is constructed of massive, almost cubic mud bricks, lined on the inside with thin mud bricks and thickly coated with plaster on the outside; thus, the maximum diameter of the oven is c. 1.30 m and wall thickness is about 35 cm. Due to a disturbed archaeological context, the function of this feature – whether a furnace for firing pottery or an oven for baking bread or something else entirely – remains for now a matter for speculation.

The structure was later reused as a fireplace. Deposits inside it consisted of ashes with pieces of ostrich eggshells mixed in together with tiny fragments of bronze, bones and ceramics. A low break-wall of piled mud-brick rubble stood to the north and northeast. Two vertical hollows, left by wooden poles or plant roots (?), were discovered

under these bricks (SU 21). The pottery deposited under and beyond (north of) this break wall has been dated provisionally to the late New Kingdom (SU 45).

A **fireplace** made of mud-brick rubble adjoined the oven on the southwest. It was shielded from the southwest by a large potsherd. It formed an irregular feature, c. 60 × 64 cm, and was filled especially with ash deposits. The functional relationship, if any, between the oven and fireplace needs to be further examined.

Square Y255/X265 covers the southeastern quadrant of Area 1. Here, too, *sebbakhin* digging has removed most of the upper strata. Four large pits were recorded, the largest in the north-central part, flanked by other pits on the west, south and east of the square.

A small section in the southwestern corner of the square appeared relatively untouched. Some mud-brick structures were found here. About 10 cm below the ground surface there was a **mud-brick platform** made of one layer of bricks of a different color and size. In the southwestern corner of the platform/square, the edge of a recent excavation pit with a virtually vertical side was traced; this cut was filled with fine, light yellow sand.

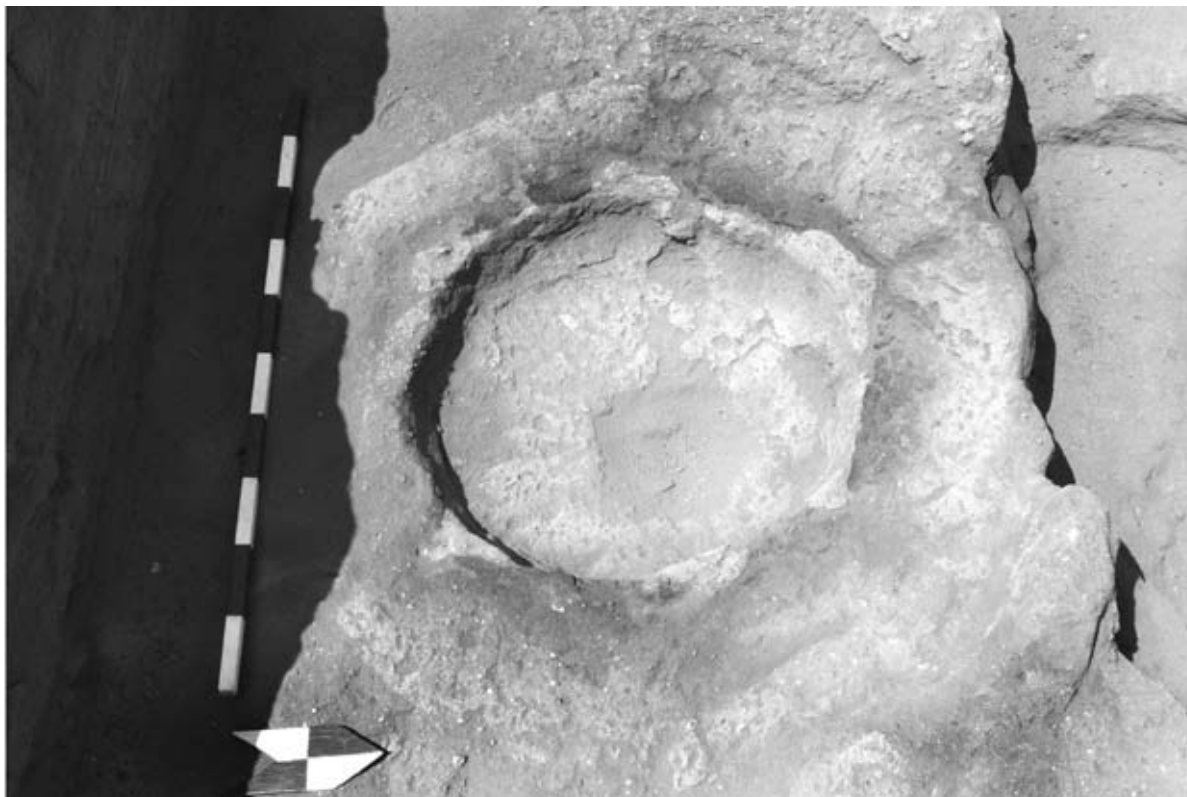


Fig. 13 Mud brick furnace (Photo J. Hudec)



Fig. 14 Silo (Photo J. Hudec)



Fig. 15 Detail of preserved wall of silo

Running roughly north-south under the eastern edge of the platform was a **mud-brick wall** consisting of four irregular stretcher courses of bricks. The maximum length was 2.20 m, maximum height c. 0.45 m and width from c. 0.50 to 0.70 m. The brick courses were disturbed by both *sebbakhin* digging which opened the wall to further erosion and by an ashes-rich substratum below. The only original *post quem* deposits were preserved west of this wall.

East of the wall, at a depth of c. 1.10 m, another mud-brick feature was traced. Considering that the *sebbakhin* pits largely avoided it, it can be presumed that it had stood quite strong at the time. The poorly preserved remains that are now to be seen – two low walls only c. 0.30 m high erected on a foundation – can be recognized as a **mud-brick silo** (Fig. 14). This structure was of slightly irregular shape with a diameter of about 2.40 m, walls thickness c. 20 cm and a later fireplace in the centre.

The best preserved part of this feature was on the northwestern side (Fig. 15). The wall retains

three courses of mud bricks laid in stretcher bond on a wider foundation. Nothing but brick height and width could be statistically evaluated (c. 10 × 20 cm). The rest of the structure is heavily eroded with some of the bricks actually lying on the ground outside the feature's outline. The younger mud-brick structures mentioned above may have reused bricks from this silo, but it seems that they largely respected the western side which must have still been standing high at the time.

Small finds

Small finds from the excavations come mainly from the *sebbakhin* pits. Among these there is a small amulet depicting a headless figure (Fig. 16), a clay seal with four cobras (S 227), a terracotta figure (S 224)³² and faience beads of various shapes.

1) Amulet (Fig. 16)

Inventory no: S 86

Material: Egyptian faience

Dimension: length 2.15 cm; max. width 1.4 cm; thickness 0.9 cm

The stylized bluish-white amulet depicts a dwarf which could be identified as either Bes³³ or Pataikos.³⁴ The head, which could have features important from both the iconographic and the chronological point of view,³⁵ is missing. Nonetheless, amulets representing protective and/or creative dwarf-demons are quite popular in this area. Petrie found at least eight Bes amulets³⁶ and more or less the same number of Pataikos amulets.³⁷ Amulet S 86 was found in a *sebbakhin* pit (SU 15) in square Y255/X265; it bears some similarity with the headless amulet from tomb 29 (probably Pataikos, accompanied by two amulets of Bes in the same tomb context)³⁸ dated by Petrie to Dynasty 22–23.³⁹ Being not fully convinced as to the correspondence between Petrie's understanding of these dynasties and recent chronologies, we prefer to date the amulet to a more broadly defined Third Intermediate Period.



Fig. 16 Dwarf amulet (Photo S. Rzepka)

³¹ PETRIE and DUNCAN 1906, 30.

³² Detailed discussion of both objects will be published in HUDEC forthc.

³³ GASSER 2001, 113–116.

³⁴ HERRMANN 2002, 27.

³⁵ HERRMANN 2002, 19.

³⁶ PETRIE and DUNCAN 1906, pls. XXXIV (tomb 29) and XXXIVC.

³⁷ PETRIE and DUNCAN 1906, pl. XXXIV (tombs 4, 29), pl. XXXIVA (tombs 18, 24), pl. XXXIVB (tombs 9?, 17, 31?).

³⁸ PETRIE and DUNCAN 1906, pl. XXXIV.

³⁹ PETRIE and DUNCAN 1906, 32.

2) *Sling stones* (Fig. 17, Table 1)

Altogether 19 round-shaped stones were found in the two seasons of excavations at the site (see above). In 2007, three of the stones (S3, S27 and S37) were located by the survey alongside the northwestern (NW)⁴⁰ and north-central (NC) inner part of the defense wall; S46 was found more to the south, alongside the pipeline trench and S33 was recorded in the northern area, outside the defense walls. In 2008, nine stones were discovered in Area 1 and five in Area 2. They contexts were both late New Kingdom and Third Intermediate Period, but mainly from *sebbakhin* pits (SU 17, 23 in Area 1). Some of these are like the pounding stones published by Petrie.⁴¹ Their function as sling loads should, however, be taken into consideration considering the site's position on an insecure land route between Egypt and Syro-Palestine. The sling was known in Egypt despite the fact that its ancient name still escapes researchers.⁴² Thus, it is quite possible that sling stones made of hard quartzite, flint and ore, weighing from 125 g to more than 300 g, were in



Fig. 17 Sling stone (Photo S. Rzepka)

use at a military installation like Tell el-Retaba.⁴³ The material of which they are made comes from distant sources. Further excavations might indi-

No.	Area	Square	Feature	Material	Weight/g	Notice	Dimensions/mm
S 3	NW	N/A	N/A	Quartzite	160	complete	56×51×44
S 27	NC	N/A	N/A	Quartzite	145	damaged	68×60×28
S 33	out/walls	N/A	N/A	Quartzite	305	complete	75×60×50
S 37	NW	N/A	N/A	Quartzite	135	complete	48×52×52
S 46	NC	N/A	N/A	Quartzite	280	complete	67×59×50
S 117	2	Y110,X235	137	Quartz?	120	part	50×49×34
S 127	1	Y250,X270	23	Quartzite	200	complete	53×53×47
S 128	1	Y250,X270	23	Quartzite	125	complete	43×44×45
S 132	2	Y110,X235	168	Quartzite	210	complete	55×55×45
S 133	1	Y250,X270	29	Quartzite	100	part	47×47×40
S 136	1	Y255,X265	17	Quartzite?	180	complete	48×48×50
S 158	1	Y255,X265	17	Quartzite	150	complete	52×42×43
S 159	1	Y255,X265	17	Quartzite	180	complete	48×47×45
S 164	1	Y255,X265	30	Flint	150	damaged	46×46×44
S 165	2	Y115,X240	165	Limestone	350	complete	61×59×59
S 167	1	Y255,X265	17	Flint	160	complete	50×49×46
S 168	1	Y255,X265	17	Magnetite?	250	damaged	51×41×39
S 170	2	Y115,X240	200	Flint	150	complete	51×49×47
S 171	2	Y115,X240	200	Quartzite	210	complete	67×54×41

Table 1

⁴⁰ Between Area 1 and Area 2.

⁴¹ PETRIE and DUNCAN 1906, pl. XXXVIC, nos. 37, 39.

⁴² Schleuder, *LÄ V*, 1984, 656; BONNET 1926, 115–117.

⁴³ Another object of the *militaria* class originating from Tell el-Retaba is a sickle-sword (*khepesh*; British Museum EA 27490, cf. GRIFFITH 1890, 57, pl. XIX).

cate whether their concentration in some area(s) of the site reflects storage or more dramatic events, like an attack on the defense walls.

Conclusions

The present excavations have proved Petrie wrong in his assertions regarding Tell el-Retaba that “the soil itself also is poor in objects in the untouched parts. The mound is not an accumulation of house ruins, as such mounds usually are; but large parts of it only contain a few enclosing walls, and the area seems to have been largely left open, and then gradually filled up with ashes and blown dust”.⁴⁴ Features and buildings uncovered in the Polish-Slovak excavations, combined with the results of previous fieldwork on the site, have indicated that at least the areas beside and along the northern defense wall were not left open. Area 1 appears to have been used for storage purposes (silos) and later on probably also for craft workshops.

The finds from Area 1 date mainly to the late New Kingdom and the Third Intermediate Period. However, the deposits of the Third Intermediate Period were mostly removed by *sebbakhins*. The late New Kingdom deposits indicate several phases of settlement, especially in the square Y250/X270.

Further excavations should verify relations between these late New Kingdom deposits and the (post-Ramesses III?) northern defense wall; a precise stratigraphy could be helpful for specifying the occupation phases of the late New Kingdom period.

AREA 2

By Sławomir Rzepka

Structures

Three squares 5 × 5 m were partly excavated. In all three squares, mud-brick walls were found, some preserved to a height of more than 1 m (see Figs. 18–20).

They seem to belong to a single, apparently phased building. The stratigraphical relations of particular features will become clearer once the excavations have been completed.

Phase I

Room 4 (see plan in Fig. 20), the largest one, had a vaulted roof (some remains of which can still be

seen in the north wall). It was entered originally from the west. An obscure, step-like structure was attached to the outer face of the wall to the north of the entrance.

Phase II

Rooms 1 and 2 were added to the west of room 4. The step-like structure was partly covered by a wall separating these two rooms. The entrance to room 4 appears to have been blocked at this time. A set of loom weights was found on the floor of room 1.

Room 3, which has a slightly different orientation than the rest of the building, may have also been added in this phase. Most of the floor of this room was destroyed by a deep *sebbakhin* pit, but a fragment along the east wall was preserved. After prolonged use – the accumulated sequence of occupational levels is c. 10 cm thick – the floor was paved with bricks. Soon afterwards it seems to have been abandoned and turned into a place for dumping ashes. All structures northeast of room 3 were destroyed by a very large pit filled with clean drifted sand. This was interpreted first as another *sebbakhin* pit, but its large diameter (apparently at least 5 m) and depth (c. 3 m), not to mention the almost vertical walls, suggest that it is one of Naville’s test trenches. A circular trench marked by Naville on his plan⁴⁵ is located approximately in the area of our excavations. Naville also mentioned that his trenches were up to 30 feet deep.

Phase III

Once the vault of room 4 had collapsed, the building was abandoned and used as a dumping place. A thin wall running N-S was erected on top of the ruins of room 4, creating a narrow unit 4a (the northern end of this wall has not been preserved).

Phase IV

Unit 4a was finally abandoned and filled with ashes.

The pottery evidence from the house established the date of the structure with all its phases in the 21st through 22nd Dynasty (cf. section 3.2. on the ceramics).

The domestic function of the excavated building is beyond doubt, considering the discovery of loom weights (see below, Figs. 26, 27) and frag-

⁴⁴ PETRIE and DUNCAN 1906, 28.

⁴⁵ NAVILLE 1887, pl. 11.



Fig. 18 General view of area 2, looking south (Photo S. Rzepka)



Fig. 19 Excavated part of the Third Intermediate Period house.
Rooms 1 and 2 are visible in front, room 4 in the background (Photo S. Rzepka)

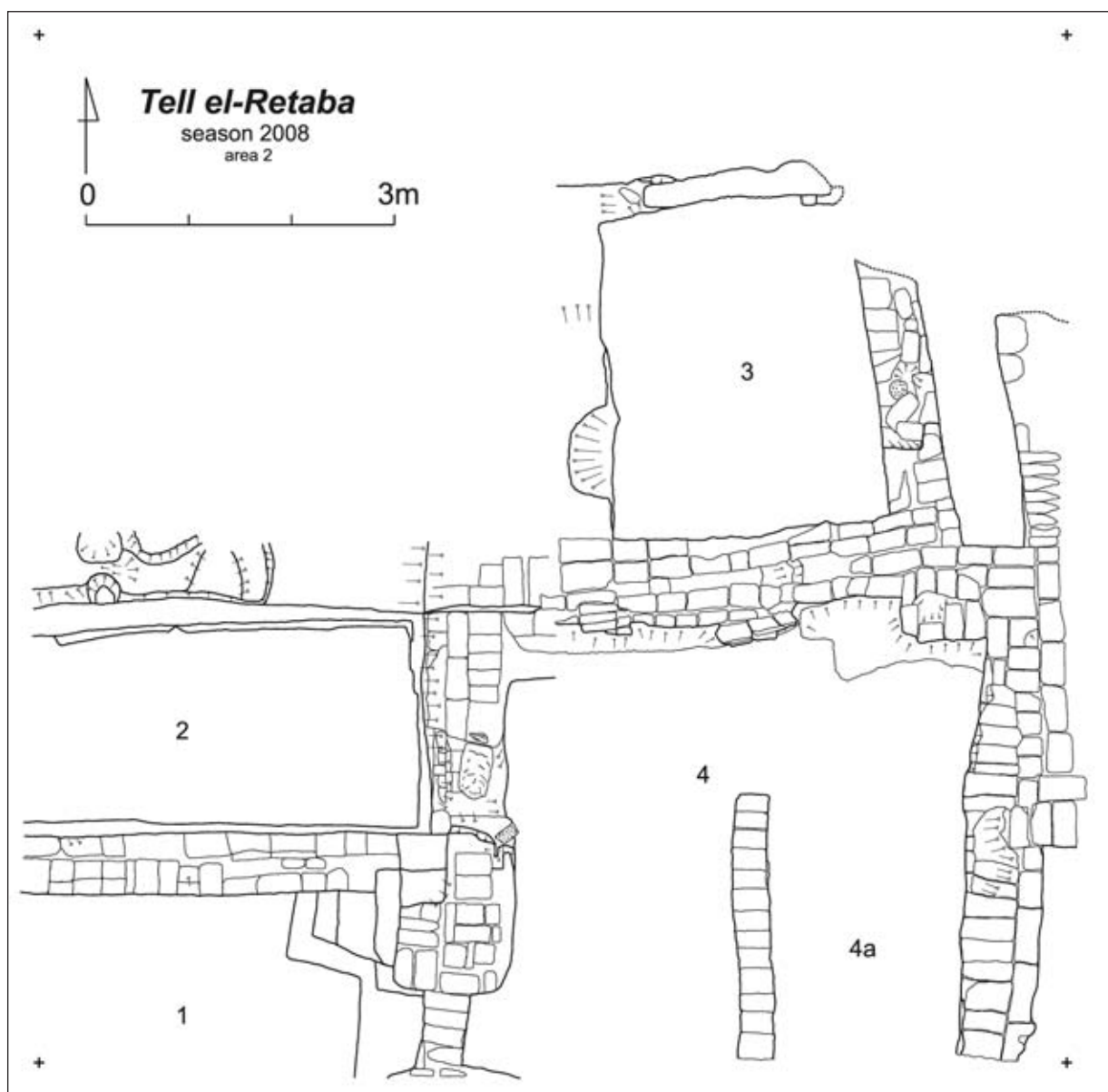


Fig. 20 Plan of the Third Intermediate Period house (Drawing Ł. Jarmużek)

mentary bone spatulas (see below, Fig. 25), which could have also been used for weaving or netting. Fishbones and mussels were frequent in the occupational layers, unlike mammal bones which occurred only sporadically. Fish thus seems to have been a diet staple of the dwellers of this house. There could have been fishermen among them – a small, bent piece of lead can be interpreted as a netsinker (see below, Fig. 28). Papyrus Anastasi VI informs of “pools” or “ponds” located in the vicinity of Tell el-Retaba; Shasu Bedouins were said to water their flocks there.⁴⁶ The

dwellers of the settlement in Tell el-Retaba could have caught their fish there.

Once abandoned the ruins of the buildings served as a dump for large amounts of ash. Most of the interesting small finds came from these ash deposits.

Small finds

The small finds presented below – a small part of the collection consisting of almost 200 objects from Area 2 – have been selected with the objective of illustrating the occupations and customs of

⁴⁶ Pap. Anastasi VI, 51–61, GARDINER 1937, 76 f. For a discussion of this passage, see GOEDICKE 1987, 83–98.



Fig. 21 Faience cartouche-plaque, inv. no. S59 (Photo S. Rzepka, drawing S. Gromadzka, L. Jarmużek) Scale 2:1

the dwellers of the house (or the immediate neighborhood as some of the objects come from layers deposited already when the building had been abandoned and was being used as a dumping ground).

1) *Cartouche plaque* (Fig. 21)

Inventory no.: S59

Material: green-glazed faience

Dimensions: length 2.9 cm, width 1.5 cm, thickness 0.3 cm

Molded plaque, decorated on one side with a hieroglyphic inscription reading *Wsr-m3^ct-r^c stp-n-r^c* inside a cartouche ring.

The plaque is damaged; originally there must have been two feathers at the top of the cartouche.

Wsr-m3^ct-r^c stp-n-r^c is the throne name of Ramesses II. However, the plaque was found in a layer which can be dated by the pottery to the Third Intermediate Period. If it is indeed the cartouche of Ramesses II, the plaque must have been in use as an amulet for several generations. Since such cartouche-plaques are also found in foundation deposits,⁴⁷ it is possible that the plaque was part of a foundation deposit from a royal Rameside building destroyed during the Third Intermediate Period. The other possibility is that the

cartouche contains the name of a ruler from the Third Intermediate Period. Three kings of the 22nd Dynasty: Osorkon II,⁴⁸ Sheshonq III⁴⁹ and Pemu,⁵⁰ used *Wsr-m3^ct-r^c stp-n-r^c* as their throne name, apparently following in this the example set by Ramesses II. Considering the chronological context in which the plaque was found, this interpretation seems to be the most plausible.

2) *Iron blade*⁵¹ (Fig. 22)

Inventory no.: S62

Material: iron

Dimensions: length 11.2 cm, width 2.1 cm, thickness 0.6 cm

Leaf-shaped blade, flat, without mid-rib; tang oval in section.

The tip of the blade and part of the tang are broken off.

Found in a stratum dated to the 22nd Dynasty.

In the beginning of the 1st millennium BC iron was still very rare in Egypt. Single objects, usually of meteoritic iron, are known from much earlier periods, the most famous being the dagger of Tutankhamun.⁵² Very few objects date from a time closer to the Tell el-Retaba blade, among these an iron spearhead from Tell Nebesheh in the Delta. The spearhead comes from a grave context which has been attributed to a foreigner, a Cypriot mer-

⁴⁷ E.g. foundation deposit from Tell el-Retaba containing cartouche-plaques of Ramesses III, cf. PETRIE and DUNCAN 1906, pl. XXXVIB: 53–55.

⁴⁸ BECKERATH 1999, 186–187.

⁴⁹ BECKERATH 1999, 188–189.

⁵⁰ BECKERATH 1999, 190–191.

⁵¹ For a detailed discussion of the find, see RZEPKA in prep.

⁵² For a review of such early iron items, cf. WALDBAUM 1978, 22, 36.

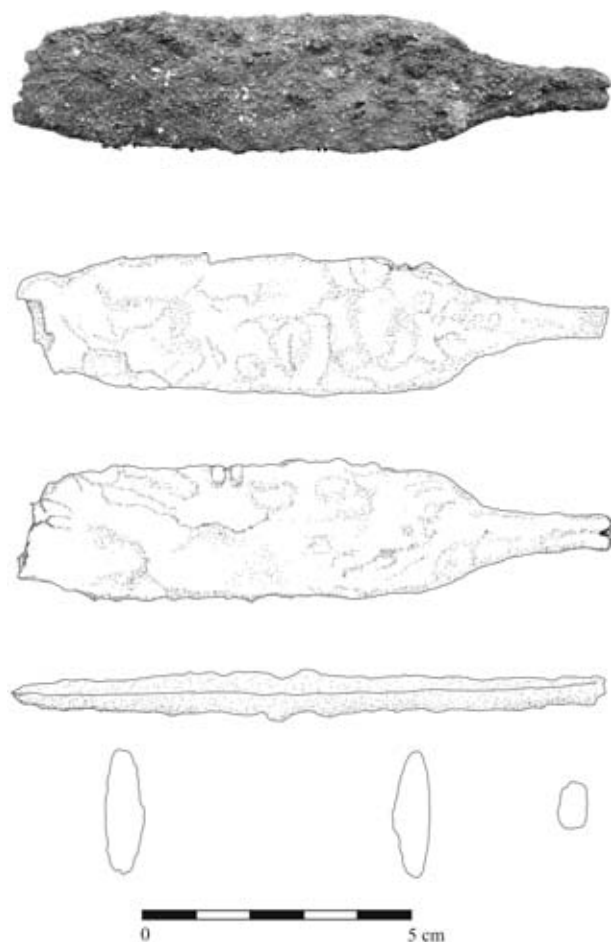


Fig. 22 Iron blade, inv. no. S62
(Photo S. Rzepka, drawing L. Jarmużek)

cenary from the time of the 26th Dynasty (7th century BC) according to Petrie,⁵³ but more likely a Philistine from the 11th/10th century BC.⁵⁴ Another example from this period is an iron sword of the Naue II type, found in the tomb of Psusennes I in Tanis.⁵⁵ In the former case, the weapon would have been brought by its owner from his homeland, in the latter it was a prized possession imported from abroad. It should be noted in this context that iron smelting is first evidenced in Egypt at the Greek colony in Naukratis, where it is dated with some reserve to the 6th century BC. Iron did not start to

play a dominant role in the production of tools, weapons and objects of daily use until the reign of the Ptolemies. Thus there can be no doubt that the blade from Tell el-Retaba was imported. The shape is not very distinctive however and similar blades have been found in Mycenae, for example,⁵⁶ but it would surely be too farfetched to suggest such an origin for our blade. Especially in view of the fact that similar objects have been found in a much less distant area, namely, in Israel. In Emery's typological study of weapons of the Israelite monarchy,⁵⁷ our blade falls into the "light spearhead" category, that is, a weapon part used either for thrusting or throwing (contrary to the "heavy spearhead" which was used only for thrusting). Less probably, it was a very large arrowhead and even less probably, a double-edged knife. Similar spearheads were found in Tell Far'ah South,⁵⁸ Ashdod,⁵⁹ Lachish,⁶⁰ Megiddo⁶¹ and Tell Sa'idiyeh.⁶² Consequently, it seems probable that our iron spearhead was produced in Palestine. The question remains how it came to Egypt and there are several possibilities to be taken into account. The least probable is the assumption that the spearhead was left by invaders from the East, who had attacked the city. So far no traces of violent destruction in the Third Intermediate Period have been found within the limits of the excavated area. It is tempting to interpret this find as a spoil from a victorious raid into Israel organized by Sheshonq I, but this will have to remain speculation. Equally well the spearhead could have been simply acquired through regular trade.

3) Scarab⁶³ (Fig. 23)

Inventory no.: S61

Material: white steatite, no traces of glazing

Dimensions: length 1.8 cm, width 1.3 cm, thickness 0.8 cm

The back of the scarab is decorated with double girdle lines; three vertical lines are incised on the elytra; vertical lines are also incised on the head and the clypeus; the legs are not marked. The body is pierced along the axis.

⁵³ PETRIE 1888, 21, pl. 3, cf. also WALDBAUM 1978, 36.

⁵⁴ DOTHAN 1957, 151–164, cf. also WALDBAUM 1978, 36.

⁵⁵ WALDBAUM 1978, 36.

⁵⁶ PETRIE 1917, 33, pl. XXXIX [142].

⁵⁷ EMERY 1999.

⁵⁸ 10th century BC; PETRIE 1930, pl. 50.598.

⁵⁹ 10th–8th century BC; DOTHAN and PORATH 1982, pl. 15.12.

⁶⁰ 8th century BC; TUFNELL 1953, pl. 39–4

⁶¹ 8th–7th century BC; LAMON and SHIPTON 1939, pls. 80.24, 80.32.

⁶² 8th–7th century BC; PRICHARD 1985, fig. 172.5.

⁶³ For a discussion of this scarab, especially its decoration, see GROMADZKA and RZEPKA in prep.



Fig. 23 Scarab, inv. no. S61
(Photo S. Rzepka) Scale 2:1

The base of the scarab is decorated with an incised image of a king kneeling on one knee. A uraeus is marked clearly on his forehead. His arms are bent at the elbows and his hands, both holding flails, are placed on the chest. The object on the king's left resembles a cobra. A single line acts as a frame around the representation. The execution is quite schematic, no details of the king's dress or headdress are shown, so it is only to be presumed that he is wearing the blue crown or (even more likely) the so-called "Ramesside cap" on his head.

The scarab, which is complete, was found in a stratum dated to the 21st–22nd Dynasty. The modeling of the scarab suggests a much earlier date, in the 19th–20th Dynasty,⁶⁴ and the nearest parallels to the decoration on the base come from the Ramesside period.⁶⁵ The decoration has one rather unusual feature: the two flails held by the king instead of the regular crook and flail. This is extremely rare in royal representations on scarab bases,⁶⁶ as well as in royal iconography in general. In the rare instances when a king is shown in this

way, he is identified with Osiris.⁶⁷ As Osirian motifs are extremely rare on scarabs,⁶⁸ these parallels should not be cited in explanation of the meaning of the two flails on the scarab from Retaba. The only royal representation with two flails and without Osirian connotations is a statue of Amenophis III found in the temple of Month in Karnak.⁶⁹ It shows the king in a heb-sed mantle, kneeling in front of Amun-Ra. The meaning of the unusual iconography on our scarab (whatever it was⁷⁰) needs not to parallel that of the statue of Amenophis III, but two flails are evidently an artist's mistake.⁷¹

4) Terracotta figurine (Fig. 24)

Inventory no.: S138

Material: pottery

Dimension: height 4.5 cm

The figurine is made of Nile silt, modeled by hand. It was fired, quite carelessly, in an oxidizing atmosphere; the upper part is light red, the lower one gray (possibly the figurine was fired together with pottery vessels, having been put inside one of them). The features of the face are reduced to a beak nose. Modeling of the body is very schematic: hands, waist, hips and buttocks are not marked. The most distinctive feature is just one conical breast, the left, the other one having never existed. The legs are separated by a vertical groove and the toes are rudimentarily marked with short engraved lines. The feet are very small and the figurine could not stand unsupported. The pubic hairs are marked by incised dots arranged in a circle. All these details were made with a sharply pointed tool. No traces of paint are visible.

This complete figurine was found in a stratum, which is dated provisionally by the pottery evidence to the 22nd Dynasty.

⁶⁴ ROWE 1936, pls. XXXII–XXXIII; cf. also WIESE 1990, 92.

⁶⁵ NEWBERRY 1907, 119, pl. VII (CG 36472); 290, pl. x (CG 37158). Cf. also KEEL *et al.* 1985, 340, Abb. 6–8.

⁶⁶ Only three comparable examples are known to the authors. Wiese lists five scarabs with images of the king with two flails (WIESE 1990, 21 n. 47), but at least two should be excluded from this group. In one case, the king has unnaturally long arms which Wiese took for flails, in the second the king holds a flail and an object similar in shape to a flail, but ending in a ball. Both were found in Meroe, cf. DUNHAM 1963, 52, fig. 37a/58; 315, fig. 182/13.

⁶⁷ As in the painting with the scene of the "opening of the mouth" ceremony on the wall of the tomb of Tutankhamun, cf. ROBINS 2007, 326, fig. 2. Two ushebtis found in the same tomb depict the king with two flails, cf. REEVES 1990, 139.

⁶⁸ Cf. HORNUNG and STAHELIN 1976, 90–91, 98.

⁶⁹ Now in store 262 in Karnak, cf. SEIDEL 1996, 191–193.

⁷⁰ According to one theory, the flail was an emblem of birth, fitting well in the *heb-sed* context; cf. WESSETZKY 1989, 425–429, pls. I–V.

⁷¹ As supposed by Wiese in the case of the above-mentioned scarabs: WIESE 1990, 21 n. 47.



Fig. 24 Terracotta figurine, inv. no. S138 (Photo S. Rzepka, drawing Ł. Jarmużek)

Small figurines showing nude females are usually called “fertility figurines”.⁷² Although found not only in houses (also in burials and temples), they are supposed to “belong primarily to the sphere of magical and religious practices to promote and protect fertility in daily life. The term fertility covers the whole process from the conception of children to their successful rearing”.⁷³ This interpretation was recently modified and nuanced by E. Waraksa,⁷⁴ who emphasized the magical function of the figurines rather than their link with fertility (preferring also “female figurines” as a more neutral designation). The figurines should have played some role in magic healing rituals and they are mentioned in this role in magical papyri. This interpretation is especially tempting in the case of our figurine because of the missing right breast. Perhaps it was used during some kind of healing ritual for a disease which affected a woman’s breast. It was surely made specifically for whatever occasion it was used for, out of a cheap material and quite hastily, with little effort in terms of esthetic or artistic effect. It was apparently also quickly discarded – the figurine shows no trace of prolonged use.⁷⁵

⁷² This designation was used by G. PINCH in her comprehensive study on the subject: PINCH 1993.

⁷³ PINCH 1993, 225.

⁷⁴ WARAKSA 2008; WARAKSA 2007 (only a fragment of this dissertation was available to the authors).

⁷⁵ For a more detailed interpretation of this figurine, see JARMUŻEK and RZEPKA in print.

5) Bone spatulas (Fig. 25)

Inventory nos: S97, S98, S178

Material: bone

Dimensions:

S97: length 5.1 cm, width 2.6 cm, thickness 0.5 cm

S98: length 12.8 cm, width 2.7 cm, thickness 0.3 cm

S178: length 2.7 cm, width 1.3 cm, thickness 0.3 cm

Only S98 is relatively well preserved and its shape can be described in more detail. It is a relatively long and narrow “blade”, pointed at one end (the other end is broken off). This implement was apparently made of a rib, of which one surface and the bone matrix was removed. The remaining part was naturally smooth on one side and porous on the other. The porous side was smoothed, but the textural remains of the bone matrix are still visible. The “blade” is not flat, but naturally curved like the rib it was made of.

Spatulas of this kind are known from various periods (from the Neolithic through Roman times) and from various regions in the Mediterranean.⁷⁶ They were well known in Egypt during the New Kingdom.⁷⁷ Their function remains controversial and it is also doubtful that they were always used for the same purpose in all the periods and place where they have been found. Vari-

⁷⁶ For a useful overview of this subject, see ARIEL *et al.* 1990, 127–134.

⁷⁷ “Bone knife” from Amarna now in the Liverpool Museum, 56.21.911, cf. <http://www.globalegyptianmuseum.org/record.aspx?id=4072>; Petrie found such objects (which he called “netters”) in Gurob and commented that “such netters abound in sites of the 18th and 19th dynasty”, cf. PETRIE 1917, 53.



Fig. 25 Bone spatula, inv. no. S98 (Photo S. Rzepka)

ous authors have interpreted them as knives for cutting, forks for eating, tools for grinding drugs to powder, for hairdressing, incising designs on pottery before firing, leatherwork, net-making and weaving, and as styli for writing.⁷⁸ The latter is surely not true of spatulas found in Egypt; other interpretations are more or less probable, but can be neither proved nor disproved. Interestingly, the spatulas from Tell el-Retaba were found in a house where weaving and netting have been evidenced (see below for loom weights and lead net-sinker).

6) *Limestone loom weights* (Fig. 26)

Inventory nos: S111, S112, S113, S115, S116

Material: limestone

Dimensions:

S111: length 7 cm, width 5.5 cm, thickness 5.2 cm

S112: length 6.4 cm, width 4.8 cm, thickness 3.2 cm

S113: length 7.5 cm, width 6 cm, thickness 3.9 cm

S115: length 6.6 cm, width 5 cm, thickness 2.9 cm

S116: length 8.5 cm, width 5 cm, thickness 3.2 cm

All the weights have an ovoid, elongated, slightly flattened shape. A small incised groove for fixing a thread runs around the circumference on the long axis.

All the weights were found on the floor of room no. 1. They are quite uniform in size and

shape, and clearly form part of a set used on a loom. Single loom weights, similar in material and shape, were also found in other contexts (S163, S166, S199).⁷⁹

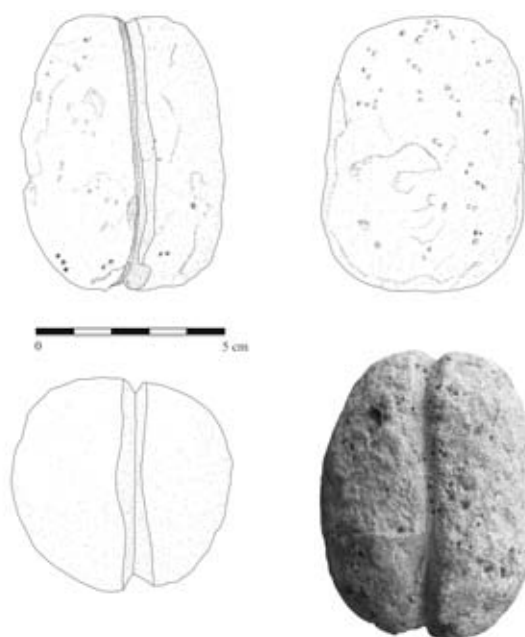


Fig. 26 Limestone loom weight, inv. no. S111 (Photo S. Rzepka, drawing S. Gromadzka, Ł. Jarmużek) Scale 1:2

⁷⁸ For a list of theories with bibliographical references, see ARIEL *et al.* 1990, 129.

⁷⁹ PETRIE discovered loom weights of this type in Tell el-Retaba, cf. PETRIE and DUNCAN 1906, pl. XXXVIC, 44, 45, 46.



Fig. 27 Clay loom weight, inv. no. S114 (Photo S. Rzepka, drawing S. Gromadzka, Ł. Jarmużek) Scale 1:2

7) *Clay loom weight* (Fig. 27)

Inventory no.: S114

Material: clay

Dimensions: S114: length 9.7 cm, width 7.7 cm, thickness 3.4 cm

Thick, roughly round disc, with a hole c. 1 cm in diameter pierced in the middle.

Found together with the above-described limestone loom weights. It was probably used for the same purpose.

This set of loom weights shows that room 1, at least in the late phase of the excavated building, was used as a workshop.

8) *Net-sinker* (Fig. 28)

Inventory no.: S141

Material: lead

Dimensions: length 1.6 cm, width 1.4 cm, thickness 0.9 cm



Fig. 28 Lead net-sinker, inv. no. S141 (Photo S. Rzepka, drawing S. Gromadzka, Ł. Jarmużek)

A strip of lead sheet folded in two. Heavily corroded. It may have been attached to a fishing net and used as a sinker. Petrie found similar objects in Tell el-Retaba, identifying them as net-sinkers,⁸⁰ but giving no details of the context and making no attempt to date them.

Also worth mentioning are faience amulets in the form of Bes (S120) and a seated goddess (S60⁸¹), a large number of faience beads, a fragment of a scaraboid (S123), fragments of faience rings (S63, S139) and numerous pieces of worked stone.

3.2. CERAMIC MATERIAL

By Anna Wodzińska

Introduction⁸²

The archaeological site at Tell el-Retaba comprises remains of a settlement and a cemetery. This ancient kom located in Wadi Tumilat has been excavated and surveyed repeatedly, by Petrie, Goedicke, Holladay, and the Egyptian Supreme Council of Antiquities.

According to Aston, the pottery from the settlement area excavated by Petrie⁸³ can be dated to the New Kingdom, Third Intermediate Period, Late Period, and Ptolemaic Period, that from the cemetery to the Third Intermediate Period.⁸⁴

⁸⁰ PETRIE and DUNCAN 1906, 33, pl. XXXVB

⁸¹ As only the lower part of the amulet is preserved, identification of the goddess is not possible.

⁸² I would like to thank Daniel Jones and Iwona Zych for correcting the English text.

⁸³ PETRIE and DUNCAN 1906.

⁸⁴ ASTON 1996, 27–28.

Some of the pottery from excavations by Hans Goedicke in 1977, 1978 and 1981, illustrated on Michael Fuller's website⁸⁵ can be dated mainly to the Third Intermediate Period. Vessels from the cemetery located to the north of the main kom seem to be earlier (late New Kingdom).

Ceramics collected from the surface during a survey conducted in Wadi Tumilat by the Wadi Tumilat Project directed by John S. Holladay Jr were later described by Carol Redmount.⁸⁶ She concluded that some of the early pottery material from Tell el-Retaba could be dated to the Second Intermediate Period.⁸⁷

Tell el-Retaba was later excavated by the Supreme Council of Antiquities (SCA) and the material was described in the SCA field reports.⁸⁸ Selected ceramic vessels coming from the investigated areas of the settlement and cemetery were dated to the late New Kingdom – beginning of the Third Intermediate Period. One of the jars seems to be later, probably from the late Persian – beginning of the Ptolemaic periods.

The ceramic material from Tell el-Retaba under discussion in this paper was assembled during the 2008 season of work conducted by the Tell el-Retaba Archaeological Mission. The first season (2007) was devoted mostly to a ceramic survey.⁸⁹ Over 600 sherds, generally diagnostic pieces, were collected from the surface of the kom. This pottery assemblage can be broken down according to the following chronological divisions: late New Kingdom, Third Intermediate Period, Late Period and Ptolemaic Period.⁹⁰ Most of the material can be dated to the Third Intermediate Period and Late Period. Unfortunately, the pottery distribution across the site does not reflect original site organization since the kom in Tell el-Retaba has suffered a lot from destruction in modern times. Among the surface finds some imported vessels can be identified.⁹¹ They came from three general directions, Greece and the Greek islands, the Levant and Cyprus, during the Third Intermediate Period, through the Late Period to the beginning of the Ptolemaic Period.

The second season (2008) revealed a settlement generally dated to the end of the New Kingdom and beginning of the Third Intermediate Period. The stratigraphically excavated units appear not to contain contaminated pottery material. 30,386 ceramic sherds were collected during the season. All of them were first sorted into Nile and marl fabrics and secondly into non-diagnostic and diagnostic pieces. Each of the diagnostic sherds (3,783 in total) received a unique number.

The typology of the pottery found in two excavated areas (Area 1 and 2)⁹² was based on the surface finds from the 2007 survey season.⁹³ This typology was further enlarged and corrected according to the new evidence. The ceramics were made mostly of Nile alluvium with only approximately 3% of the material recognized as marl.

The pottery from the 2008 season comes generally from the 20th–21st Dynasties and maybe even the 22nd Dynasty. Some of the excavated stratigraphic units appear to be earlier, that is from the late New Kingdom – beginning of the 20th Dynasty.

Late New Kingdom

Ceramics of this period (Fig. 29) came from a few stratigraphic units (21, 29, 40, 44, 45, and 46) in Area 1. Those units seem to be not disturbed by later intrusions. They consist of a uniform set of pottery types, clearly different from those coming from the Third Intermediate Period.

All the late New Kingdom units contained plates with red coated external and internal (Fig. 29.1), or only internal surfaces (Fig. 29.2). The vessels have flaring walls and recurved rims. Similar to other pots from Tell el-Retaba they were made of a Nile B2 sandy variant. They vary in size, but 20–24cm in diameter seems to be the most common. Similar bowls dated to the late New Kingdom were also found in Memphis.⁹⁴

Small cups of the early 20th Dynasty often have red painted rims (Pl. 1a). They are made of Nile B2 variant with significant amounts of fine sand.

⁸⁵ <http://users.stlcc.edu/mfuller/Retaba.html>.

⁸⁶ REDMOUNT 1989, 124–131, fig. 54.

⁸⁷ REDMOUNT 1989, 125.

⁸⁸ Cf. the section “1. History of exploration” above.

⁸⁹ WODZIŃSKA forthc.

⁹⁰ WODZIŃSKA forthc. See also ASTON 1996, 27–28, 144–152, figs. 42a, 43–50; REDMOUNT 1989, 124–131.

⁹¹ WODZIŃSKA forthc.

⁹² For description of the excavated areas, see section “3.1. Excavations” above.

⁹³ WODZIŃSKA forthc.

⁹⁴ ASTON 2007, 30, fig. 20.8, 11, 16–17.

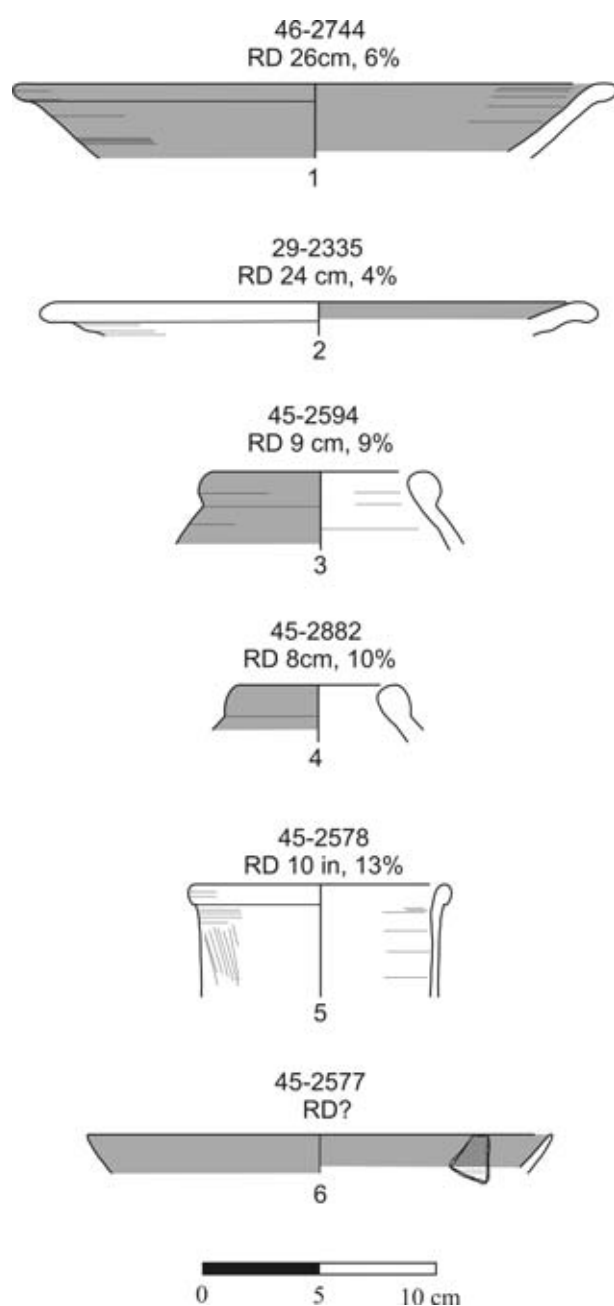


Fig. 29 Pottery from the late New Kingdom

These hemispherical cups are 10–13 up to 16cm in diameter. Similar pots were found at Elephantine⁹⁵ and Memphis.⁹⁶

Jars with rounded narrow rims were covered with red slip on the outside and smoothed (Figs. 29.3–4, Pl. 1b). They were made of Nile B2 sandy clay. Such jars can be dated to the beginning of the 20th Dynasty.⁹⁷ Some however occur later, during the reign of Ramesses XI.⁹⁸ The complete vessels have an elongated body measuring approximately 52cm in height.

A marl jar with a cylindrical neck and rounded rim (Fig. 29.5, Pl. 1d) came from unit 45. The external surface of the pot was clearly burnished with shiny vertical stripes. Rims of similar jars made of marl F found at Qantir are dated to the Ramesside period.⁹⁹

The date of the late New Kingdom units is confirmed by the occurrence of a small fragment of a blue-painted bowl (Fig. 29.6, Pl. 1c). According to Aston¹⁰⁰ the blue-painted decoration does not occur later than the time of Ramesses IV. The bowl is made of Nile B1 clay, covered with red slip and subsequently painted cream and blue inside. The vessel is characterized by its very good quality of manufacture.

Third Intermediate Period

The material from this period (Figs. 30–33) is predominantly characterized by the presence of four ceramic vessel types: bowl with flaring walls (Fig. 30.7–8), small hemispherical cup (Fig. 30.9–11), flat bread tray (Fig. 30.13), and jar with cylindrical neck and more or less upright rim (Fig. 31.15–16).

The most frequently found ceramics are bowls with flaring walls and recurved rims made of Nile B2 sandy clay (Fig. 30.7–8). They represent 23% of all of the diagnostic fragments. They were wheel-thrown and probably made of local material. Their surface was well smoothed without any coat. The vessels vary in size but the most common are those with 23–26cm in diameter. The bowls¹⁰¹ dated to the Third Intermediate Period were also very popular in different regions of Egypt, for instance Elephantine,¹⁰² Memphis¹⁰³ Qantir,¹⁰⁴ and Tanis.¹⁰⁵

⁹⁵ ASTON 1999, 34–35, pl. 6, fig. 131 dated to the late New Kingdom.

⁹⁶ ASTON 2007, 31, fig. 21:33, 41, 45, 49.

⁹⁷ ASTON 1996, 17, 110, fig. 8b.

⁹⁸ ASTON 1999, 43–33, pl. 9, fig. 198.

⁹⁹ ASTON 1998, 504–509, figs. 1991–2027.

¹⁰⁰ ASTON 1996, 79.

¹⁰¹ For bowls from Tell el-Retaba, see also REDMOUNT 1989, 363, fig. 54.27–35.

¹⁰² ASTON 1999, e.g. 50–51, pl. 11, fig. 257 from the 20th–21st dynasty, also 65, 69, pl. 15, fig. 494 – the 22nd dynasty.

¹⁰³ ASTON 2007, 34, fig. 29:153–157.

¹⁰⁴ ASTON 1998, 545, figs. 2220–2222.

¹⁰⁵ BAVAY 1998, 323–324, fig. 34.38–39.

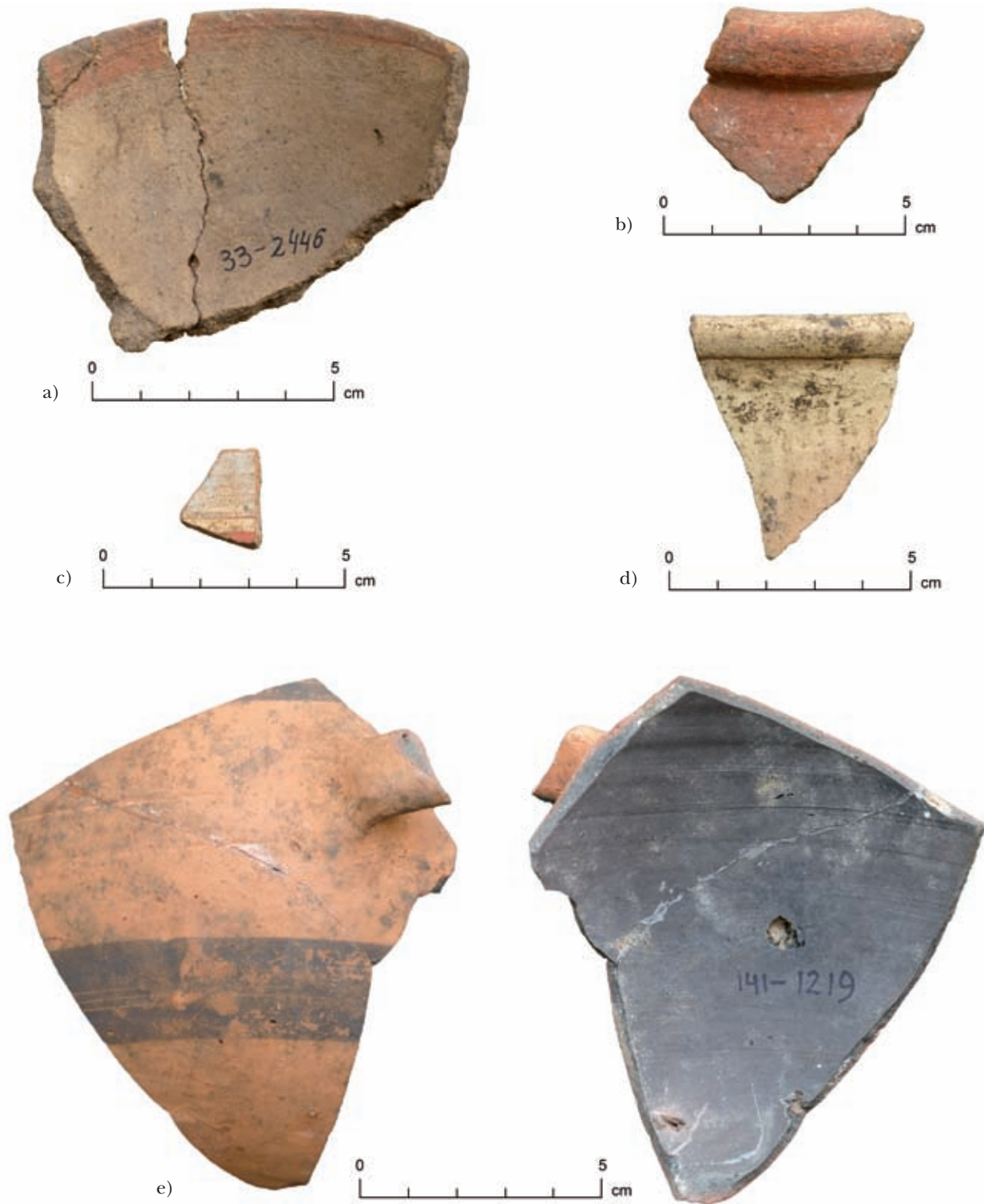


Plate 1 New Kingdom pottery
a) Bowl with red-painted rim from the late New Kingdom;
b) Red-slipped jar from the late New Kingdom;
c) Blue-painted bowl from the late New Kingdom;
d) Jar from the late New Kingdom;
e) Pilgrim flask from the Third Intermediate Period. Number: 1219

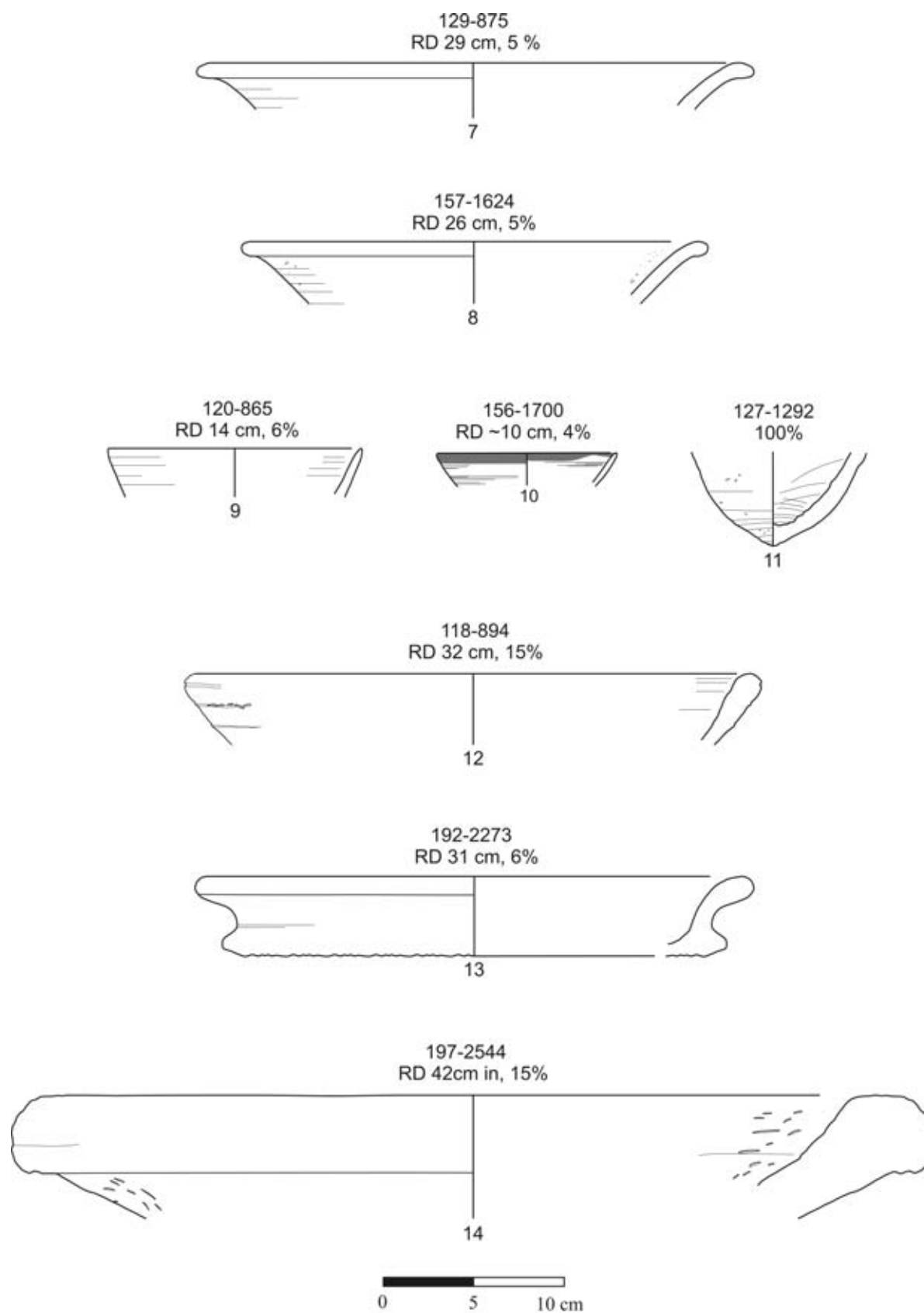


Fig. 30 Pottery from the Third Intermediate Period

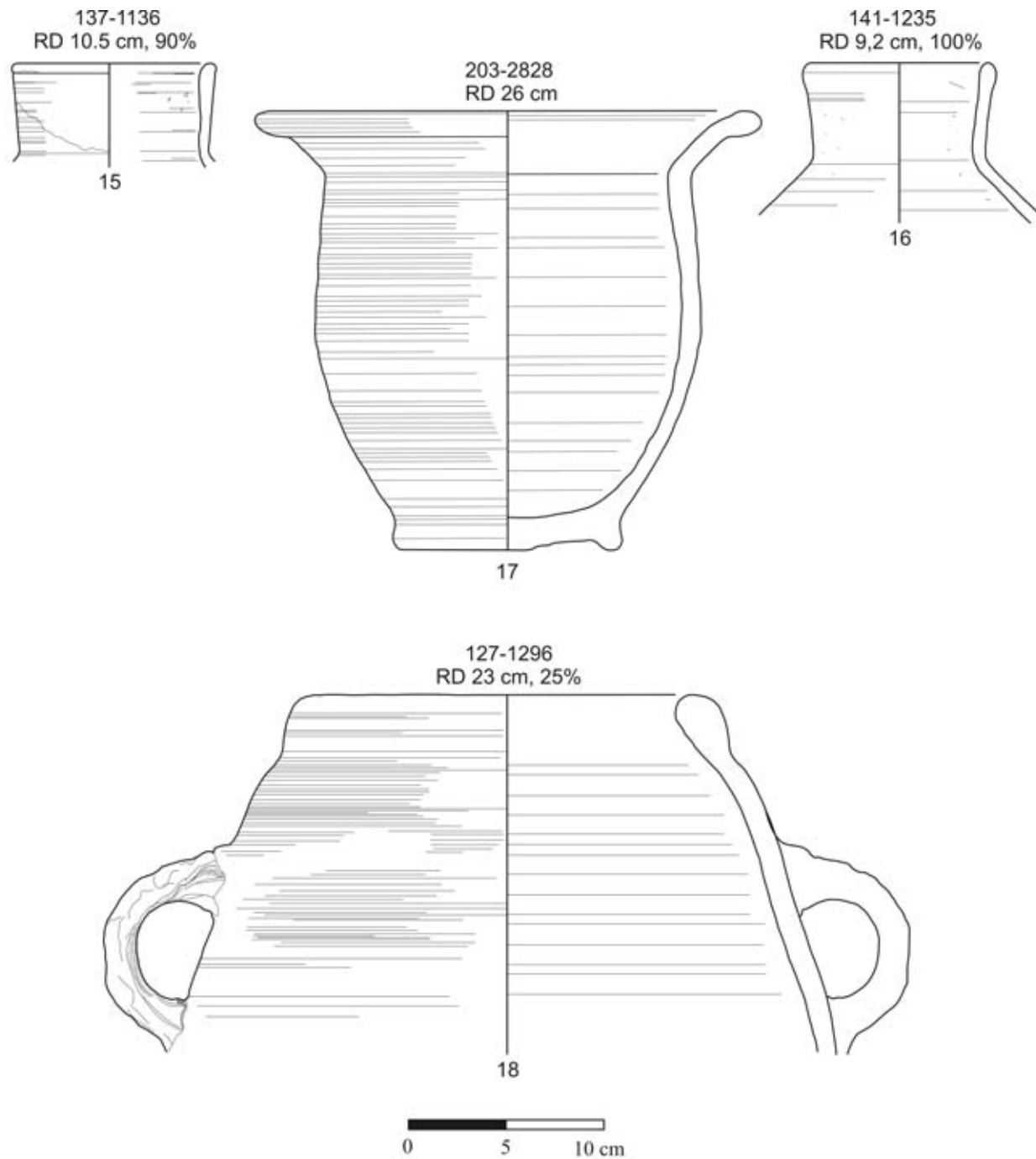


Fig. 31 Pottery from the Third Intermediate Period

The second most common vessel is a small bowl with straight sides also made of Nile B2 sandy clay (Fig. 30.9).¹⁰⁶ It usually has very thin walls and its production seems to have been very fast and not very careful. Their size, 10–14 cm in

diameter, and clay properties suggest that they were probably used as drinking cups.¹⁰⁷ This type of bowl seems to be very well known already in the late New Kingdom when its rim was usually red slipped (see above). Later the decoration gradu-

¹⁰⁶ See also REDMOUNT 1989, 361, fig. 54.1–6.

¹⁰⁷ See also ASTON 2007, 33, fig. 28:137–145.

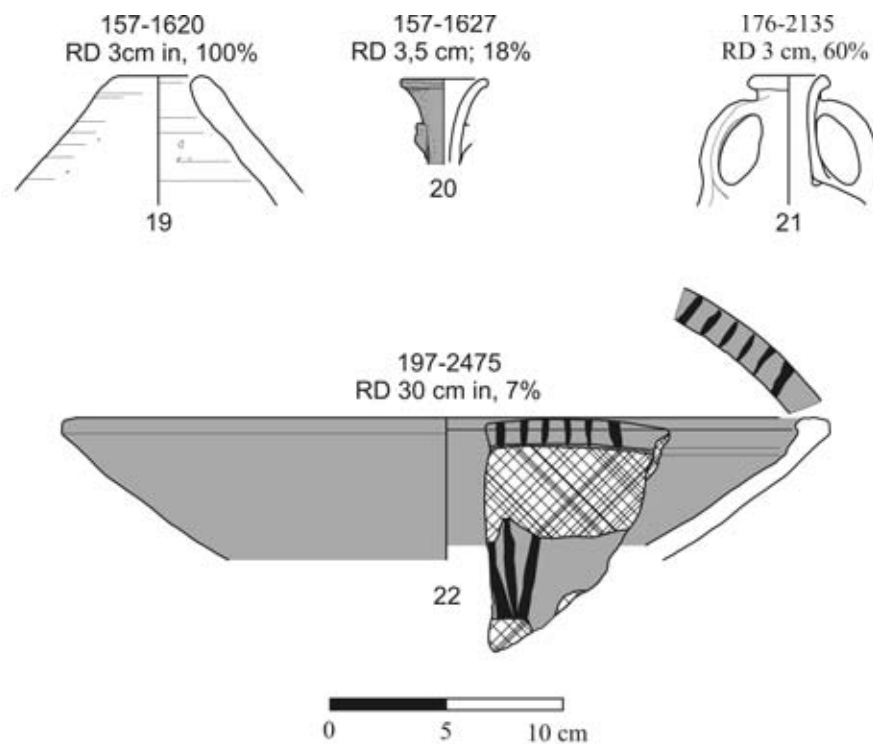


Fig. 32 Pottery from the Third Intermediate Period

ally disappeared,¹⁰⁸ although it is still sporadically visible (Fig. 30.10). Uncoated bowls were also common in Tanis.¹⁰⁹ The cups have wheel-made, slightly pointed bases (Fig. 30.11).

A large bowl made of sandy Nile B2 is also common at Tell el Retaba (Fig. 30.12).¹¹⁰ The pot has a thickened flaring rim and its external surface always bears impressions of string.

Another frequent find from the site is a flat bread mould (Fig. 30.13).¹¹¹ It is made of Nile C or Nile E clay. Rim diameter varies between 26 and 31cm. These vessels were very popular across Egypt from the Third Intermediate Period to the Late Period.¹¹²

Large rough trays occur in some quantity (Fig. 30.14). Their rim diameter exceeds 40cm. They were made of very coarse clay (NC) with many organic inclusions. Their very irregular shape indicates handmade manufacture. Trays of simi-

lar shape were also found in Tanis in the Third Intermediate Period layers.¹¹³

Another characteristic form is a jar with long cylindrical neck and slightly thickened rim (Fig. 31.15–16).¹¹⁴ The fabric is the same as in the case of the bowls from Fig. 30.7–11, which is Nile B2 sandy. The external surface of the jars is very often blackened with traces of soot indicating possible use as a cooking vessel.

There is also an almost complete jar with wide open flaring rim and ring base, the so called ‘chamber pot,’ made of Nile B2 clay (Fig. 31.17). Its shape fits very well into the Third Intermediate Period corpus.¹¹⁵ However pots of this kind usually have one vertical handle attached to the rim and shoulder.¹¹⁶ Approximately 60% of the Retaba vessel is preserved so it is highly probable that it had a handle which is now lost.

¹⁰⁸ For uncoated bowls of this type dated to the beginning of the Third Intermediate Period, see e.g. ASTON 2007, 33, fig. 28.142–143, 145.

¹⁰⁹ BAVAY 1998, 321–322, fig. 33.19–20.

¹¹⁰ REDMOUNT 1989, 371, 373, fig. 54.93–94, 98–99.

¹¹¹ See also REDMOUNT 1989, 391, fig. 54.251–255.

¹¹² See, for instance, ASTON 1998, 570, figs. 2340–2344; 1999, 200, 203, figs. 1835–1836.

¹¹³ BAVAY 1998, 323–324, fig. 34.46–47.

¹¹⁴ See, for instance, ASTON 2007, 35, fig. 31.237–244.

¹¹⁵ ASTON 1996, 131, fig. 29.208 – jar from Tanis, 134, fig. 32b – pot from Nebesheh, 168, fig. 66.402–403 – two pots from Memphis.

¹¹⁶ ASTON 1996, 160, fig. 58.12 – vessel from Heliopolis, 168, fig. 66.404 – jar from Memphis. See also ASTON 1998, 550–551, fig.1.

Jars with incurved walls and elongated rims, and often with a pair of handles (Fig. 31.18), were also very common.¹¹⁷ The pots are well known from the Third Intermediate Period contexts at Tell el Daba¹¹⁸ and Mendes.¹¹⁹

So called ‘pigeon’ pots (Fig. 32.19) also characteristic of the Third Intermediate Period¹²⁰ are known from Tell el-Retaba. They are usually made of NC or NE clays and their external surfaces are well smoothed. Parallel throwing lines visible inside indicate the vessels were made on a wheel.

Fragments of pilgrim flasks were also found. A small two-handled pilgrim flask (Fig. 32.20) is made of Nile B2 clay with a thin layer of red slip applied to its external surface. The piece is well datable with analogies coming from the 20th–21st Dynasty context at Qantir.¹²¹ The shape of another pilgrim flask found at Tell el-Retaba (Fig. 32.21) is also known from Qantir.¹²²

The ceramics are not decorated, except for pilgrim flasks made of Nile B1 clay (Pl. 1e), and shallow bowls with ledge rims. No complete pilgrim flask with decoration has been preserved. However, several decorated body sherds were discovered. The red-coated pots were painted black on the outside (Pl. 1e). The patterns are very simple circular bands. According to Aston on the basis of ceramics from Memphis such pots can be dated to the 11th–10th century BC.¹²³ Similar pots are also known from Tanis.¹²⁴

The bowls were also black-painted (Fig. 32.22), but the motifs are more elaborate. The interior of the bowl has a stylized floral pattern. Its rim was additionally painted with short parallel strokes. Black parallel lines can be found on a bowl from Tanis.¹²⁵ Similar patterns can be seen among pots described by Petrie.¹²⁶

Conclusions

The ceramic material coming from the 2008 excavated areas is well defined. It appears to be very homogenous, even though the site has suffered from destruction.

The field work revealed two main phases of site occupation, late New Kingdom and the beginning of the Third Intermediate Period. The late New Kingdom in comparison to the Third Intermediate Period layers contained less vessels. Both assemblages demonstrate some parallels, e.g. bowls with flaring walls and small hemispherical cups. Nonetheless, the two assemblages are clearly different. In the course of a relatively short time the pottery repertoire visibly changed. Jars with round rims slipped with a red coat and marl jars with a cylindrical neck and rounded rim disappeared. Red paint on the rims of small hemispherical cups gradually vanished. The Third Intermediate Period contained neither red-slipped bowls with flaring walls nor blue-painted pots. The decoration of the vessels is also different. Pots from the 21st and 22nd Dynasty have black-painted decoration. The motifs are very simple, usually short parallel lines appearing on rims of unrestricted vessels, also circular bands painted on pilgrim flasks.

Why did the pottery production change so rapidly? Perhaps the phenomenon reflects the political situation in Egypt. The power shift to the northern Delta must have influenced pottery production. The ceramic repertoire may indicate new trends coming from a different production center, located perhaps in Tanis.

The structures excavated in 2008 came from two general periods, the late New Kingdom and Third Intermediate Period. Material from the Second Intermediate Period mentioned by Carol Redmount is probably located in the lower strata not yet excavated. Material from the Late and Ptolemaic Periods visible on the surface of the kom must be connected to some as yet unidentified structures in other parts of the site.

CATALOGUE OF POTS¹²⁷

Fig. 29.1 – Number 2744. Area: 1. Unit: 46 (occupational deposit). Clay NB2. Surface ex: red-coated and smoothed. Surface in: red-coated and smoothed. Manufacture: thrown.

¹¹⁷ See also REDMOUNT 1989, 395, fig. 54.270–275.

¹¹⁸ ASTON 1996, 142, fig. 40.6, pot K3436 dated to the 20th–21st Dynasty.

¹¹⁹ ASTON 1996, 130, fig. 28.8 – Ramesside and Third Intermediate Periods.

¹²⁰ See BAVAY 1998, 323–324, fig. 34.41; DEFERNEZ and ISNARD 2000, 217, pl. XIX, type 36A.

¹²¹ ASTON 1998, 550–551, fig. 2243.

¹²² ASTON 1998, 544–545, fig. 2225.

¹²³ ASTON 2007, 53, fig. 47.557.

¹²⁴ DEFERNEZ and ISNARD 2000, 170, 211, pl. XIII, type 17A; BAVAY 1998, 321–322, fig. 33.22.

¹²⁵ BAVAY 1998, 319–320, fig. 32.6.

¹²⁶ PETRIE and DUNCAN 1906, pl. 36:2.

¹²⁷ Drawings of ceramic vessels were made by Karlina Górka, Sylwia Gromadzka, and Anna Wodzińska. Photographs are by Anna Wodzińska.

- Fig. 29.2** – Number: 2335. Area: 1. Unit: 29 (occupational deposit). Clay: NB2. Surface ex: smoothed. Surface in: red-coated, smoothed. Manufacture: thrown.
- Figs. 29.3, Pl. 1b** – Number: 2594. Area: 1. Unit: 45 (occupational deposit). Clay: NB2 sandy. Surface ex: red-coated and smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 29.4** – Number: 2882. Area: 1. Unit: 45 (occupational deposit). Clay NB2 sandy. Surface ex: red-coated and smoothed. Surface in: smoothed. Manufacture: thrown.
- Figs. 29.5, Pl. 1d** – Number: 2578. Area: 1. Unit: 45 (occupational deposit). Clay: M. Surface ex: burnished. Surface in: smoothed. Manufacture: thrown.
- Figs. 29.6, Pl. 1c** – Number: 2577. Area: 1. Unit: 45 (occupational deposit). Clay: NB1. Surface ex: red-coated and polished. Surface in: red-coated and polished. Manufacture: thrown. Decoration: cream- and blue-painted bands on the internal surface.
- Fig. 30.7** – Number: 875. Area: 2. Unit: 129 (surface). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 30.8** – Number 1624. Area: 2. Unit: 157 (ash-rich deposit). Clay: NB2 sandy. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 30.9** – Number: 865. Area: 2. Unit: 120 (ash-rich deposit with many animal bones). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 30.10** – Number: 1700. Area: 2. Unit: 156 (natural aeolian sand). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Decoration: red-coated rim on internal and external surface.
- Fig. 30.11** – Number: 1292. Area: 2. Unit: 127 (occupational deposit). Clay: NB2 sandy. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 30.12** – Number: 894. Area: 2. Unit: 118 (surface). Clay: NB2 sandy. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Remarks: string impression on external surface.
- Fig. 30.13** – Number: 2273. Area: 2. Unit: 192 (ash-rich deposit). Clay: NC. Surface ex: smoothed. Surface in: smoothed. Manufacture: handmade.
- Fig. 30.14** – Number: 2544. Area: 2. Unit: 197 (ash-rich deposit). Clay: NC. Surface ex: roughly treated. Surface in: roughly smoothed. Manufacture: handmade.
- Fig. 31.15** – Number: 1136. Area: 2. Unit: 137 (surface). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Remarks: a little bit burned inside.
- Fig. 31.16** – Number: 1235. Area: 2. Unit: 141 (wall collapse). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Remarks: burned on the external, and partly internal surface of the rim.
- Fig. 31.17** – Number: 2828. Area: 2. Unit: 203 (occupational deposit). Clay: NB2 sandy. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Remarks: ‘chamber pot’.
- Fig. 31.18** – Number: 1296. Area: 1. Unit: 127 (occupational deposit). Clay: NB2. Surface ex: pink-coated and smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 32.19** – Number: 1620. Area: 2. Unit: 157 (ash-rich deposit). Clay: NC. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown.
- Fig. 32.20** – Number: 1627. Area: 2. Unit: 157 (ash-rich deposit). Clay: NB2. Surface ex: red-coated and smoothed. Surface in: smoothed. Manufacture: thrown. Remarks: pilgrim flask.
- Fig. 32.21** – Number: 2135. Area: 2. Unit: 176 (ash-rich deposit, probably a fire place). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Remarks: pilgrim flask, one piece in unit 168.
- Fig. 32.22** – Number: 2475. Area: 2. Unit: 197 (ash-rich deposit). Clay: NB2. Surface ex: red-coated and smoothed. Surface in: red-coated and smoothed. Manufacture: thrown. Decoration: black-painted pattern on internal surface.
- Pl. 1a** – Number: 2446. Area: 1. Unit: 33 (occupational deposit). Clay: NB2. Surface ex: smoothed. Surface in: smoothed. Manufacture: thrown. Decoration: red-painted rim.
- Pl. 1e** – Number: 1219. Area: 2. Unit: 141 (wall collapse). Clay: NB1. Surface ex: pink-coated and polished; Surface in: smoothed. Manufacture: thrown. Decoration: black circular painted bands on the external surface. Remarks: body sherd of pilgrim flask.

3.3. GEOPHYSICAL SURVEY

By Tomasz Herbich

Following geophysical prospection in 2007 using dipole electromagnetic profiling (DEMP) for horizontal mapping of structures and electrical resistance tomography (ERT) for vertical imaging,¹²⁸ the site of Tell el-Retaba was surveyed with the magnetic method.

The northern section of the fortress wall had been mapped with the DEMP method, failing however to reconstruct any of the architecture inside the walls apart from a very general determination of building orientation – rectilinear with respect to the fortifications in the eastern part of the site and oblique with regard to the north defense wall in the western part (Fig. 7). ERT vertical imaging led the geophysicists to the conclusion that there was stone architecture on the site.

The magnetic method has already been proved the most effective in mapping mud-brick architecture.¹²⁹ The geological conditions of the site favored its application in Tell el-Retaba. The underlying layers here consist of sand and gravel, both characterized by low magnetic susceptibility (usually less than 0.3×10^{-3} SI); the same material is the main constituent of layers filling and covering mud-brick structures. Mud-brick is on the other hand a material with considerable magnetic susceptibility (c. 2×10^{-3} SI). In view of this substantial difference between the magnetic properties of the material used for construction and the surrounding deposits, the magnetic method promised to give good results, even in the face of the considerable destruction of the site by numerous archaeological and civil building excavations, not to mention *sebakhin* digging, which lowered the clarity of the magnetic images.

*

Fluxgate-type gradiometers by Geoscan Research, model FM 256 of 0.1 nT resolution, were used for the purpose.¹³⁰ The measurement grid applied was

20×20 m, with points every 0.25 m along traverses set 0.5 m apart. The measurement density of this grid (8 measurements per square meter) guaranteed the recording of even small-size structures (e.g. walls not more than 20 cm wide). The measurements were carried out in parallel mode (the equipment was moved along the measuring lines in one direction only); sensors were adjusted at the reference point after completing each grid.

The grid used was intentionally shifted with respect to the geodetic grid, the purpose being explicitly to carry out the survey along lines that would cut across the known orientation of ancient structures on the site (established in Petrie's excavations) at an angle of approximately 45 degrees. The traverses followed a SW-NE orientation.

Two areas, marked A and B, covering a total of 4.28 ha, were surveyed: area A covering 24,000 sq.m in the western part of the site and area B covering 18,800 sq.m. eastern part of the site (Fig. 33). The areas are separated by a depression created by the laying of a water pipe and by the part of the site cleared during earlier archaeological excavations.

The magnetic survey made it possible to map precisely the course of the northern and eastern section of the wall enclosing the settlement. On the magnetic map this wall appears as an anomaly characterized by fairly uniform intensity of the magnetic field, from 10 to 12 m wide, stretching between squares F1 and P14 (northern section) and squares P15 and L17 (eastern section) (Fig. 33). The southern, inner face of the northern section of the wall can be observed with greater precision; in the case of the eastern section of the wall, it is the outer edge which is better visible. The map leaves no doubt that the northern section of the wall does not run in a straight line. The direction of the wall in area B corresponds to that established by Petrie, but in area A it evidently swings 6 degrees to the south. The inner line of the wall was confirmed in excavations in Area 1.

¹²⁸ RZEPKA *et al.* 2008. For a brief summary of the survey results, see above, section 2.4.

¹²⁹ HERBICH 2003.

¹³⁰ Geophysical research at Tell el-Retaba was carried out on 3–12 September 2008. The survey was run by Tomasz Herbich, currently representing the Institute of Archaeology and Ethnology of the Polish Academy of Sciences, supported in his work in Egypt by the Polish Center of Archaeology of the University of Warsaw.

Participating in the work was Mr. Jakub Ordukowski, student at the Institute of Archaeology of the Maria Curie-Skłodowska University in Lublin. One of the instruments used for the magnetic surveying was provided by the Programa de Estudios de Egiptología (Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires) on the grounds of a cooperation agreement with the Polish Centre of Mediterranean Archaeology of the University of Warsaw.

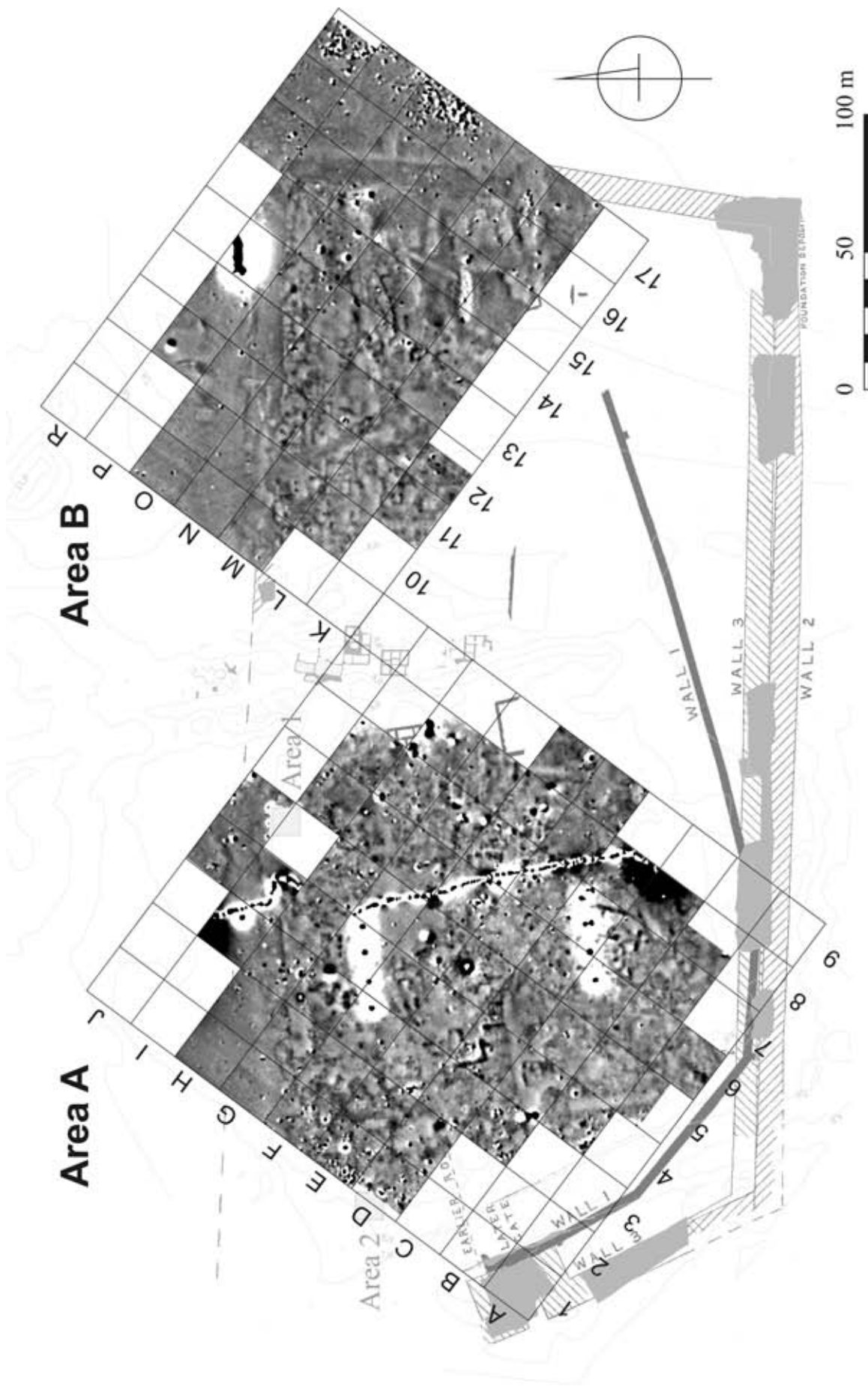


Fig. 33 Magnetic map combined with archaeological map of the site. Fluxgate Geoscan Research FM256 gradiometers. Sampling grid 0.25 by 0.50 m, interpolated to 0.25 m by 0.25 m. Low pass filter. Dynamics -4.2 nT (white) / $+6.4$ nT (black). Grid lines every 20 m (Processing T. Herbich)

The magnetic results appear to disprove Petrie's idea about only one wall running around the settlement on the east. The presence of a second wall parallel to the first one is suggested by a less than distinct anomaly c. 10 m wide, noted between the southern corner of square R15 and square N17. The evident gap in the anomaly (in the northern part of O16) could correspond to a gate, but it could equally well reflect a trench by some early excavator, cutting across the wall at right angles (there is a depression in the ground at this point). Nothing on the magnetic map even hints at the presence of another, outer wall on the north side of the site.

The survey mapped a number of structures enclosed within the walls. In Area A, the clearest image is that of a structure corresponding approximately to the southwestern corner of the temple excavated by Petrie (in D4; the southern fragment of a feature oriented EW can be seen on the surface). Sets of linear anomalies arranged rectilinearly with an amplitude of changes typical of mud-brick architecture at a shallow depth can be observed in squares C7–D7, C4, F4, G7–G8. Five rectangular anomalies in the northern corner of G4 and the western corner of H4, arranged in two rows and forming a rectangle measuring 10 by 8 m, correspond to the ash-filled interiors of a building. On this spot the ground is slightly elevated and the soil inside the purported rooms has ashes clearly mixed in.

Area A features a number of anomalies with lowered magnetic field intensity compared to the surroundings. Sets of linear anomalies in F8 and at the joining of G7 and G8 could be a reflection of walls raised of bricks with considerable sand temper in the silt. Anomalies of an oblong shape correspond to features of a larger size: an anomaly c. 4m wide and 50m long, observed between the southern corner of C3 and the northeastern edge of D5, could reflect a street running from east to west. Such an interpretation is supported by the nature of the structures on the northern and southern side: anomalies which are clearly the image of walls would correspond to the street edge. In the case of a similar anomaly (same width, 35 m long) recorded between B4 and A5, running along a N–S line, the magnetic prospection registered no

traces of any features parallel to its edges. In all likelihood, this anomaly should be interpreted as a trench (see below).

In Area B, anomalies typical of mud-brick structures occupy a strip 20 m wide adjoining the northern section of the defense wall (between the northern part of M11 and O13). Structures can be seen also in a strip up to 40 m wide along the western border of the area and near the north-eastern corner of the site, in square N14 and its nearest neighborhood.

The magnetic map has also yielded an exhaustive record of the damages to the surface layers of the site. *Sebakhin* activity is reflected in the sets of anomalies typical of sand-filled pits: irregular outlines, lowered values in the center and higher ones around the edges. Sets of anomalies of this kind can be seen all over the surveyed area, but especially in the northwestern corner of Area A where their concentration excludes any reconstruction of the original plan. These anomalies mostly correspond to depressions in the ground and can reflect unrecorded excavation.

A comparison of the magnetic map and site maps showing location of trenches made it possible to identify the anomalies which most probably reflect the work of the early excavators. The anomaly with reduced values, mentioned above as being situated between B4 and A5, corresponds on Naville's plan with a trench of practically the same size and orientation. In the same way, another trench from Naville's plan is reflected in an oblique anomaly of reduced values observed in the western corner of N15 and the northern part of M15.

In many places the readings are disturbed by iron objects. The iron pole foundations are imaged by a band of disturbed readings between F3 and G5, C6 and D7. The disturbances in C8–D8 and I3 reflect power line poles, while the linear anomaly cutting across Area A from north to south (between D8 and G5 and in I3–I4) corresponds to a cable laid on the ground. The anomaly in P13 is a reflection of a dump of waste metal (invisible on the surface). Areas of magnetic disturbance recorded between N17 and R17 correspond to rubbish dumps.

Interesting conclusions are to be drawn from a comparison of two different geophysical meth-

¹³¹ NAVILLE 1887, pl. 11.

ods – electromagnetic (Fig. 7) and magnetic (Fig. 33) – used to survey a site with mud-brick architecture. At Tell el-Retaba the electromagnetic survey has mapped the northern section of the fortress wall very well, in places where it is readable on the magnetic map (e.g., between O12 and O14) as well as where the extent of the destruction of the wall in the subsurface layers precludes its registration by the magnetic method (e.g., in M9). On the other hand, the electrical conductivity map (Fig. 7) reveals no traces of the eastern section of the fortress wall, which is well visible on the magnetic map. Moreover, the electromagnetic method has proved completely inadequate in recording the remains of structures with narrower walls (one meter and less). None of the structures of this kind recorded on the magnetic map have found any reflection on the electrical conductivity map, not even structures visible on the ground (e.g. remains of the temple). This leads to the conclusion that the electromagnetic method will locate mud-brick structures only if they are of sufficient mass, in terms of both width (at least a few meters) and depth. Therefore, on a site like Tell el-Retaba, the electromagnetic method will be useful in tracing the outer fortifications, but will not give any grounds for determining the plan, or even orientation of the architecture situated inside the walls.

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4. CONCLUSIONS

The first two seasons of fieldwork by the Polish-Egyptian Archaeological Mission in Tell el-Retaba have contributed significant new information about the site:

- the position of the northern defense wall of the Ramesside fortress was traced with the use of geophysical methods; a fragment of this wall was also excavated;
- two gates were located by geophysical methods, one in the northern and the other in the eastern defense wall;
- remains of residential structures dating to the Third Intermediate Period were excavated; other remains, observed on the surface and traced with geophysical methods, prove that Petrie was wrong in assuming that most of the area inside the fortress was left empty.

An effort was made by the mission to search out unpublished excavations reports. The results of Egyptian missions working on the site between 1972 and 1997 throw new light on the daily life of the fortress and the character of the cemeteries around it. These results, as well as the unpublished documentation of the John Hopkins University mission directed by Prof. Goedicke will be included in the final publication of excavations by a Polish-Slovak team on the site of Tell el-Retaba.

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