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Tell El-Retaba: Season 2010

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TELL EL-RETABA SEASON 2010

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Abstract: The fourth season of archaeological fieldwork by a Polish–Slovak team at Tell el-Retaba in Wadi Tumilat in the Nile Delta led to the excavation of barracks or workshops belonging to a fortress of Ramesses II. The strategically located New Kingdom fortresses guarded the passage from Egypt to Sinai and Syria-Palestine. Investigations also focused on a monumental *migdol* gate leading to a fortress built in the reign of Ramesses III. Among the most interesting discoveries is a Third Intermediate Period stable with tethering stones made of blocks quarried from a New Kingdom temple.

Keywords: Tell el-Retaba, New Kingdom, Third Intermediate Period, *migdol*, fortress, stable

The work during the fourth season of fieldwork by the Polish–Slovak team concentrated along an asphalt road which crosses the site. Excavations took on a salvage character owing to planned road-building (second lane to the east of the existing road) and were carried out in areas 4, 7 and 8 on the western side of the asphalt road and areas 3, 6 and 9 east of

the road [*Fig. 1*]. The geophysical survey was continued (previous prospection took place in 2007 and 2008, see Rzepka, Hudec, Herbich 2011) and the site was documented from the air using a kite. The following is a brief review of the results of this season; it and the previous season have already been reported on extensively in *Ägypten und Levante* (Rzepka *et alii* 2011).

AREAS 4, 7 AND 8 WEST OF THE ASPHALT ROAD

AREA 4: *Migdol*

Excavations were carried out in 18 squares of 5 x 5 m: Y95/X170–195, Y90/X175–195, Y85/X175–180, Y80/X175–180, Y75/X175–180 and Y70/X180 (eastern half) and Y95/X165 (northern half), comprising the area of a strongly fortified western gate of a late Ramesside fortress

[*Fig. 3*]. The research aimed at verifying Petrie's documentation and at investigating the relation of the *migdol* with his walls 1 and 2/3. The bulk of the work consisted of removing sand and modern deposits. Recent brick debris, resulting from digging, apparently with the use of a loader(!), had to be cleared from a section through the

defence wall (Petrie's "wall 1") in square Y95/X180 (excavated in 2009). This act of vandalism obliterated any remaining stratigraphic evidence of the chronological relations between Petrie's "wall 1" and various phases of *migdol* construction.

Further work focused on uncovering the entrance between the two massive mud-brick towers of the *migdol*. The southern, and part of the eastern face of the north tower were cleaned. The dimensions of the tower were determined to be 22.5 m east to west and 14 m north to south. An east-west cut seen in the north tower was identified as an old trench (Naville 1887: Pl. xi, section E-F), described by W.M.F. Petrie as follows: "the very thick wall at the west of it is really the thickness of the gateway bastions, one of which was cut through instead of tracing the face

of it" (Petrie, Duncan 1906: 28). Further illicit digging some time in the past thirty years was noted also in squares Y90/X190 and Y90/195. A well-preserved plastered wall, about 1 m high, was uncovered after removing the modern deposits mixed with sand and debris from a later phase of Petrie's "wall 1". The plastered wall might have been part of an older western gate, the existence of which had already been suggested by Petrie (Petrie, Duncan 1906: 29, Pl. XXXV).

In square Y90/X195, some poorly preserved mud-brick structures were also excavated on top of Petrie's "wall 1", further east of Naville's trench. They probably belonged to the Third Intermediate or Late Period.

A large Third Intermediate Period refuse pit was excavated in square Y95/

Team

Dates of work: 14 September–28 October 2010

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X180. It had been dug into Petrie's "wall 1" (and perhaps also the south tower of the *midgol*). The fill contained a large amount of ash, potsherds and completely preserved vessels.

A kind of "corridor" was excavated between Petrie's "wall 1" and the eastern flank of the southern tower of the *midgol* [Fig. 2]. It is not a real corridor, but a space between the remains of "wall 1" and the

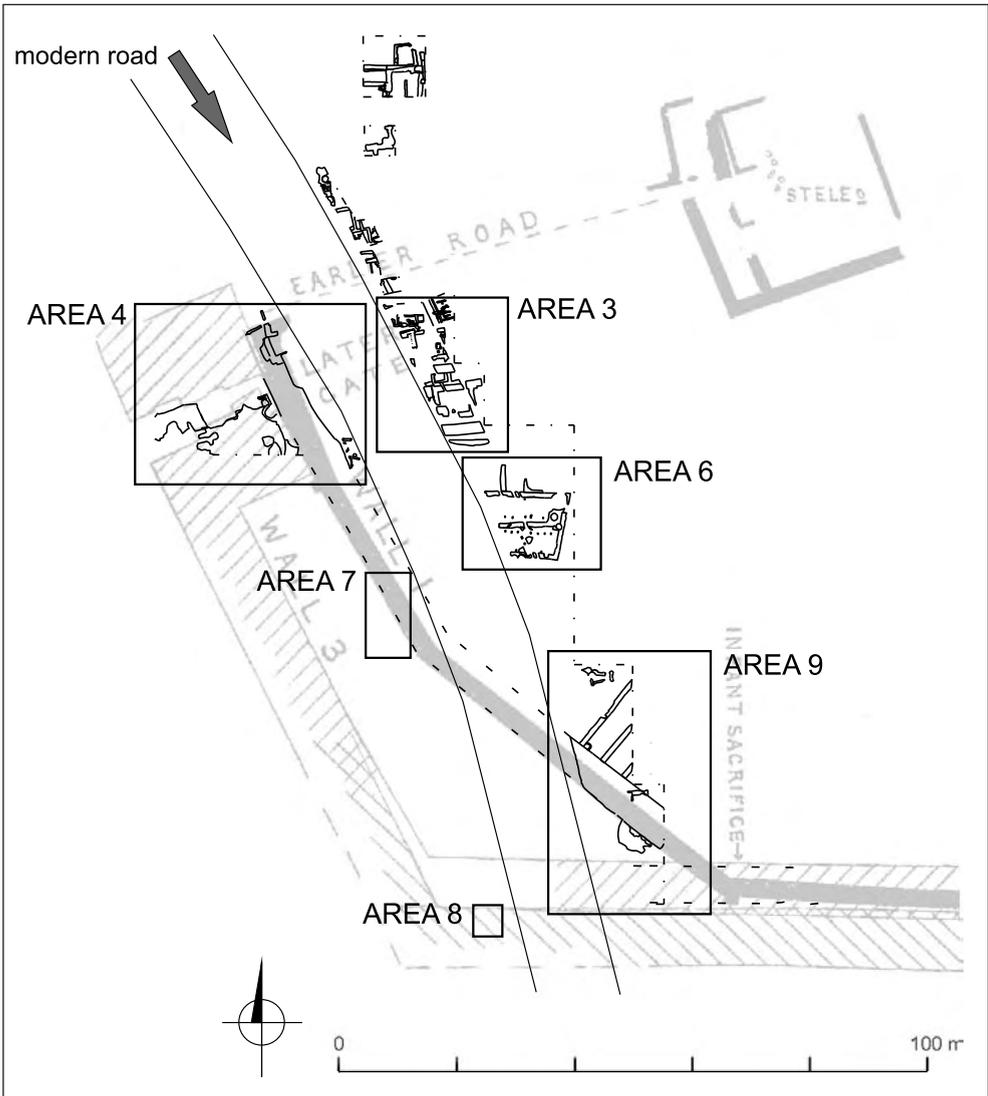


Fig. 1. Map of the western part of the tell with the location of areas explored during the 2010 season (Drawing Ł. Jarmużek)

foundations of the *migdol*. This “corridor-like” space, which survived despite the extensive illicit modern digging in the area, was filled with homogenous yellow sand with only a random potsherd in it. Similar sand was found also under the foundations of the northern tower of the *migdol*.

Approximately a third of the area of the southern tower was cleaned on the surface, tracing in effect the southern border of the structure. The tower measured about 14.50 m north to south. Pits traced in the eastern part of the tower proved to be excavated already in the course of earlier archaeological activities. The western part of the south tower, especially the part in the entrance, incurred severe damages in



Fig. 2. “Corridor” between Petrie’s “wall 1” (left) and the south tower of the *migdol* (right), view to the south (Photo J. Hudec)

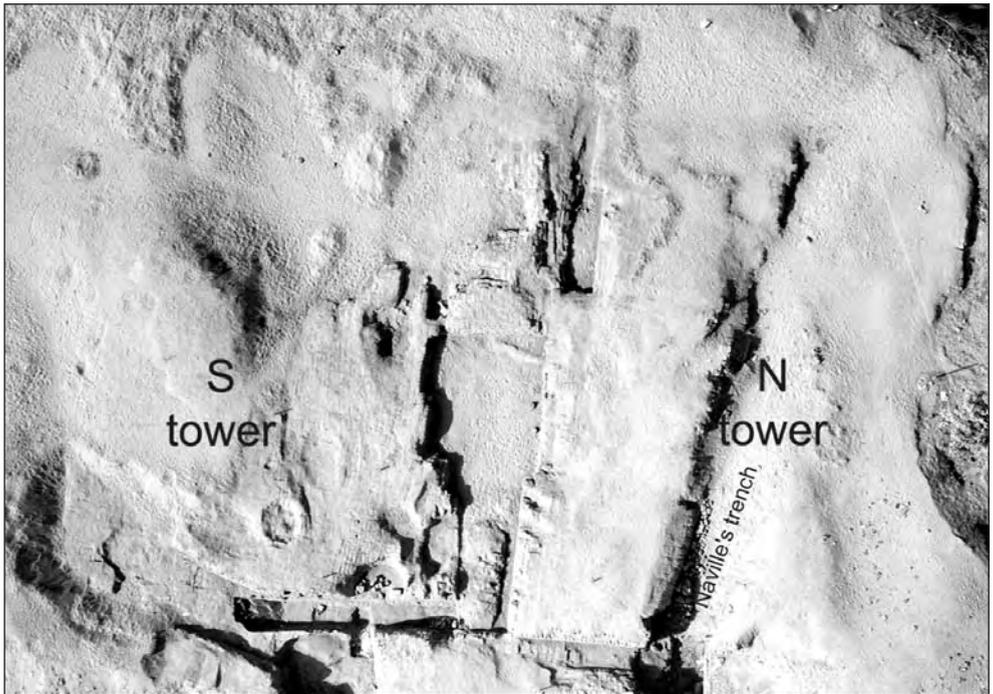


Fig. 3. *Migdol*, the western gate of the fortress of Ramesses III after the 2010 season (Kite photo M. Bogacki)

consequence of *sebakhin* digging and/or weather impact.

The *migdol* entrance is narrowest at the eastern end and widens gradually to the west. An entrance niche was traced in the face of the northern flanking tower; Petrie had indicated a parallel one in the southern tower (Petrie, Duncan 1906: 29, Pl. XXXV). Other niches indicated on Petrie's map should be interpreted as the result of masonry erosion rather than actual architectural features. Masonry found west of the gate can be interpreted as sealing the entrance in a later phase(s) of building development or as the base for a threshold [Fig. 4]; it is preserved at foundation level only (below the walking level from the time when the *migdol* was in use). So far, however, no evidence of any kind of stone

threshold has been discovered, not to mention stone jambs, pavement or casing.

AREA 7

The area consists of two squares (Y110/X145–150). Relics of the western face of Petrie's "wall 1" were traced in square Y110/X150. Several meters of the wall east of the square had been damaged by modern road construction.

AREA 8

Relics of the southern and northern faces of Petrie's "wall 2" were traced in a section in square Y130/X9. The width and height of the wall suffered apparently from *sebakhin* activity, so only two courses of mud bricks have been preserved.

[JH]



Fig. 4. Masonry in the *migdol* entrance, either blocking the passage in a later phase or a foundation under a stone threshold(?), view to the north (Photo J. Hudec)

AREAS 3, 6 AND 9 EAST OF THE ASPHALT ROAD

AREA 3

Explorations under an ancient road discovered in the previous season, leading from the western gate (*migdol*) toward the middle of the fortress and used from the late New Kingdom until the Third Intermediate Period, revealed a massive wall, running north–south. This wall, approximately one meter thick, was aligned with a wall running 3.50 m further to the west, which had been uncovered in 2009. The building technique recalled that of walls in military barracks from the time of Ramesses II found in area 9 (see below), bricks being of similar size, color and



Fig. 5. Eighteenth Dynasty hut in area 3
(Photo C. Baka)

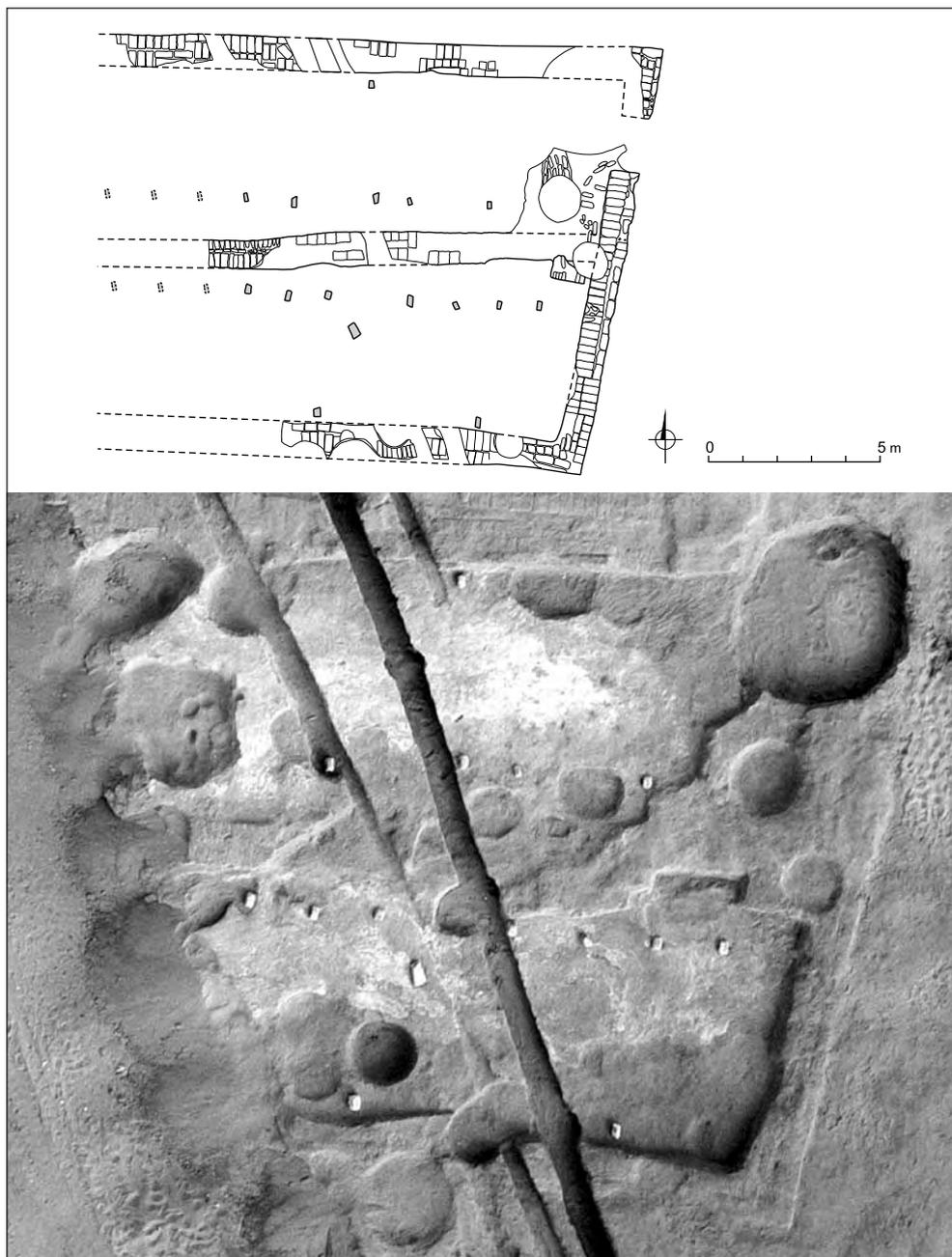
bonding pattern. Pottery from adjoining layers could be dated to the same general period as in the case of the barracks, but meager preservation (just two or three courses of bricks above the foundations and no associated floor) did not allow for the function of the building — whether barrack, storeroom or something else — to be identified.

Underneath the abovementioned building a small structure with very thin walls was found [Fig. 5]; it could be dated to the Eighteenth Dynasty (Wodzińska 2011). It seems to be a small, poorly built house or hut (a similar construction was found in this area on the same level already in 2009). Still deeper, about 6 m under the present surface of the tell, a round granary was discovered. It, too, was dated to the early Eighteenth Dynasty.

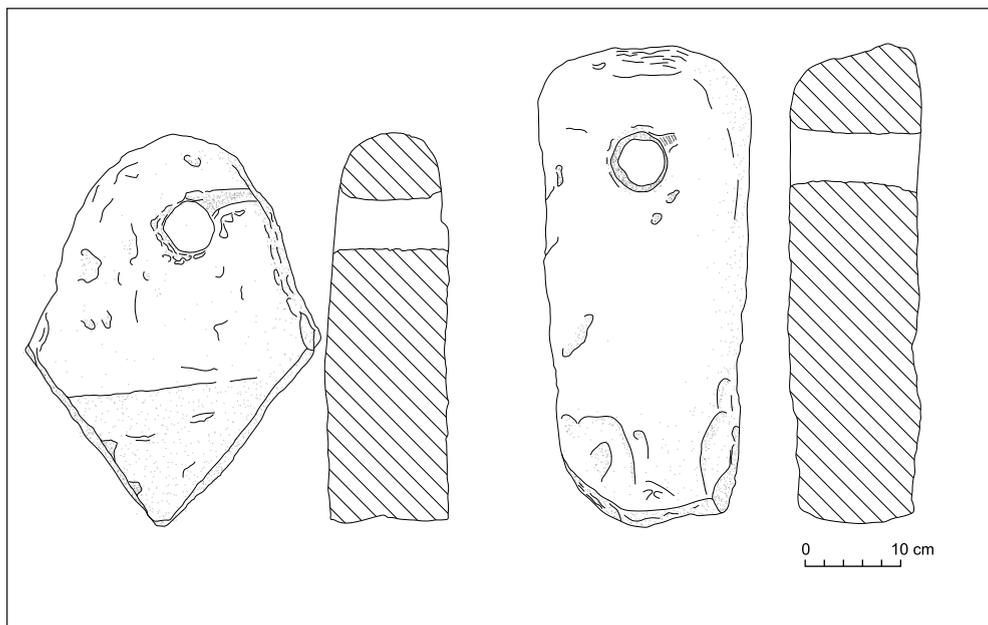
[SR]

AREA 6: STABLES

The geophysical survey conducted in 2008 had suggested the presence of an ancient road in this area. Instead of the presumed road, excavations revealed a building consisting of two units, both rather poorly preserved [Fig. 6]. The western part of the building was destroyed when the modern asphalt road crossing the site was built. The preserved part measures 14.30 m by 11.30 m, the longer axis being aligned from east to west. Walls rise 0.65 m from the original floor level, their thickness being about 0.70–0.90 m. The entrance to the northern of the two rooms was situated in the northern part of the east wall. It was 1.40 m wide. The fill included a relatively meagre, but chronologically



*Fig. 6. Building interpreted as a stable: aerial view and plan
(Kite photo M. Bogacki; drawing Ł. Jarmużek)*



*Fig. 7A. Plain tethering stones
(Drawing B. Adamski, Ł. Jarmużek)*



Fig. 7B. Tethering stones made from decorated blocks, preserving traces of figural decoration (left) and hieroglyphic inscription (Photos C. Baka)

distinct pottery assemblage, permitting all three occupational phases of the structure to be dated to the end of the Third Intermediate Period (Wodzińska 2013, in this volume).

The building contained a series of tethering stones, which belonged stratigraphically to the first phase of the building. Thirteen of the stones were arranged in rows, one row per room, by the center wall dividing the stable and aligned with it; three more stones were located close to the outer walls. The distance between the stones in the rows was approximately 1.10 m. The stones were made of limestone, in most cases of a very soft variety. Some of them featured fragments of relief decoration; there can be no doubt that the stones were salvaged from a ruined temple somewhere nearby (see below). A round hole pierced in the top of each stone served to fix a rope and there are use-wear marks in the form of grooves around these openings on almost every stone [Fig. 7A,B].

The tethering stones and the characteristic layout of the structure identified the building as a stable. It is the first example of a building of this kind from the Third Intermediate Period. The dimensions of the stable, the layout and distance between the tethering stones resemble that of stables found in Qantir (Herold 1999; 2006: 45–48; Pusch 1989) and Tell el-Amarna (Newton 1924, Pendlebury 1951: 132–134), both of which were used for horses. Therefore, it can be assumed that the stable in Retaba was also used for horses, rather than oxen or donkeys. However, the lack of an installation for collecting urine (known from Qantir) and an accumulation of dung, which suggests poor maintenance, could testify against the assumption. At the moment, the species of the animals

stabled here could not be ascertained for sure.

Four of the tethering stones were found to bear fragmentary decoration: three cases of sunken relief and one of raised relief. On one block there was a representation of a seated god [see Fig. 7B, left]. A characteristic composite divine staff (composed of the signs *was*, *djed* and *ankh*) suggests the god Ptah. Fragments of monumental inscriptions with royal protocol were identified on two of the blocks. On one it was possible to reconstruct the popular royal epithet *neb khau* “Lord of Diadems” [see Fig. 7B, right]. Decoration on the third block is difficult to interpret due to its fragmentary condition. The blocks were obviously salvaged from a ruined temple. It could have been a temple of Atum raised by Ramesses II and enlarged probably by Ramesses III. Several blocks from this temple had been discovered already by Petrie in 1905 (Petrie, Duncan 1906: 29–31, Pls XXVIII–XXXII). By the Third Intermediate Period it had apparently fallen into ruin.

[SR, ŁJ]

AREA 9

Exploration in this area aimed at uncovering the oldest fortifications in Tell el-Retaba (Petrie’s “wall 1”) and investigating occupation levels connected with these defenses. Previous work in 2009 had disproved Petrie’s dating assumptions, indicating that the fortifications could be attributed to the New Kingdom period (Górka, Rzepka 2011; Rzepka *et alii* 2011). The construction of the wall was investigated this year. Its core was built during the early Nineteenth Dynasty (pottery evidence from an ash

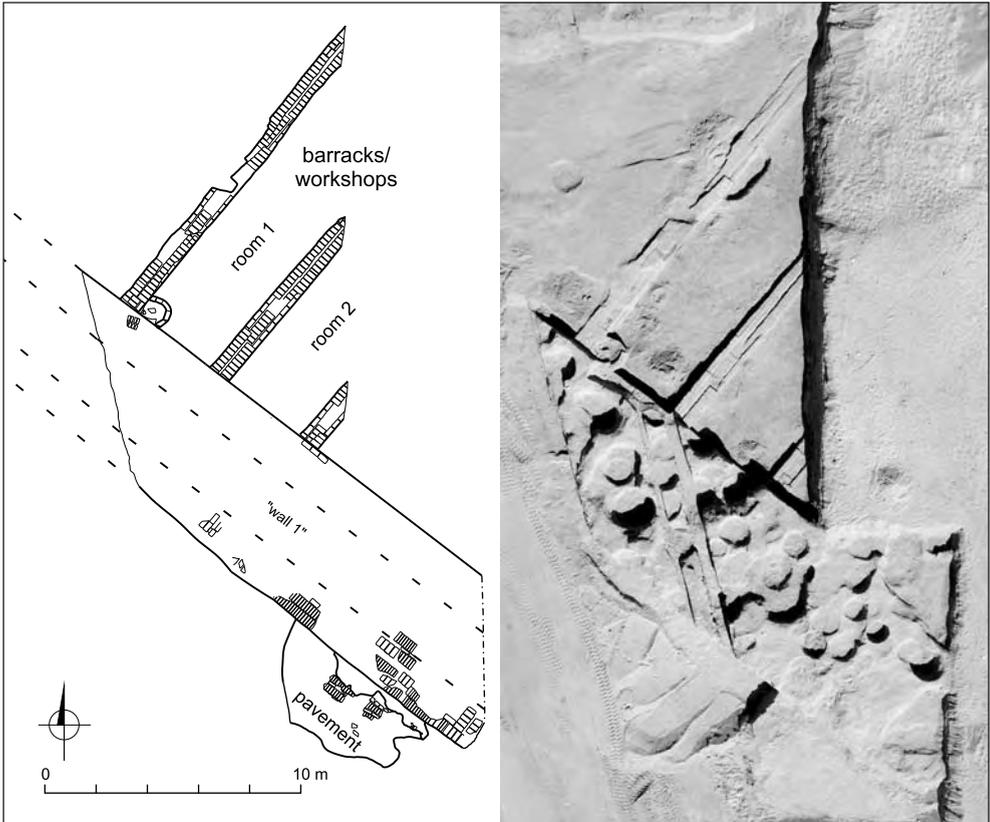


Fig. 8. Structures belonging to the fortress of Ramesses II in area 9, plan and aerial view; note “wall 1” damaged by numerous round pits, long rooms abutting the inner face of the wall and a brick pavement along the outer face (Drawing K. Górka, Ł. Jarmużek; kite photo M. Bogacki)

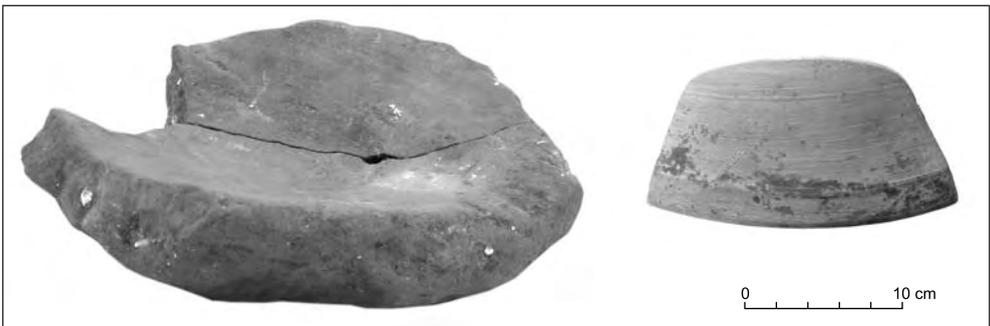


Fig. 9. Objects found in the barracks/workshops in area 9: quartzite quern (left), and pottery scraper (Photos C. Baka)

layer under the core, see Wodzińska 2013, in this volume) and shortly after that, most probably during the reign of Ramesses II, the original wall was reinforced to a substantial thickness of approximately 5 m.

Outside the wall there was a pavement [Fig. 8] made of a single layer of mud bricks smeared with mud mortar. It was covered with pottery and animal bones, apparently refuse thrown from the top of the wall, forming a layer of a few centimeters.

Abutting the inner face of “wall 1” was a large building, of which only two rooms were partly excavated this season [see Fig. 8]. The construction technique and the width of the rooms were similar to those of the Ramesside structure in area 3 (see above), but better preserved, up to seven courses of bricks in places (three in the foundations

and four above the occupation level of the time). Each of the two excavated units was 3.50 m wide and at least 13 m long (although the full length could not be excavated). The building may have served as barracks for soldiers. Domestic use was suggested by the pottery, which included an abundance of tableware, as well as by other finds, such as an oven and big quern [Fig. 9, left] found in the south room and remains (actually white traces) of a floor mat of reeds in the north room. Some kind of workshop activities may be deduced as well: a large set of scrapers [Fig. 9, right] made from reused pots sherds was found on the occupation level in the south room. Similar objects from comparable contexts in Qantir (Raedler 2007) were interpreted as tools used for working hides.

[SR]

CONCLUSIONS

Finds recorded in the 2010 season of excavations have cast new light on the history and organization of settlements and fortresses in Tell el-Retaba in New Kingdom times and the Third Intermediate Period. A large building, consisting of several long, narrow rooms, located in the southwestern corner of the fortress (area 9) and interpreted as an army barracks-turned-workshop, has supplied the first clues to understanding the organization of space inside the fortress of Ramesses II. The building abutted the inner face of the defence wall, indicating that there was no passage running along the inner side of the fortifications. Judging by the width of different architectural units discovered in area 3, the architects of Ramesses II were using a module of seven cubits (approximately 3.50 m).

The fortress of Ramesses II was abandoned within a few decades of its construction and was levelled in the times of Ramesses III to make room for a new, larger and stronger fortress with a monumental western gate of the *midgol* type. Petrie’s documentation of this gate (which was located in area 4) was verified, but it proved impossible to resolve existing doubts concerning the construction of the *midgol* and its functioning.

Meriting particular note is the discovery of a Third Intermediate Period stable (area 6), there being no comparable structures of the type known from this period. Decorated blocks used as tethering stones in the stable indicate that the Ramesside temple of Atum in Tell el-Retaba was already in ruins during the Third Intermediate Period.

[SR]

APPENDIX

TELL EL-RETABA 2010: PRELIMINARY REPORT ON
ARCHAEOBOTANICAL INVESTIGATIONS

Claire Malleson

Based on the results of the 2009 season of excavations at Tell el-Retaba, 45 samples of approximately 5 liters were taken from archaeological features on site for archaeobotanical analysis in 2010. Each of the samples was processed via bucket flotation using a 300µm mesh to collect the flot. This material was dried and examined under a binocular microscope at 7–15x magnification. Species were identified and recorded. Where species identification was uncertain, photographs and drawings were made for comparison with modern specimens in reference collections in the United Kingdom. In 2009, it was assumed that the preservation of plant remains by desiccation was highly unlikely, however, the quantity of desiccated remains (primarily animal dung) found in samples from securely dated features was sufficient to reassess this assumption. Thus, desiccated material was identified and included in the 2010 results.

The number of samples taken from the three main areas of investigation on the eastern side of the Tell is listed in *Table 1*. One sample was taken from area 4, to the west, but this was not the main focus of archaeobotanical investigation and has been excluded from the present analyses. Dating is to period or dynasty where possible (based on information available in 2012); *Table 2* provides the raw data counts of identified items by period and

area, and the density of items (number of identified plant items per liter of soil). Only tentative preliminary observations are possible at this early stage.

Area 6 proved to be the richest area in terms of quantity of material and this is reflected in the taxa diversity (number of plant species present) [see *Fig. 1*]. The richest samples in terms of density of remains date to the Eighteenth Dynasty, however these samples were not the richest in terms of taxa diversity. With 34 different taxa present and a density of 111.5 items per liter, the Third Intermediate Period remains were by far the richest overall. This overview of the material indicates that in

Table 1. Number of samples from areas of excavation by chronological period

Area	Period	Number of samples
3	Eighteenth Dynasty	4
	Nineteenth Dynasty	3
	Twentieth Dynasty	3
	Third Intermediate Period	1
	Modern	1
6	Third Intermediate Period	15
9	Nineteenth Dynasty	11
	Third Intermediate Period/ Late Period	6
Total		44

EGYPT

the Eighteenth Dynasty there were fewer weed species present in the crops, but a heavier reliance on processing waste as fuel. During the Nineteenth Dynasty there was little change in the diversity of plant species present, yet a significant drop in the

use of plant materials as fuel. In fact, there was significantly less charred material in the samples overall from the Nineteenth Dynasty which could be indicative of cleaner domestic spaces. The Twentieth Dynasty samples contained a higher

Table 2. Raw data counts of identified items by period and area and the density of items

PERIOD	Number of samples	Total number of items	Total sample volume (liters)	Density: Items per liter of soil
Eighteenth Dynasty	4	2896	20	144.80
Nineteenth Dynasty	14	1988	68	29.24
Twentieth Dynasty	3	679	15	45.27
Third Intermediate Period	16	8027	72	111.50
Third Intermediate Period / Late Period	6	1535	17	90.29
Modern	1	7	5	1.40
Total / Average	44	15,132	197	76.80

AREA	Number of samples	Total number of items	Total sample volume (liters)	Density: Items per liter of soil
3	12	3956	61	64.9
6	15	8003	66	121.26
9	17	3173	70	45.3
Total	44	15,132	197	76.8

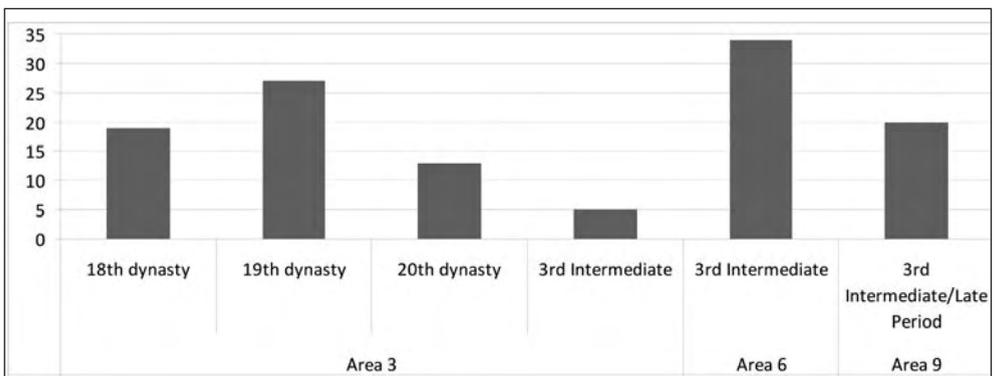


Fig. 1. Taxa diversity by area and period

volume of charred materials, but fewer identifiable species. This is hardly surprising, considering that these samples derived from dumping on a road; they constituted tertiary dumping, thus it was to be expected that the plant material would be far more damaged and less easily identifiable. In the Third Intermediate Period samples there was a significant increase in charred remains, as well as an increase in plant taxa diversity.

The most commonly found species on the site in 2010 [Table 3] are the same as those found in the 2009 season (Malleson 2012) with just some small variation in the overall presences, and as might be anticipated, not only do these species occur in the largest number of samples, they also occur in the highest numbers. The assemblage at Tell el-Retaba is overwhelmingly dominated by emmer wheat chaff and rye grass [Fig. 2]. As would be expected from an assemblage consisting of cereal-crop processing waste and dung used as domestic fuel and fodder, the most common taxa groups present included cereal chaff, dung fragments and the most common cereal weeds — *Lolium* sp. and *Phalaris* sp., the most likely fodder crops — Trifoliae and Viciae tribes, and wet-loving species likely to be common cereal crop weeds — *Eleocharis* sp., *Scirpus* spp. and Polygonaceae. Whilst some of the dung fragments were in fact desiccated specimens found in the ‘stable’ area of the site, these represented only a small proportion of the overall quantity of dung found on the site. Emmer does appear to be the most common cereal, but the chaff of emmer is far harder than that of barley, thus this apparent dominance is likely to be a result of uneven preservation; in fact the quantities of grains of the two cereals

matched each other exactly in the 2010 materials (emmer dominated in 2009).

The discovery of the season in 2010 was a Third Intermediate Period ‘stables.’ Five features from this area (481,

Table 3. Percentage of samples in which taxa remains occurred (for those over 25%)

Taxa	%
<i>Scirpus</i> cf. <i>Praelongatus</i>	31.82%
Root/Tuber	34.09%
Polygonaceae	34.09%
<i>Ficus carica</i> (Common fig)	38.64%
Viciae tribe (Pea/Vetch)	43.18%
<i>Phalaris</i> sp (Canary grass)	54.55%
<i>Scirpus</i> sp (Club rush)	59.09%
Dung fragments	63.64%
<i>Eleocharis</i> sp. (Spike rush)	72.73%
<i>Triticum dicoccum</i> grain (Emmer wheat)	77.27%
<i>Hordeum sativum</i> grain (hulled barley)	79.55%
Trifoliae tribe (Clover)	83.36%
<i>Lolium</i> sp (Ryegrass)	93.18%
<i>Triticum dicoccum</i> chaff (Emmer wheat)	95.45%

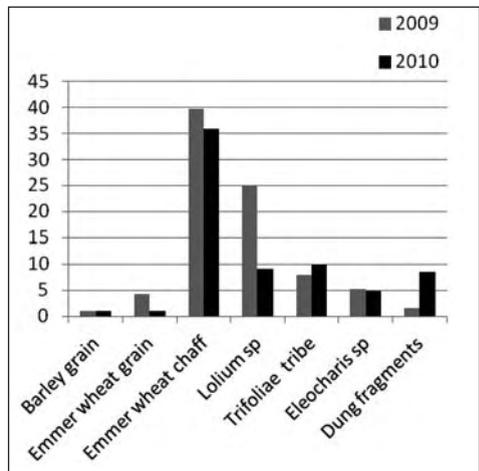


Fig. 2. Density of items per liter of the most prevalent species/elements, 2009 and 2010 seasons

482, 483, 484, 517) were sampled for archaeobotanical remains. Stratigraphic unit 484 contained a very small quantity of material (just 51 identifiable specimens) and is excluded from the graph [Fig. 3]. It has to be noted that this material is charred, with the one exception of some desiccated items of dung (see below), therefore it does not represent uneaten animal fodder. The predominance of cereal chaff and weeds (mainly wild grasses) in these samples matches the overall ratios/

proportions across the site (compare Table 4), highlighting the fact that this material probably represents cereal crop processing waste, burned in rough hearths or dumped in shallow pits in this space after it fell out of use, or perhaps material swept/gathered into natural hollows in the floor during the use of the space. Unit 481 contained only charred dung, unit 482 contained both charred and desiccated dung and unit 483 contained only desiccated dung. The inclusion of

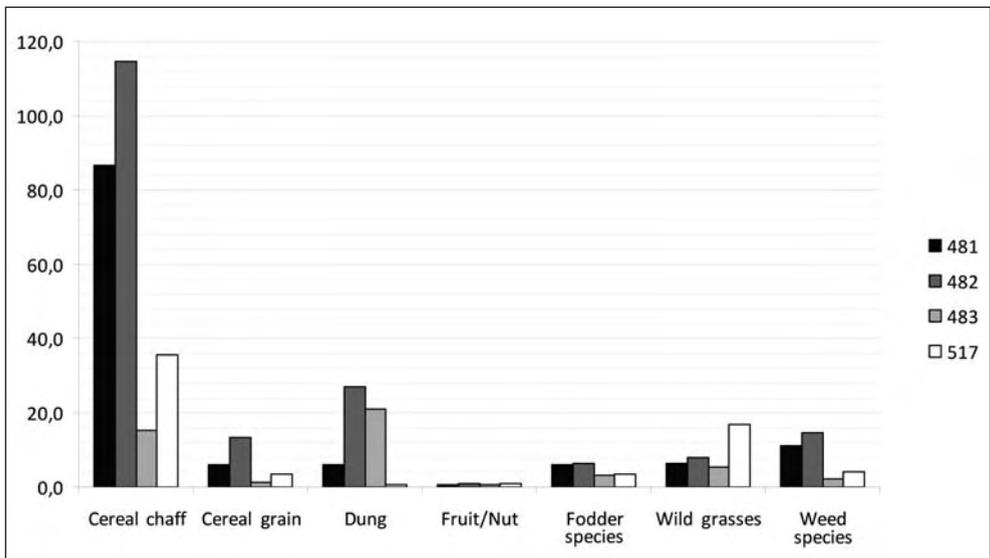


Fig. 3. Items per liter of taxa groups from features in the Third Intermediate Period 'stables'

Table 4. All New Kingdom material. Count of items (#), count as a percentage of the total (%) and items per liter

All NK samples (21 samples) 5563 items	Cereal chaff		Cereal grain		Dung fragments		Potential fodder plants		Wild grasses		Other weed species		Wet-loving species		Other	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
103 liters	2493	44.8	325	5.6	47	0.8	577	10.4	1625	29.2	33	0.6	327	5.9	136	2.4
Average items per liter	24.2		3.2		0.5		5.6		15.8		0.3		3.2		1.3	

desiccated dung in units 482 and 483 suggests that the material collected in these pits while the space was in use as an animal pen/stable. All the dung belongs to sheep/goats.

Also of interest during the 2010 season was the fact that unit 557 (Third Intermediate Period/Late Period) contained 15 specimens of Paniceae tribe seeds — millet. Species of millet are attested in Egypt during the Predynastic and New Kingdom periods (de Vartavan *et alii* 2010: 174–175), so it is not surprising to find it at the site, however, the quantity of seeds found in just this one late feature is of interest and will be investigated further.

Comparisons of the archaeobotanical results to other contemporary materials from sites in Egypt is hampered by:

a) insufficient sampling and analysis of this

category of archaeological remains, and
b) lack of comprehensive publication of results and data.

One site with which comparisons can be drawn is Memphis of the New Kingdom (Murray 2009). As was noted in the 2009 report (Malleson 2012), the quantities of cereal chaff and wet-loving species found in Tell el-Retaba appear to be far in excess of the numbers found in New Kingdom Memphis, however, in comparison to the 2009 results, the numbers of wild grasses found is actually notably lower than Memphis (42 items per liter in 2009, 50 items per liter at Memphis — only 15.8 items per liter in 2010 at Tell el-Retaba). This could be suggestive of (perhaps unsurprisingly) wetter conditions at Tell el-Retaba.

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REFERENCES

Górka, K., Rzepka, S.

2011 Infant burials or infant sacrifices? New discoveries from Tell el-Retaba, *MDAIK* 67, 93–100

- Herold, A.
 1999 Ein Kindergrab im königlichen Marstall?, *Ägypten und Levante* 9, 85–100
 2006 *Streitwagentechnologie in der Ramses-Stadt. Knäufe, Knöpfe und Scheiben aus Stein* [=Die Grabungen des Pelizeus-Museums Hildesheim in Qantir-Pi-Ramesse 4], Mainz am Rhein: Philipp von Zabern
- Malleson, C.
 2012 Tell el-Retaba: archaeobotanical studies [in:] S. Rzepka, J. Hudec, Tell el-Retaba: season 2009, *PAM* 21 (*Research* 2009), 118–123
- Murray, M.A.
 2009 Questions of continuity: fodder and fuel use in Bronze Age Egypt [in:] A.S. Fairbairn, E. Weiss (eds), *From Foragers to Farmers: Papers in Honour of Gordon C. Hillman*, Oxford: Oxbow Press, 254–267
- Naville, E.
 1887 *The Shrine of Saft-El-Henneh and the Land of Goshen (1885)* [=Egypt Exploration Fund Memoir 5], London: Egypt Exploration Society
- Newton, F.G.
 1924 Excavations at el-'Amarnah: 1923–24, *JEA* 10/3–4, 289–298
- Pendlebury, J.D.S.
 1951 *The City of Akhenaten III. The Central City and the Official Quarters. The Excavations at Tell el-Amarna During the Seasons 1926–1927 and 1931–1936*, London: Egypt Exploration Society
- Petrie, W.M.F., Duncan, J.G.
 1906 *Hyksos and Israelite Cities*, London: British School of Archaeology in Egypt
- Pusch, E.B.
 1989 Bericht über die sechste Hauptkampagne in Qantir/Piramesse-Nord. Herbst 1988, *GM* 112, 67–93
- Raedler, C.
 2007 Keramikschaaber aus den Werkstätten der Ramses-Stadt [in:] E.B. Pusch, M. Bietak (eds), *Die Keramik des Grabungsplates Q I, II. Schaaber – Marken – Scherben. Forschungen in der Ramses-Stadt* [=Die Grabungen des Pelizeus-Museums Hildesheim in Qantir-Pi-Ramesse 5], Hildesheim: Gerstenberg, 11–266
- Rzepka, S., Hudec, J., Herbich, T.
 2011 Tell el-Retaba 2008: excavations and geophysical survey, *PAM* 20 (*Research* 2008), 129–145
- Rzepka, S., Wodzińska, A., Malleson, C., Hudec, J., Jarmużek, Ł., Misiewicz, K., Małkowski, W., Bogacki, M.
 2011 New Kingdom and Third Intermediate Period in Tell el-Retaba. Results of the Polish–Slovak Archaeological Mission, seasons 2009–2010, *Ägypten und Levante* 21, 129–184
- (de) Vartavan, C., Arakelyan, A., Asensi Amorós, V.
 2010 *Codex of Ancient Egyptian Plant Remains*, 2nd rev. and ext. ed., London: SAIS Books
- Wodzińska, A.
 2011 Pottery and chronology. Preliminary remarks on ceramic material from Tell el-Retaba [in:] D. Aston, B. Bader, C. Gallorini, P. Nicholson, S. Buckingham (eds), *Under the Potter's Tree. Studies on Ancient Egypt Presented to Janine Bourriau on the Occasion of her 70th Birthday* [=OLA 204], Leuven: Peeters, 1015–1036
 2013 Tell el-Retaba, season 2010: pottery report, *PAM* 22 (*Research* 2010), 96–103