

THE ROYAL HARIM AT MEDINET EL-GHUROB: NEW FIELDWORK (2005-7)

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Introduction

The University of Liverpool Gurob Project is an ongoing study of the urban and funerary remains at the «harim town» of Mer-wer (or Mi-Wer) at the site of Medinet el-Ghurob – hereafter described as Gurob – in the southern Faiyum region¹. The main area of settlement remains at the site can be clearly identified as the remains of an independent establishment relating to royal women (a «harim-palace»), founded in the reign of Thutmose III (1479-1425 BC) and occupied throughout the rest of the 18th Dynasty and presumably also for at least part of the Ramesside period. The inscriptions on stelae, papyri and various other inscribed artefacts from the main buildings at the site repeatedly include the titles of officials connected with the royal harim of Mer-wer. There was evidently a similar establishment at Memphis, but that site has not survived².

The principal aims of the Gurob Project are (1) to produce an accurate 1:1000 map of the site as a whole, combining GIS so as to allow our growing databases of ceramics, small finds and lithics to be mapped onto the visible surface features (2) to create more detailed plans of the main points of archaeological interest in the settlement and cemeteries, (3) to produce a basic modern corpus of pottery at the site, (4) to use satellite photographs, geophysical methods and core-drilling to gain a better understanding of the subsurface material and architectural remains, as well as the relationship between the site of Gurob and its landscape and environment. The vast majority of the ceramic material covering the surface of the site dates to the mid- to late New Kingdom, affording considerable potential to analyse chronological and functional patterns across the site through the study of such material.

¹ The 2005-7 teams comprised sixteen members (from the University of Liverpool, unless stated otherwise): Ian Shaw, Amir Kamal, Claire Malleon, Jan Picton (University College London), Ivor Pridden (University College London), Hannah Pethen, Nadia Mahmoud, Georgina Forrest, Georgia Kekalaki, Robert Billington, Sarah Cooke, Marine Yoyotte (Sorbonne, Paris), Tomasz Herbich (Institute of Archaeology and Ethnology of the Polish Academy of Sciences), Artur Buszek (Polish Centre, Cairo), Dawid Swiech (Jagiellonian University, Cracow), Ashraf el-Senussi (Curator of the Kom Aushim Museum, SCA), as well as our Egyptian SCA inspectors: Mohammed Ibrahim Mohammed (2005), Inas Mohammed Talaat (2006), and Atef Said Hashem (2007), and the two successive directors of the Faiyum branch of the SCA, Dr el-Aidy (2005) and Dr Ahmed Abd-el Aal (2006-7).

² REISER, 1972: 28-31.

In April 2005 we conducted a brief preliminary two-week season of fieldwork at the site, comprising GPS mapping of key features of the site and surface collection of pottery from a small number of localities. The GPS points demonstrated that it would be possible to produce a new map of the site as a whole, using a total station, while the analysis of the pottery indicated that, although the vast majority of the ceramic material dates to the mid- to late New Kingdom, there is considerable potential to analyse chronological and functional patterns across the site through the study of such material. These two approaches have therefore been adopted as key elements in the strategy for exploration and analysis of the site in 2006-7 and in future seasons³.

A short history of previous survey and excavations at Gurob

Gurob has been identified with the town of Mer-wer («great channel/canal»), which was established by Thutmose III and appears to have flourished during the reign of Amenhotep III (1391-1353 BC). During the Ramessid period, the presence of house remains above the palace enclosures suggests that the Thutmosid harim palace phase was succeeded by a later phase of settlement during which the community may have been of a somewhat different character. The site was first excavated by Petrie, but by his standards the work was rather unsatisfactory. During the first season (1888-9) he was simultaneously working at the sites of Hawara and Kahun, and therefore evidently devoting only a limited amount of attention to Gurob⁴. During the second season the work was supervised not by Petrie but by the inexperienced volunteer Hughes-Hughes, therefore the excavation strategy and subsequent publication are still relatively unclear, omitting any published plan of the town itself⁵. In these two seasons, Petrie and his assistants excavated part of the New Kingdom town, including a large building that he identified as a temple, and cemeteries dating to the New Kingdom and the Ptolemaic period (332-30 BC). The subsequent work of Currelly and Loat⁶ and of Brunton and Engelbach⁷ concentrated primarily on the temple and cemeteries, although Loat briefly mentions the remains of a small 18th-dynasty village that may have constituted an early New Kingdom settlement⁸ (perhaps like Lacovara's «South Hill» settlement at Deir el-Ballas)⁹.

In 1905 the town was investigated briefly by the German archaeologist Ludwig Borchardt, who suggested that the main enclosure-wall, contained not a temple – as Petrie had suggested – but a late 18th-Dynasty palace and harim as well as the town itself¹⁰. In

³ For reports on the 2005-6 seasons see Shaw 2007a; 2007b.

⁴ See PETRIE, 1890 and THOMAS, 1981.

⁵ PETRIE, 1891.

⁶ LOAT, 1905.

⁷ BRUNTON and ENGELBACH, 1927.

⁸ Loat, 1904: 1.

⁹ LACOVARA, 1997a: 86.

¹⁰ BORCHARDT, 1911 and WILDUNG, 2001.

1978 Barry Kemp¹¹ synthesized the results of the various excavations to construct an impression of the New Kingdom harim-town which might have superseded the earlier village, but was itself eventually transformed into a small Ramessid town (see fig.1). A stratigraphic section drawing was made by Peter Lacovara¹² in the southern part of the site (on a one-day visit in 1984, shortly after the site had ceased to be a military area). Lacovara argued that this section appeared to confirm that there were two distinct phases of settlement at Gurob: early/mid-18th Dynasty and Ramessid.

Our principal aims in the 2005-7 seasons survey at Gurob have been to seek confirmation of the overall layout and chronology of the settlement area of the site. We are also aiming to gain a better understanding of the duration and nature of settlement at the site, and its relationship with the surrounding landscape. The four basic strands of work at the site are therefore pottery surface collection, lithics collection, topographical survey and geophysical survey.

Topographical and architectural survey

The mapping of the topography and surface features of the site began in 2006 with the creation of an alphanumeric grid across the site, comprising over 150 wooden pegs and 9 iron pegs set at 20-metre intervals along grid-lines oriented east-west (numbering from the number 1 upwards) and north-south (labelled from the letter «a» upwards through the alphabet). Thus the main station point beside the modern gaffir's hut is located at the point J11. The mapping of features, surface collection squares and small finds took place within this grid, and with the total station set up at five different station points. In the 2007 season the grid system was expanded so that the 2006 alphanumeric sequence of grid-points comprises one single major 500x500m gridsquare (no.13) within a sequence of twelve covering the entire site. In addition to the topographical survey using the total station, we have also taken a series of points with a hand-held GPS in order to begin to define the outer edges of the site as a whole, primarily in order to create a future CRM strategy to protect the site from such threats as local agricultural and urban expansion.

The principal archaeological features mapped so far include:

- The visible sections of the possible outer enclosure wall of the town
- The visible sections of the northern palace building
- The circular mud-brick features within the northern palace building (perhaps column emplacements or tree-pits)
- The circular kiln features/depressions in the «glassworking» area to the west of the fort

¹¹ KEMP, 1978: 122-33.

¹² LACOVARA, 1997b: 297, 301, fig.3.

- The previously undetected two-roomed building with large tower in the south-east corner, at the southern end of the site

Within the same map, the locations of small finds (mainly stone tools and fragments of faience vessels) have also been recorded, alongside the positions of pottery surface collection squares and four small planned areas.

Pottery surface survey¹³

During the 2006 season at Gurob we conducted a systematic pottery surface survey, collecting over 26,000 potsherds (total weight *c.* 370 kg, including *c.* 1600 diagnostics) from a number of locations throughout the site. The diagnostic sherds comprised rims, bases, handles, decorated body sherds and lids/«gaming counters», nearly all dating to the New Kingdom (particularly the late 18th Dynasty and 19th Dynasty), and consisting of a variety of types and fabrics. A few late Old Kingdom diagnostic sherds were found in squares I20d and L7a, suggesting that the surface survey may have some potential not only to reveal patterns of New Kingdom urban life at Gurob but also some of the patterning of the pre-New Kingdom cemeteries.

In total, we collected pottery from fourteen 10x10m squares selected from within the grid of 20x20m squares laid out as a preliminary to the topographic and magnetometry surveys. These squares were chosen systematically in order to try to obtain a number of samples from a diverse range of functional areas within the site, e.g. square I20d from the area occupied by the temple of Thutmose III in the south-western sector of the town, square H14a from within the area of the northern palace building, and N7a from within the «glass-working» area to the north-east of the main town and to the west of the so-called «fort».

During the 2007 season at Gurob we continued the surface survey, collecting a further 51,932 potsherds (total weight *c.* 698 kg, including over 3400 diagnostics) from a number of locations throughout the site. In total, pottery was collected from seven 10x10m squares, each selected from within the grid of 20x20m squares laid out as a preliminary to the topographic and magnetometry surveys.

The rationale behind this pottery surface collection strategy is to test the hypothesis that even after extensive excavations in the late 19th and early 20th centuries, together with subsequent severe disturbance during the late 20th-century military use of the site, it should still be possible to utilise the basic spatial patterning of different pottery types and fabrics to reconstruct certain aspects of human activities at the site during the pharaonic period. Figure 2 shows their distribution across the site (2006 collection squares shaded in dark blue and 2007 squares in yellow).

¹³ I am very grateful to Jan Picton, for organizing much of the practical logistical aspects of the pottery surface survey, and to Ashraf el-Senussi for providing a preliminary report on the fabrics and vessel types.

In the 2005 and 2006 seasons, the pottery survey focused on identification of vessel types, fabrics and dating criteria. In general the Gurob pottery dates to the late 18th and 19th Dynasties, with no evidence of later material from the New Kingdom. There were also a few other periods represented in very small quantities, e.g. two sherds dating to the early Roman period, perhaps deriving from a nearby Roman site.

In the 2007 season a more detailed statistical study was carried out, based on the previously assessed vessel types and fabrics, resulting in classification of virtually all of the sherds into three main categories: (1) Nile silt fabric: mostly comprising Nile silt B2, but also a few examples of Nile silt C and E, (2) Egyptian marl ware: mainly marl D, but also some marl B, A2 and A3; and (3) imported ware, consisting of Canaanite amphorae (some of this fabric being tempered with white stone and the rest tempered primarily with some form of dark rock) and Mycenaean pink ware, usually decorated with red and brown lines on pink slip.

The types of vessel identified in the 2005-7 surveys at Gurob mostly comprise domestic types, as would be expected from a settlement site, including the hemispherical bowl, which takes several forms and which is highly indicative chronologically, dating to the second half of the 18th Dynasty and the early 19th Dynasty.

Small finds surface survey

As in the 2005 and 2006 seasons, small finds were collected, and their provenances recorded in three dimensions using a total station. Whereas the small finds from the two previous seasons derived primarily from the pottery collection squares and their immediate vicinity, those from the 2007 were collected over a much wider area. The major reason for this more widespread collection (and a considerably higher overall total – 218 in 2007, as opposed to 42 in 2006) was the conducting of two organised field-walks across both the main town area and the «fort» area to the north-east, in an attempt to obtain a less distorted sense of patterning of the various categories of artefact (see fig.3).

Highlights among the finds were a faience ring bezel bearing the prenomen of Tutankhamun, a blue faience pendant in the form of a Bes (or perhaps Beset) figure, several fragments of travertine vessels, and several fragments of blue faience vessels bearing recognisable traces of black decoration (e.g. the head of a calf). The more even spread of finds provenances has not only allowed us to examine patterns of particular types of find across a wider area but has also demonstrated that some of the perceived patterns in the 2006 survey were dictated by repeated routes across the site taken by field-workers, and the lines of grid-points laid out by the surveying team.

Lithics surface survey¹⁴

Lithics were collected both from the 2007 pottery sampling squares within the palace area and also from squares selected for lithic sampling only within the «glass-working» (or «fort») area. In total, 116 chipped-stone artefacts, 13 ground-stone or heavy duty tools, and 26 pieces of unworked «exotic» stone were collected.

The seven pottery sampling squares only produced 13 chipped stone artefacts and 6 pieces of exotic material. Furthermore, the chipped stone artefacts (one core and 12 flakes) show hardly any signs of core preparation or intense reduction/raw material exploitation. A total of 4 ground stone tools were found (1 pounder, 2 abrader fragments, 1 grinder fragment), and in the same area a diorite pounder was picked up during field walking.

Three squares were selected specifically for lithic sampling. The «glass-working» area was chosen because in the previous season (2006) most of the lithic small finds were collected from here. These squares contained a significantly larger number of artefacts, especially chipped stone. In addition, 20 pieces of exotic material were collected, the majority (12) in square M7d. Eight ground stone tools were found, including one sandstone abrader fragment in M7d and seven tools in M5c (3 pounder/pounder fragments, 1 abrader fragment, 1 rubber fragment, 2 grinder fragments).

Of the 103 chipped stone artefacts collected, 79 were flakes, 11 tools, 8 cores, 3 blades and 2 angular debris. A total of 92 artefacts were made from desert chert, 8 from quarried chert, and 3 of unclassifiable materials. The flakes from all three squares show moderate to strong signs of core preparation and intense reduction/ raw material exploitation. The 8 cores consist of 3 single platform, 2 double platform, 1 unifacial cobble core, the core foot of probably a triple platform core and a heavily fire-damaged core, possibly multi-platform. The following tool types are represented: 3 retouched flakes, 2 side scraper, 1 lateral retouched blade, 1 double lateral retouched blade, 1 notch, 1 bifacial chopper, 1 triangular scraper and 1 body fragment of a bifacial knife.

It should be borne in mind that a significant sampling difference might exist between the lithics from the pottery sampling squares and those from the lithic sampling, as only in the latter squares was the search for lithic artefacts conducted in a systematic manner.

Magnetometry survey

In 2006 Dr Tomasz Herbich undertook the first of two magnetometry surveys, using Fluxgate-type gradiometers (models FM 18 [upgraded to FM36] and FM36, 0.1 nT

¹⁴ I am very grateful to Cordula Werschkun for providing this brief summary of the results of the 2007 lithics survey.

resolution)¹⁵. At Gurob the mud brick used in the New Kingdom architectural features appears to have contained little, if any, silt from the alluvial accumulations of the Nile valley. Nile silt is highly susceptible magnetically due to the iron oxides in it, and its low content gives the bricks a sandy color and a low magnetic susceptibility. The result of this is that the Gurob magnetometry survey map shows walls only where the tops of the ruins are situated immediately below the modern ground surface.

The 2006 survey covered 2.34 ha of the site and focused on two principal areas: (1) the area occupied by the two «palace» buildings, and (2) the area to the north-east of the main town area, where Brunton and Engelbach had excavated a «glass-working» area in their 1920 season. In the case of Area 1, it is possible to discern many of the internal walls of the northern palace building that are not clearly visible on the surface. With regard to Area 2, several presumed glassworking kilns are highly visible in the survey, including one unexcavated example to the west that is only indicated on the surface by a light scattering of slag.

In 2007 the magnetometry survey was extended over a further *c.* 2.5 hectares of the site, focusing once again on two principal areas: (1) the area occupied by the southern town enclosure and the southern ‘palace’ building, and (2) the «glass-working» area. In the case of Area 1, there appear to be some vague traces of the southern enclosure wall of the town. With regard to Area 2, the western portion of the unexcavated glass-working kiln identified in the 2006 survey was recorded.

The limitations of the magnetometry survey method for a reconstruction of the architectural site layout at Gurob seem to derive from the very poor magnetic properties of the material used in sundried brick production.

Nevertheless, the magnetic map of the central enclosure (see fig.4) confirms information about the orthogonal arrangement of the architecture inside the enclosure resulting from Ludwig Borchardt’s plan of the site¹⁶. This is contrary to the observations of Flinders Petrie who recognized an irregular layout here¹⁷.

¹⁵ The measurement grid applied was 10 x 20 m, with points every 0.25 m along measuring lines (20 m long) set 0.5 m apart. The measurement density of this grid (8 measurements per square meter) guaranteed the recording of even small-size features (e.g. walls not more than 20 cm wide). The measurements were carried out in parallel mode, meaning that the magnetic-intensity recording equipment was moved along the measuring lines in one direction only. Sensors were adjusted at the reference point after completing each grid. The described procedures (point density, parallel mode and sensor adjustment) draw out the actual measurement process (parallel mode requires twice as much time as the commonly used zigzag method where the apparatus is moved back and forth along the lines while taking measurements), but they increase substantially the clarity of the resultant geophysical image. Measurement data was processed using Geoplot 3.0 and Surfer 8.0 software. Results were presented as gray-tone maps, with white and black corresponding to extreme measurement values. FM apparatuses by Geoscan Research are capable of tracing changes in ground structure down to a depth of 0.5-2 m, depending on the magnetic susceptibility of the objects.

¹⁶ BORCHARDT, 1911: Tf??.

¹⁷ PETRIE, 1891: Pl.XXV.

Conclusion

In the first three seasons of work at Gurob we have made satisfactory progress on three elements of our overall plan for the site: mapping, pottery surface collection and geophysical survey. As well as mapping some of the basic features of the town site, we have also begun to map the cemetery area in the northern and western parts of the site. We are also now well advanced in producing a fundamental corpus of the characteristic fabrics and forms of pottery vessels at Gurob, which can then be compared with the existing New Kingdom corpora at Amarna, Memphis and other urban sites.

In future seasons of the Gurob Project we will aim to produce detailed plans of individual surface features, such as sections of mud-brick enclosure walls, and we will also continue to map the rest of the town as well as more of the visible features of the various cemeteries. The mixed results obtained in two seasons of magnetometry survey suggest that we should utilise other geophysical methods, such as subsurface radar survey, in order to gain a better idea of the buried remains of both excavated and unexcavated material. A major aspect of the site still to be tackled in a future season is the location and investigation of the 18th-Dynasty workmen's village noted by Loat *c.* 500 m to the south of the main town enclosure¹⁸. It will also be necessary to expand our pottery collection areas over a much wider area of the site, including the cemeteries.

The ultimate aim of the project is to utilise the combined evidence of archaeological, textual and visual materials to build up a clear sense of the nature and function of the New Kingdom royal harim, both as an institution and as a human community located in specific physical surroundings. Gurob currently appears to offer the best set of opportunities to achieve this aim.

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¹⁸ LOAT, 1904: 1; KEMP, 1978: 126.

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Figures

- Figure 1: Satellite photograph of Gurob, showing the outline of the town area, based on a synthesis of the Kemp maps and the 2005-7 Liverpool survey [map courtesy of Claire Malleison].
- Figure 2: Distribution of the pottery collection squares, superimposed on the Gurob satellite photograph [map courtesy of Claire Malleison].
- Figure 3: Distribution of small finds from the 2006-7 surface surveys across the town site at Gurob (the faience objects are highlighted in blue) [map courtesy of Claire Malleison].
- Figure 4: The 2006 and 2007 areas of magnetometry survey in the harim palace area, superimposed on the Gurob satellite photograph [map courtesy of Claire Malleison].