THE GUROB HAREM PALACE PROJECT, SPRING 2012*

By IAN SHAW

Preliminary report on the 2012 season of the Gurob Harem Palace Project, describing a programme of survey and excavation undertaken by the Universities of Liverpool and Copenhagen, and their British and international collaborators, at the site of Medinet el-Gurob in the Faiyum region. The principal tasks accomplished were surface collection and analysis of pottery, topographical survey, field-walking for small finds, and excavation of the following: a second mud brick kiln dating to the New Kingdom, in the so-called 'industrial area' of the site; a 5×7 m square in the area presumed to be the southern half of the palace; and a 5×5 m square in the northern residential area of the site. The project also mapped and studied areas of the Gurob cemetery subject to illicit excavation and looting during 2011–12.

The Gurob Harem Palace Project¹ is a multi-disciplinary Anglo-Danish project dedicated to the study of the urban and funerary remains at the ancient 'harem town' of Mi-wer in the southern Faiyum region.² The basic strands of work at the site in 2012 were topographical and architectural survey, geoarchaeological survey, excavation, pottery surface collection, botanical analysis, and small finds collection and analysis (see fig. 1 for the locations of the 2012 excavation areas, superimposed on the satellite image of the site).

- * Directed by Ian Shaw (Liverpool) and Fredrik Hagen (Copenhagen), the fieldwork at Gurob was funded through the generous support of the Carlsberg Foundation and members of the Gurob Harem Project. The 2012 team consisted of twenty-five members: Ian Shaw (Liverpool), Jan Picton (University College London), Ivor Pridden (University College London), Tine Bagh (Ny Carlsberg Glyptotek, Copenhagen), Anna Hodgkinson (Liverpool), Judith Bunbury (Cambridge), Sarah Doherty (Cardiff), Liz Jones (University College London), Nina Maaranen (Helsinki), Hannah Pethen (Liverpool), Rachael Dann (Copenhagen), Ole Herslund (Copenhagen), Henrik Brahe (Copenhagen), Lena Tambs (Copenhagen), Valentina Gasperini (Bologna), Claire Malleson (Liverpool), Marine Yoyotte (Paris, Sorbonne), Rosa Spencer (Higher Education Academy), Mark Manuel (Durham), Ibrahim Abd'el-Baset Ibrahim (Faiyum), Ashraf el-Senussi (Kom Aushim Museum, SCA), Kamal Helmi Quftawi, Omar Faroukh, and our SCA inspectors Adel Mondy and Ahmed Mohammed Ahmed Ma'awad.
- ¹ Preliminary reports on the work so far (2005–11): I. Shaw, 'Gurob: The Key to Unlocking an Egyptian Harem?', Current World Archaeology 23 (2007), 12–19; I. Shaw, 'A Royal Harem Town of the New Kingdom: New Fieldwork at Medinet el-Gurob', in C. Ziegler (ed.), Queens of Egypt (Paris, 2008), 104–15; I. Shaw, 'The Royal Harim at Medinet el-Ghurob: New Fieldwork (2005–7)', in L. M. de Araujo and J. das Candeas Sales (eds), Second Young Egyptologists' Conference, Lisbon, 2006 (Lisbon, 2010), 256–64; I. Shaw, 'New Fieldwork at the Medinet el-Gurob New Kingdom Settlement: Investigating a Harem Palace Town in the Faiyum (Summary of the 2009–10 Seasons)', in G. A. Belova (ed.), Achievements and Problems of Modern Egyptology: Proceedings of the International Conference held in Moscow on September 29–October 2, 2009 (Moscow, 2011), 348–64; I. Shaw, 'Seeking the Ramesside Royal Harem: New Fieldwork at Medinet el-Gurob', in M. Collier and S. Snape (eds), Ramesside Studies in Honour of Kenneth Kitchen (Bolton, 2011), 453–63.
- ² We are very grateful to the Egyptian Minister of State for Antiquities, Mohammed Ibrahim, and the General Secretary of the Permanent Committee, Mustafa Amin, as well as Ahmed Abd-el Aal (the director of the Faiyum branch of the SCA), Mohammed Ismail in the SCA Documentation Centre, Cairo, Hany Abu el-Azam at the SCA Abbasia office, and our inspectors Adel Mondy and Ahmed Mohammed Ahmed Ma'awad for their assistance with our work at Gurob in 2012.

Archaeological mapping and topographical survey (Liz Jones and Hannah Pethen)

During the 2012 season at Gurob, Hannah Pethen continued the topographical survey that had begun in 2011. This season a robotic total station was available which required only one person to operate it, enabling faster and more efficient work than the machine used in 2011. Over 10 days 0.148 km² were surveyed, compared with 0.143 km² surveyed in 10 days in 2011. The main aim of the Gurob topographical survey is to build a three-dimensional model of the topography of the site in a geographic information system (GIS). The survey data are downloaded from the total station and uploaded into a GIS. The GIS uses an algorithm to interpolate the height of the ground between

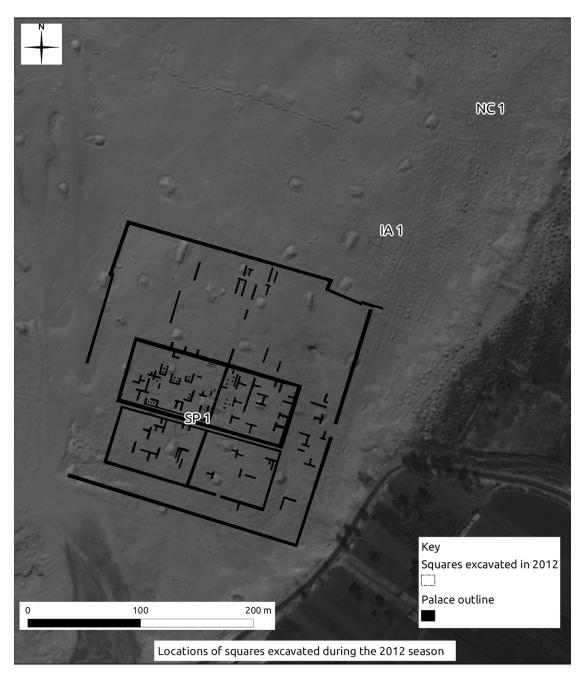


Fig. 1. Locations of the 2012 excavation squares, superimposed on the satellite image of Gurob.

the individual points recorded in the survey, and so builds a model of the site. A digital elevation model (DEM) of the area was constructed from the 2011 data, and showed promising results. This 2011 data has now been integrated with the 2012 data in an updated digital elevation model, created using a triangulated irregular network (TIN) in Quantum GIS (QGIS).

This DEM can also be modelled as a landscape, using a technique known as 'hillshade'. This method reveals the natural slopes and heights of the site in a way the human eye is more familiar with. In fig. 2, the light is shown as if coming from a 45° angle with an azimuth of 315. The heights of the DEM have been exaggerated to 3 times their actual size in order to provide a clearer image. Fig. 2 shows several archaeological features very clearly. South of the DEM, the north-east corner, and north and east walls, of the northern Palace building appear very clearly. These are still visible on the ground and were surveyed in greater detail than the typical 5 m resolution. The enclosure wall of

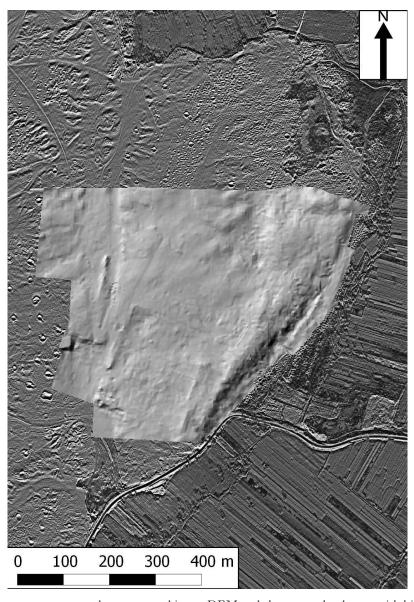


Fig. 2. The 2011–12 survey data converted into a DEM and shown as a landscape with hill shading. The landscape is exaggerated to 3 times the height of the original data, in order to provide greater clarity in the model.

the Palace complex is also clearly defined, even though this was only surveyed at the typical 5 m interval. Other notable features are the ridge along the eastern edge of the site, and the *wadi* to the west.

The next stage of work involves integrating the new DEM of the site into a larger, lower resolution, model of the surrounding landscape derived from satellite imagery. Information from auger boring around the site and across the wider region will be used to provide information on past ground levels and relict channels of the Bahr Yussef, which will be incorporated into the model in order to investigate the ancient topography and the position of Gurob in relation to the ancient water management landscape of the Faiyum.

Excavation of the 'industrial area': IA1 (Anna Hodgkinson)

The excavation area IA1 (fig. 3) is located c.40 m to the north-east of the palace at Gurob, just west of the ridge forming the eastern boundary of the main site. The remains excavated in this area during the 2012 fieldwork season suggest that a workshop was located here. The surface of the square shows a large amount of material relating to high-temperature industries, such as partly vitrified fired and unfired mud brick.

During the Gurob 2010 season some excavation work was undertaken on one of the 'anomalies' discovered in the course of magnetometry survey in 2006–7, and this proved to be the remains of a kiln.³ The structure excavated in 2010 is here labelled 'Kiln 1'. A pottery surface collection was undertaken in the area surrounding Kiln 1 in 2009, and again in 2012, after the excavation square IA1 had been staked out. The 2012 surface collection excluded the 2010 excavation area, as this was formed from our own backfill. The area was initially set out as a 10×10 m square, but the southern baulk from the 2010 excavations was chosen as the southern limit of excavation, and the initial square extended to the east, forming a trapezoidal excavation area measuring 12.1 m (north), 9.9 m (east), 11.85 m (south), and 4.18 m (west).

After the backfill from Kiln I had been removed, the areas to the north and east were cleaned. The ancient horizon, the workshop phase, was covered only by a thin layer of surface material [5000], which was a mainly wind-borne deposit, overlying the whole square, with a thickness of 0.05–0.3 m. Deposit [5000] overlay a layer of very hard and undulating natural sands [5007], into which all archaeological features had been cut. Deposit [5007] surrounded the kilns to the north and slopes down c.0.2 m towards the eastern third of IAI, where it has been given the context number [5017]. These deposits, which both show natural bedrock close to the surface, appear to have been the ancient horizon at the time of the workshop's functioning.

Kiln I was fully excavated during the 2012 season, during the course of which the second half of the inner fill was removed, and the internal base was reached. No entrance or stoke-hole was revealed for this structure, but a possible sub-rectangular cut, [5035] (not shown on plan), abutting the north wall of Kiln I, c.0.25 m wide, makes the location of a stoke-hole on this side of the structure more plausible. Kiln I was probably used for the production of pottery. The structure, which measures c.2.8 m in its outer diameter, had a thickness of one layer of secondarily fired mud brick, and a height of seven courses, c.1.10 m in height.

³ See Shaw, in Collier and Snape (eds), Ramesside Studies, 463.

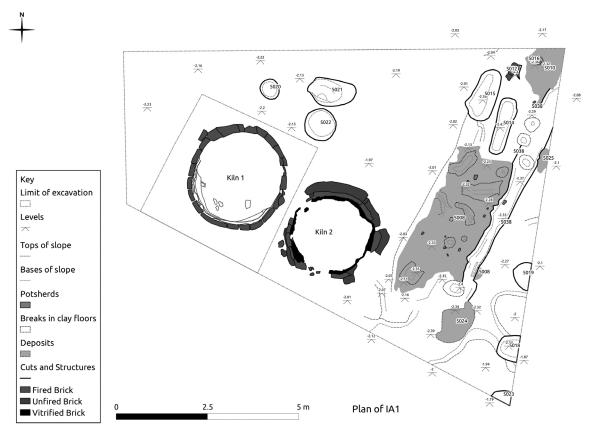


Fig. 3. Excavation area IA1 at Gurob.

Surface cleaning to the east of Kiln I revealed a second structure partly cleaned during the 2010 excavation, correlating with the second circular anomaly shown by the magnetometry survey. This second kiln structure, here labelled Kiln 2 (structure [5005]), has an internal diameter of only 2 m, but measures c.2.4 m in its outer diameter. The wall construction of this structure differs from that of Kiln I, in that a layer of unfired, but baked mud brick forms the outer perimeter of the structure, measuring between 0.2 and 0.3 m in thickness. This layer was presumably packed around the kiln in order to provide stability and insulation for the structure. The main part of the structure appeared to be one layer of mud brick, but these were highly vitrified and have expanded towards the inside. A layer of dark-green vitrification covered the whole of the inside surface of the structure, curving towards the inside from the top of the kiln, indicating that the kiln was originally domed. The excavation of Kiln 2 commenced during the 2012 season, but could not be completed, and only its very top fill [5037] was removed, this still being mainly wind-borne, sandy material, very similar to [5000].

Three pits were found more or less directly to the north of Kiln 1. Pit [5020] was circular in plan and had a diameter of 0.5 m; its sides were vertical and it was c.0.4 m in depth. Pit [5020] was located c.0.8 m to the west of pits [5021] (north) and [5022] (south). Each of the latter had a floor of natural pebbles at a depth of c.0.15-0.2 m below the surface. All three pits were filled with surface material [5000], but their relationship to the kilns is uncertain. While pit [5020], with its vertical sides, may have been an emplacement for a vessel, such as a tall jar, pits [5021] and [5022] may have used their pebble floors for drainage.

The excavation area slopes down to a lower level to the east, forming a partition measuring 1.9 m to the north and 4.6 m to the south in width. This area, around a layer of natural sand [5017], incorporates a number of features probably belonging to the workshop, having functioned at the same time as Kilns 1 and 2. A layer of clay [5008], between 0.01 and 0.05 m in thickness, lies to the southwest of this partition, at a distance less than 0.5 m east of Kiln 2. This layer is irregular in shape and slopes upwards, following the line of the natural sands to the north and the south-west; it includes potsherds and some ancient fingerprints are visible in one place. It is very likely that this surface functioned as a clay preparation area in connection with the possible pottery industry in this area, represented by Kiln 1. Layer [5008] measures a maximum of 3.4×1.6 m.

In the northeastern corner of the excavation area lay another clay surface [5010], very similar in appearance to [5008], and measuring 1.5 × 0.95 m. Its function is not clear; while its plan was also irregular, the clay surface itself did not undulate as much as [5008]. It is therefore possible that this layer represented an actual floor layer, possibly belonging to the same workshop phase, and not another clay preparation area. Another short stretch of clay floor, [5025], was found against the eastern baulk of IA1, but only 0.68 × 0.2 m of its extent was excavated. To the south-east of IA1 a very thin, light grey patch of clay, [5024], was found: the nature of this layer is not certain, but it may have been an older clay preparation area or a dump for clay. The north-western corner of the eastern part of IA1 included a very badly preserved, short stretch of wall, [5012], one course of mud bricks high and 3 bricks long (c.o.5 m), with one course of mortar on top. A very shallow linear cut, [5038], with a concave base, and a depth of only c.o.o5 m, runs north-east to south-west through the eastern part of IA1. This cut may represent a foundation cut of a wall, which belongs to the house to the west of the 'Fort', and can also be seen on the satellite image. A series of further cuts can be seen cutting into a natural layer [5012]; to the north, sub-oval cuts [5014] and [5015], both filled with wind-borne surface material [5000] and both measuring $c.1.5 \times 0.4$ m, were found. While [5015] was apparently cut into the slope separating the eastern area of IA1 from the kiln area, the top and base of [5014] lay c.0.1 m deeper. In addition, three possible pits, which were not fully excavated, and which were also filled with surface material [5000], were located in the south-eastern corner of IA1. The purpose of these features is not clear.

The pottery found within the fill of Kiln I dates mainly from the first half of the Eighteenth Dynasty to the first half of the Nineteenth Dynasty, namely the main occupational phase of Gurob. However, with the bulk of the material being windborne surface material, this date cannot be certainly applied to the kilns and workshop area itself. The excavation of IAI was carefully backfilled at the end of the season for future work in this area.

Excavation of the northern edge of the South Palace enclosure (Ole Herslund, Marine Yoyotte, and Rachael Dann)

The square defined as SP1 (fig. 4) was laid out in the South Palace area, based on GPR survey in 2010 indicating a likely series of connected mud brick walls. Initially surface collection of pottery and small finds was undertaken (in addition to the surface collection undertaken in this area during the 2011 season). The 10×10 m square was

next subdivided into four 5×5 m quadrants, so as to make the square more manageable for excavations. Initially we chose to focus on the northeastern quadrant (SP1C).

After ground-surface levels had been measured with a total station, the layer of topsoil [3000] was removed with turias and shovels. Beneath this topsoil was a sandy area [3001], a dark-brownish area [3002], and a large sandy area [3003] which later turned out to cover the full extent of the 5×5 m quadrant (SP1C). Here and there, we found a dark-brownish clay which turned out to be the fill of pits dug deep into the sandy matrix [3003]. These relatively deep pits were defined as contexts [3004–3008].

The fill of the pits consisted of a rather compact clayey soil with high pebble inclusions, and some presumed modern bricks in a sandy yellowish colour. In addition to the bricks, some potsherds were found as well as a few interesting small finds (a small Bes pendant, a ram pendant, a presumed ring-bezel bearing the name 'Ramesses', and a wooden amulet representing the goddess Taweret, see fig. 5) along with occasional fragments of wood, bones, and charcoal. However, these pits also contained modern refuse such as plastic bags, soap wraps, tuna tins, pieces of cloth from military uniforms, and the fragments of a newspaper dating to 1971, providing a *terminus post quem* for the pits going down into the sandy matrix. After excavating these pits stratigraphically, only the sandy context defined as [3003] was encountered throughout the extent of the SP1C quadrant.

During the second day of excavation at SP1, the area was extended northwards by adding a 2×5 m extension to SP1C, labelled SP2D. Here, only topsoil was removed after collecting surface material and making pre-excavation photos. No further work was done in this area. Since excavation of SP1C was ended prematurely, we were unable to undertake end-of-excavation levels, photographs, or plans. We estimate that we reached a depth of c.1.5 m below surface level.

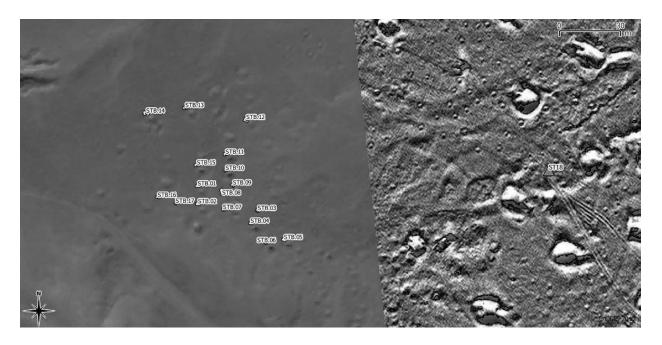


Fig. 4. Detailed plot of the looted South Tombs area: STB1-17, superimposed on the satellite image of Gurob.

Processing of material from the looted tombs: STB1-17 (Mark Manuel, Rosa Spencer, and Rachael Dann)

Excavations in the Southern Tombs area of the site primarily focussed on the processing of remnant spoil heaps from the illegal excavation of two shaft tombs (labelled STB1 and STB2). Both of these tombs had been vertically excavated by the looters to a depth of over 4.3 m, and the removed spoil deposited on the surface surrounding the entrance. Several more aborted or unsuccessful attempts at illegal activity were identifiable in the surrounding area, in the form of shallow pits with small corresponding spoil heaps on the surface (STB3-17). Four small pits were even illegally excavated nocturnally during the course of our investigations, but there was no discernible disruption to our activities.

Each spoil heap was assigned a different context number, in order to monitor patterns of deposition, and to try to keep human remains and artefacts from the different tombs separate, although eventually it became clear that there was significant overlap between the spoil of the two tombs and beyond. Context [6000=6001] surrounded STB1 on the eastern and southern flank of the tomb. A large deposit of textile was visible at the northern edge of the spoil heap, and partially buried by it. This was excavated and the textiles extracted largely intact. The spoil heap also contained large fragments of a painted linen, delaminated cartonnage mummy cover (with red, blue, and white decoration and hieroglyphs), pieces of painted plaster in the same colour scheme and also red/black/beige, and also large pieces of coffin board held together with wooden nails and dowels (see section on small finds, below, for discussion of the date of the cartonnage and other material from STB1-2). The coffin boards were painted orange or beige or red, and possibly represent more than one coffin. One coffin panel seemed to be decorated with very eroded hieroglyphs. Several fragments of small rodent bone were also recovered from this spoil, perhaps indicating post-burial activity within the tomb.

Context [6002] surrounded the northern, western, and southern flanks of STB2. Less material was present on the surface of the spoil, but again textiles, human bone, both wooden and pottery coffin fragments, and painted plaster were recovered from the site. Interestingly, more lower limb bones were found than anything else with left femora predominating. A minimum of four adults and three subadults were found (4 adult left femora and 3 subadult frontal bones).

Surface analysis and chance encounters identified human remains in five spoil heaps from the smaller aborted illegal activities. One of these spoil heaps (context [6004], around STB3) proved to contain the greatest volume of material, even though it did not appear to be associated with an actual shaft tomb. This material was excavated and sieved, in the same manner as the spoil around STB1 and STB2. A faience scarab and five small faience beads were recovered.

Contexts [6003] (STB18, located south of STB3), [6006] (on a small spoil heap west of STB1 and STB2, but not associated with a pit), and [6007] (STB4, south of STB3) all appear to represent single-event depositions of parts of burials (often a hand or torso encased in textile) extracted from STB1 and STB2. This suggests that looters were removing these parts of the body to a 'safe' distance from their activities in order to identify any rings, amulets, or necklaces within the burial wrappings. Context [6005]

was slightly different in that it contained the partial remains of an infant, although again the motivation for relocating the burial may have been the same. Initial analysis of the remains from STB1 and STB2 reveal that there is, collectively, a minimum of 7 adults including one male and one female over 30 years of age, and 4 subadults with a range of ages. Little pathology was observed.

Pottery (Valentina Gasperini, Ashraf el-Senussi, Sarah Doherty, Tine Bagh, Lena Tambs, and Nina Maaranen)

During the 2012 season a new method of recording pottery was introduced, based on the prior creation of an interim corpus that included all principal shapes of pottery already discovered and studied during the archaeological work at Gurob from 2005 to 2011. In 2012 almost 200 new shapes of pottery were identified, mainly jars (103 new types), bowls (38 new types) and amphorae (28 new types). 26 Canaanite sherds were also recorded, confirming that Gurob had significant importation of foreign goods, particularly from the Canaanite area (modern day Lebanon and Palestine). Ten further Mycenaean (Greek Mainland) and two Cypriot sherds were identified. All the Mycenaean sherds were from stirrup jars, while the Cypriot ones were all 'red lustrous wheel-made ware', possibly dating to the first half of the Eighteenth Dynasty. The preliminary dating of the pottery processed during this season follows the general range of chronology of the site, from the first half of the Eighteenth Dynasty to the Ramesside Period, except for 3 pieces datable to the Old Kingdom (probably Meidum bowls) and 1 rim sherd of a Roman cooking pot, possibly dated to the first century AD. The highest percentage of pottery belongs to area IA1, followed by SP1, NC1, and STB.

Small finds (Jan Picton and Tine Bagh)

In the 2012 season, small finds were either collected from the surface or excavated from the three excavation squares and the group of looted tombs at the southwestern edge of the site (STB1-17). The surface finds had their provenances recorded in three dimensions using the total station, while those from the excavations were recorded primarily in terms of context (since many were found through sieving). In total 143 small finds were recorded (although one specific small-find number actually comprises three sacks of textile fragments, while another comprises several hundred pieces of plaster coffin fragments, and a third denotes the fragments of a painted linen delaminated cartonnage mummy cover, deriving from the looted tomb STB1 (discussed above in the section on the looted Southern Tombs area). The cartonnage almost certainly dates to the Third Intermediate Period, while the pottery can be securely dated to the Eighteenth Dynasty, suggesting later re-use of a New Kingdom tomb. The inscription on the centre panel is currently being studied. As in previous seasons, the majority of other finds were small broken pieces of faience, especially fragments of faience vessels. This season 12 rough clay figurines were recorded, of which 5 can be securely identified as the type known as 'woman on a bed' figurines, numerous examples of which have been found at the site since 2005. The stone fragments this season included granite and quartzite, and a number of limestone architectural or sculptural features associated with the looted tombs STB1-3. The finds from the SP1 excavation area in the South Palace included a wooden amulet representing the goddess Taweret (see fig. 5).



Fig. 5. Figurine/amulet of the hippopotamus goddess Taweret from the southern palace (SP1) excavation area.

Geoarchaeology (Judith Bunbury)

Geoarchaeological work in 2012 focussed on the edge of the cultivation to the east of the site, to explore the area now identified as a possible New Kingdom channel and to identify the location of the harbour described for Gurob in such documents as P. Wilbour and the Victory Stele of Piankh.⁴ Work by Earl⁵ has shown that former lakes in the Abusir area were often associated with date palm groves since the date requires at least 6 m of damp soil to grow. Similarly, field patterns and date groves in the Gurob area indicate the locations of two previous channels, marked A and B on the plan in fig. 6. Both of these have now been investigated using an Eijkelkamp hand auger following the methods employed by Bunbury at other Ancient Egyptian sites.⁶ Core ASII⁷ intersected fine-grained channel deposits containing a trace of pottery. However there were insufficient sherds to indicate a New Kingdom harbour or channel. Channel A was intersected by core ASo3⁸ and contained 4.5 m of fine-grained channel deposits with abundant New Kingdom sherds. The limit to the east—west extent of this feature is provided by ASo2⁹ encountering flood plain silt. It is therefore possible to provisionally interpret this feature as a channel along the desert edge. Channel A,

⁴ See M. Yoyotte, *Le 'harem' royal dans l'Egypte ancienne: Enquête philologique, archéologique et prosopographique* (PhD thesis, Université Paris IV-Sorbonne; Paris, 2012), 137–44.

⁵ See Erin Earl, Cambridge University, unpublished MSc project.

⁶ See, for instance, J. M. Bunbury, A. Graham, and M. A. Hunter, 'Stratigraphic Landscape Analysis: Charting the Holocene Movements of the Nile at Karnak through Ancient Egyptian Time', *Geoarchaeology* 23 (2008), 35¹–73.

⁷ See I. Shaw, Prelimary Report to the SCA on Archaeological Survey Undertaken at Medinet el-Gurob, 2010 (forthcoming).

⁸ See I. Shaw, Prelimary Report to the SCA on Archaeological Survey Undertaken at Medinet el-Gurob, 2009 (forthcoming).

⁹ See Shaw, Prelimary Report 2009.

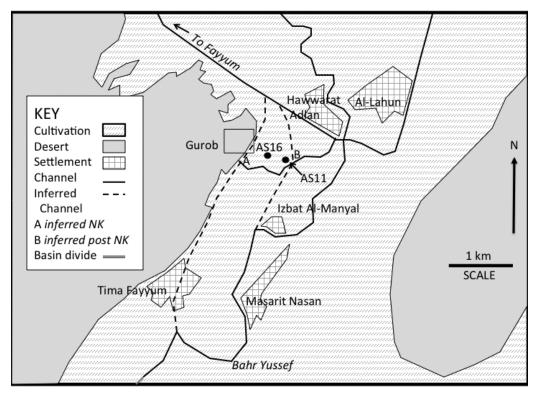


Fig. 6. Regional view of the setting of the site of the Gurob Harem Palace showing the site, a recent basin divide, current channels in the area, and two inferred former channels marked A and B. Auger sites AS11 and AS16 in the cultivation are also shown. The area of the inset map below is shown with a black rectangle.

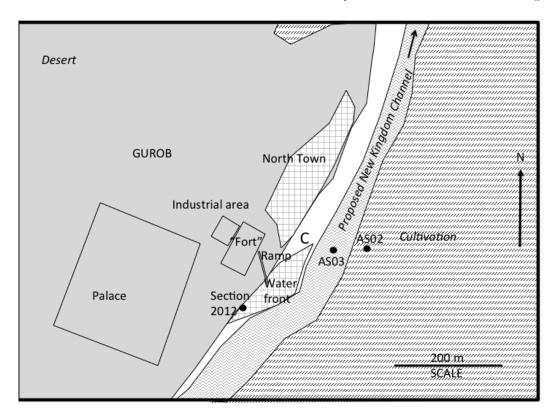


Fig. 7. Local area of Gurob showing currently proposed New Kingdom waterway adjacent to the eastern edge of the site, and the newly proposed waterfront area that may represent the harbour of the palace. Point C is the northern limit of sherd-rich mud.

thought to have been diverted from the Bahr Yussef at Tima Fayyum, seems the most likely candidate for a water-body at Gurob during the New Kingdom.

Inspection of the numerous pits made into the sediments at the desert edge reveals that there are abundant sherds in the area marked on the plan as 'waterfront' (see fig. 7) and extending as far north as point C. To the south, core ASo5 encountered desert edge deposits without sherds, providing a southerly limit for the feature. Away from this area, silts and sands have also been excavated by the *sebakhin*, but there are no sherds incorporated into the material. When combined with the evidence for a body of water in ASo3,¹⁰ we may propose that this area served as a point of embarkation for the Palace.

Summary

In the eighth season of work at Gurob we made good progress on several elements of our overall long-term strategy for the site: mapping, pottery surface collection, geoarchaeological interpretation, and excavation of selected features. We are also now further advanced in producing a fundamental corpus of the characteristic fabrics and forms of pottery vessels at Gurob. Furthermore, we have begun to study the botanical aspects of the archaeological record within the ancient town. Although we were once again obliged to devote some of our resources to the documenting of recently looted tombs at Gurob, this season we were pleased to note that illegal activity on the site has certainly diminished. We are grateful to our SCA colleagues for working with the local police to backfill many of last year's most damaging illicit excavations.

¹⁰ See Shaw, Prelimary Report 2009.