

**The Harbour of Naukratis, 'Mistress of Ships'  
The [British Museum Naukratis Project](#)'s fifth fieldwork season at Kom Ge'if, Egypt  
(Beheira MSA site no.100253)  
April–May 2016**

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Naukratis was the earliest, and for a period the only, Greek port in Egypt. Established in the late 7th century BC as a base for Greek (and Cypriot) traders and the port of the royal Pharaonic city of Sais, it was an important hub for trade and cross-cultural exchange long before the foundation of Alexandria. Previous fieldwork by Petrie and Gardner (1884–1886), Hogarth (1899–1903) and Coulson and Leonard (1977–1983: Coulson 1996, Leonard 1997, 2001) concentrated on the central areas of the town, and further research is clearly required to fully understand this very important archaeological site.

Since 2012, the British Museum has been engaged in new fieldwork at Naukratis, generously supported by the Honor Frost Foundation, the British Academy (Reckitt Fund), the Institute of Classical Studies, London, the Michela Schiff Giorgini foundation and Christian Levett and the Mougins Museum of Classical Art. This work is part of the wider British Museum research project '[Naukratis: Greeks in Egypt](#)', which examines ancient Naukratis in the context of Greek-Egyptian relations (cf. [Villing et al. 2013–2015](#)).

Four previous seasons at the site (October 2012, April 2013, April–May 2014 and April–May 2015) encompassed geophysical prospection, the creation of a topographic survey map using GPS technology, surface pottery collection, excavation and geological work with a hand auger ([Thomas and Villing 2013](#); in press; [Thomas 2014](#); 2015).

In 2016, a fifth season was conducted, during which a grant from the Honor Frost Foundation enabled the team to dedicate resources specifically towards investigating the site's role and development as a port: its waterfront and harbour area, its relation to the river and canal networks, and the infrastructure that enabled Naukratis to operate effectively as a major entrepôt of the ancient world. The area of the site's waterfront proved extremely productive, yielding important new insights into maritime activities and trade at Naukratis. This year, for the first time, structures relating to the Archaic and Classical harbour of Naukratis were revealed. Additional funding from the Egypt Exploration Society, Bryn Mawr College and the Michela Schiff Giorgini foundation, made it possible to also continue the auger survey and excavations in the area of the Greek sanctuaries in the north and the Egyptian temple enclosure in the south. This made 2016 our most extensive season yet.

Fieldwork was carried out at Naukratis over a period of four weeks in May 2016 by a team consisting of field director Dr Ross Thomas (British Museum), deputy director Dr Alexandra Villing (British Museum), geoarchaeologist Mr Ben Pennington (Southampton University), and area supervisors Dr Astrid Lindenlauf and Ms Nicole Colosimo (both Bryn Mawr College), Jeffrey Spencer (formerly British Museum) Mr Edwin de Vries (Amsterdam), Ms Eleanor Maw (formerly British School at Rome) and Mr Ashley Pooley (Oxford Archaeology). Finds processing was carried out by Ms Camille Acosta (London) and Dr Giorgos Bourogiannis (Medelhavsmuseet, Stockholm), whilst faunal remains were studied by Dr Louise Bertini (American University in Cairo) and finds processing and conservation work undertaken by Dr Wendy Reade (University of Sydney). Ahmad Rezk El Sayed Al Arabi, Waleed Abo Zeid Soliman Nosir, Bassem Mahmoud Morsi Abd El Gawad, Ahmed Abd El Mawla Mohamed Abd El Gawad and Radwa Sami Mohamed El Faramawy (all Ministry of State for Antiquities [MSA] inspectorate, Damanhur, Egypt) each supervised areas and assisted with the auger survey and finds processing. The generous and proficient help of the MSA inspectors, the guards at the site in Kom Ge'if, and the collaboration of the farmers of the villages around Naukratis contributed greatly to the success of this season.

Excavations were focused in three areas: 1) the area of the Hellenion and the sanctuary of the Dioskouroi, in the northern part of the settlement; 2) the river front to the west of the site; and 3) the south-western part of the sanctuary precinct of Amun Ra (area of the 'South Mound'). The excavations were complemented by a magnetometry survey of key areas not accessible in previous seasons. In addition, Ben Pennington continued his programme of auger cores aimed at investigating the ancient environment of Naukratis, specifically (the relationship between) the ancient topography of the settlement, the old Canopic branch of the Nile (contemporary with the site) and an older Nile channel to the east. The main objectives of the fifth season were to:

1. Excavate the river bank of the merchant harbour of ancient Naukratis (in the western part of the settlement) to reveal the form and function of installations, and evidence for the mechanics of trade and the demography of the inhabitants of Naukratis. Already in previous seasons this area had yielded the by-products of river front activities: the maintenance of ships, the dumping of commercial refuse (trade amphora), and the deposition of domestic rubbish (domestic pottery and bone dumps).
2. Excavate areas in the northern part of the dried-up lake so as to better understand the Hellenion (a major sacred and administrative complex of the Greeks) and its relationship with the neighbouring sanctuary of the Dioskouroi. Excavations in 2014 and 2015 confirmed what had been suggested by studying the published plans of Petrie, Garner and Hogarth: that this area provides rich evidence for investigating the earliest periods of the site.
3. Excavate in the area of the 'South Mound' to find both the internal and external edges of the enclosure wall of the great Egyptian sanctuary of Amun-Ra (the so-called 'Great Temenos'), and conduct complementary auger drilling and magnetometry in this area, to understand the depth, date and construction methods of the architectural structures.
4. Undertake geological auger drills within and to the south and east of the site to provide further detail on the ancient topography and full extent of the settlement and its relationship with a hypothesised older channel of the Canopic Nile to the east.
5. Continue our magnetometry geophysical survey within areas not accessible in previous seasons, with a particular focus on the sanctuary of Amun Ra and the river front.
6. Instruct MSA inspectors (Ahmad Rezk El Sayed Al Arabi, Waleed Abo Zeid Soliman Nosir, Bassem Mahmoud Morsi Abd El Gawad, Ahmed Abd El Mawla Mohamed Abd El Gawad and Radwa Sami Mohamed El Faramawy) in the use of the survey equipment, excavation supervising, recording and finds processing (Figures 3 & 5).

All trenches, structures, features, auger holes and spot finds were located on the local grid using a total station, provided by Penny Wilson (Durham University). This local grid had been established in previous seasons using two RTK GPS units (Leica GX1230), which ensures that all survey data are fully geo-referenced and facilitates the incorporation of other survey methodologies into a real-world co-ordinate system. Archival research by the [British Museum's Naukratis project](#) was integrated into the ArcGIS maps used onsite, allowing our selection of trench areas to be informed by the integrated stratigraphic and plan data (when recorded) of the excavations by Petrie, Gardner, Hogarth, Leonard and Coulson. In this way we were able to predict the location of structures and specific phases of occupation on the site.

### **Geological auger study (Ben Pennington)**

An Eijkelkamp hand auger was used to recover subsurface material from fourteen points (surveyed via total station) located around the site. The interpretation of the paleo-landscape was accomplished through the description and analysis of the reconstructed sedimentary sequences. MSA inspectors and local workmen were trained and employed to drill the auger (for a description of the methodology see the 2014 report). Pottery sherds were found in all auger cores (425 sherds), and were removed and bagged for identification. All identifiable sherds could be dated between the Saite and Roman periods, and so are within the known parameters of the chronology of the site (c.630BC – AD650). This often provided a detailed chronology for the stratigraphy observed. The study further informs our understanding of the evolution of the landscape to the east of the ancient settlement, and also

the sediments upon which Naukratis was founded. An auger was also drilled by the southern 'Great Temenos' wall which revealed five metres of archaeological stratigraphy.

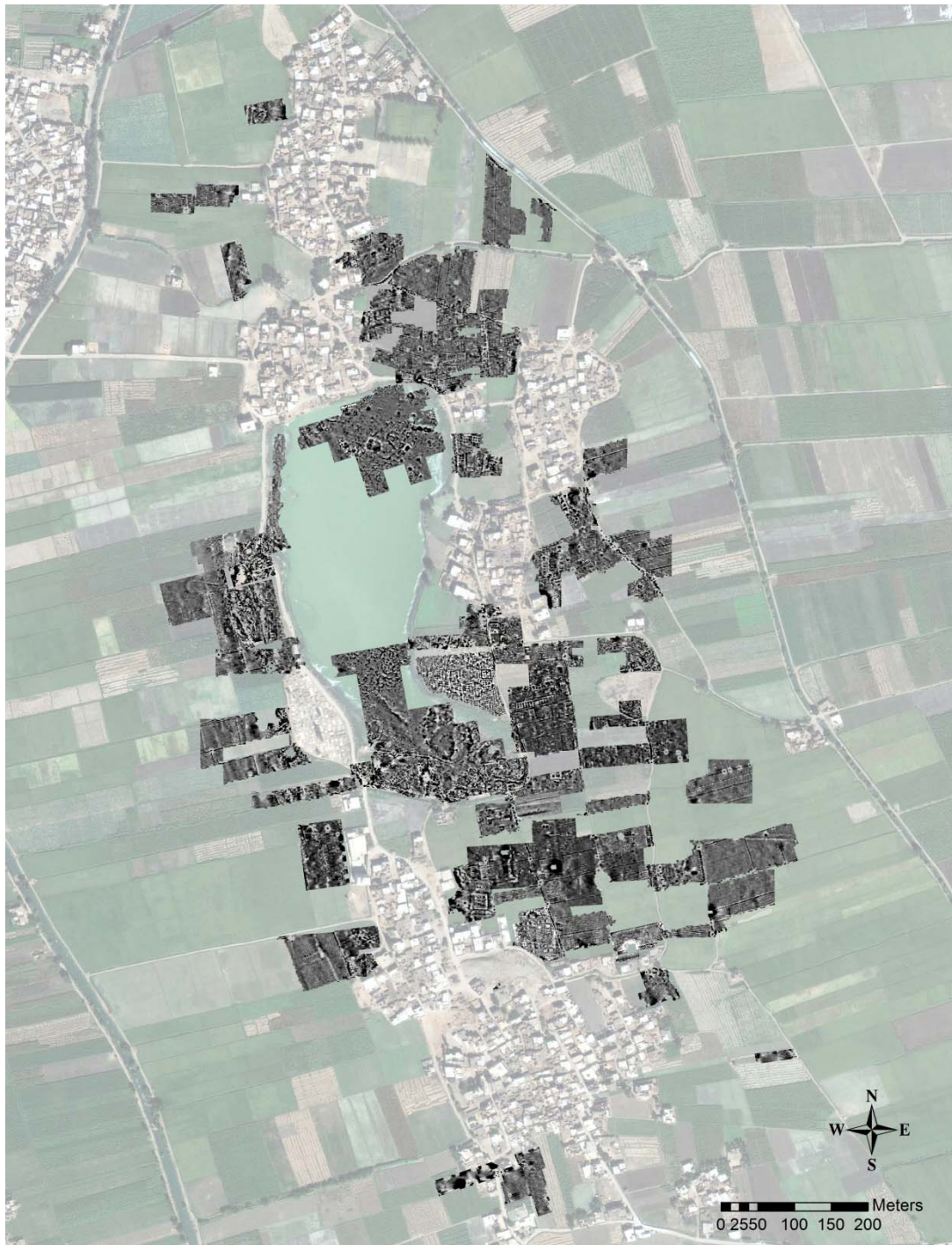
The geological auger study conducted by geoarchaeologist Ben Pennington in 2016 (Figures 2, 3) greatly enhances our understanding of the evolution of the site and the interface between the river and the town, further adding to our knowledge obtained in previous seasons, outlined in our [2014 and 2015 reports](#) (see also Pennington & Thomas 2016).

A preliminary analysis of the data collected suggests the presence of an early river channel to the east of the site, which ceased to flow long before Naukratis was founded (in c.630–620BC). Before the settlement was occupied, the Canopic branch of the Nile had moved to the west side of Naukratis. Subsequently (contemporaneous with the occupation of the site c.630BC – AD650) it appears that this whole area to the east of the Canopic river branch was relatively homogenous, flat, and terrestrial. Part of the southern area of Naukratis may have been founded on the preserved levee sediments of the old river channel.

### **Magnetometry** (Eleanor Maw)

The Naukratis project used a Bartington Grad601-2 Dual Array Twin Fluxgate Gradiometer (magnetometer), provided by Penny Wilson (Durham University), to survey the available fields. This instrumentation has proved very successful on the sedimentary geology of the Nile Delta. The equipment specifications, methodology and data processing are explained in previous reports ([2014](#), see also [Thomas and Villing 2013](#)). The survey was supervised by Eleanor Maw. Initial processing was undertaken by Eleanor Maw using Geoplot 3.0 software. Detailed post-processing for final publication will be undertaken by Kris Strutt (Southampton University), who will incorporate into the complete set of all previous data from the results of the British Museum survey at the site. The MSA inspectors were shown how to set up and use the equipment. They were also shown preliminary results and explained the principles of the instrumentation. The map included here (Figure 1) shows this season's results alongside those of previous seasons. A number of new structures belong to a range of Late Period, Ptolemaic and Roman buildings. The majority are domestic, with new tower houses discovered in the eastern part of the settlement. In addition, we were able to reveal sections of the massive wall enclosing the sanctuary of Amun Ra (the 'Great Temenos') and the large casemate structure within it that had previously been excavated by Petrie. The identification of the casemate structure is significant, for it confirms that the casemate structure is well preserved, of exactly the same dimensions and construction as recorded by Petrie in 1884-5 ([Petrie 1886](#)). It also confirms problems with the survey method used by Petrie as the casemate structure is not where it should be in relation to the rest of Naukratis that he surveyed in 1884-5. Further areas of the Byzantine, Roman, Ptolemaic and Late Period river bank were revealed within the magnetometry results in the western part of the 'lake' and the fields immediately to the west of the lake.





**Figure 1.** Satellite image of Kom Gei'f with all magnetometry results from the 2012, 2013, 2014 and 2016 seasons (Satellite image © 2013 Google. Satellite image taken on 9 July 2011, modified with data from *The Naukratis Project* © British Museum).

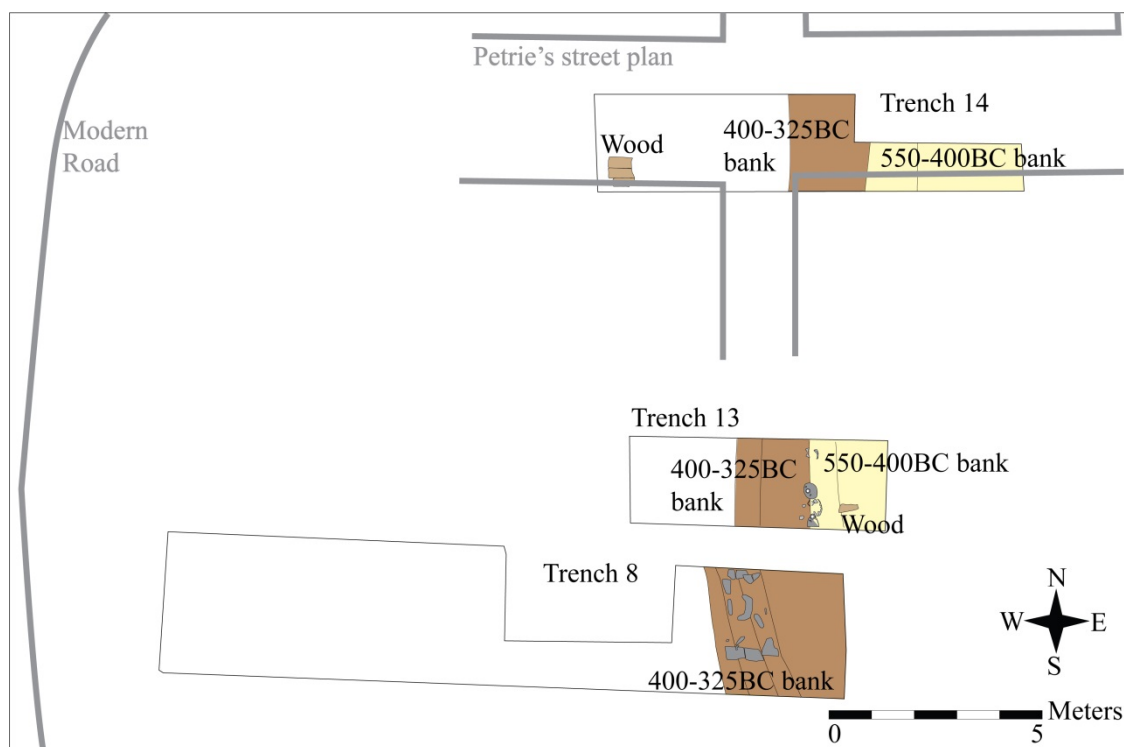
### **Excavations in the west** (Edwin de Vries and Ashley Pooley)

In the (north-) western part of the site, at the western edge of the (mostly) dried-up 'lake' area, two trenches were opened. Based on auger cores and geophysics undertaken in previous seasons and the excavation of Trench 8 in 2015, this area was expected to reveal sequences of the river bank's harbour area during the Late Period (ca. 630BC – 330BC). Trench 13 and Trench 14 were laid out at an east-west alignment 6x2 meters just north of last season's Trench 8. Trench 14 was extended 4m to the east and reached a maximum depth of 2.2m; Trench 13 reached a maximum depth of 2m.

The sequence of structures and deposits from the three trenches along the river bank (Trench 8, 13 and 14) excavated in 2015 and 2016 on the river front can now be divided into 9

phases, further simplified into five main periods of activity: the building of a bank; its repair; silting up; Ptolemaic construction; and modern excavation. Land reclamation in c.550-500BC (Phase B) was achieved by dumping large quantities of ceramic and other refuse over the muddy foreshore bank and organic river sand deposits (Phase A), flattening reeds that were growing there. This created a rough but firm bank made up of household rubbish (mostly pottery and animal bone), commercial waste (transport amphorae, jars and ballast stones) and construction rubble (tiles and architectural elements). In c.450-400BC this bank was used, eroded and repaired (Phase C) by sinking four Greek amphorae into the muddy sand and backfilling with further pottery and rubble, thus creating a compact surface and steeply sloping bank. Then followed a sequence of Persian Period deposits as the bank was used, abutted by silted up river deposits (Phase D). Over the period c.400-325BC the river bank rapidly began to silt up (Phase E and F). Further domestic rubbish, but also Egyptian figurines (possibly deposited in rituals), ballast stones and fragments of ship plank from the maintenance of incoming ships were deposited against the bank during the late 5<sup>th</sup> and early 4<sup>th</sup> centuries BC. Ship remains found alongside pottery dated between 480/450BC to 380/325BC include plank fragments with mortices cut, including a scarf end, tenons with dowel holes drilled and treenails. Over this period the rough bank was consolidated by further rubble and the surface occasionally burnt (presumably when the Nile was low). The silting-up continued until c.250BC.

The top of the natural silting-up sequence of Phase F was cut by subsequent human activities (Phases G through I). In c.150-30BC, a Ptolemaic pottery dump (Phase G) was added to extend the settlement over reclaimed land. Whilst late Ptolemaic in date, Phase G contains earlier residual material, including abundant early Ptolemaic finds of the 3<sup>rd</sup> century BC. The plan of the streets and buildings above this pottery hard-core rubble were recorded by Petrie. They must post-date c.150-30BC (Phase H) and could be a combination of domestic houses and warehouses. These structures were completely destroyed by subsequent digging that occurred between Petrie's excavations in 1884-6 and Hogarth's excavations that started in 1898 (when these structures were no longer visible). The spoil heaps of Petrie's and possibly also Hogarth's work are represented in the final Phase I, which includes all phases of material from the occupation of Naukratis as well as Ottoman period pottery.



**Figure 2.** Plan showing the location of 2016 Trenches 13 and 14 and 2015 Trench 8. (© The Naukratis Project, British Museum).





**Figure 3.** Trenches 13 (right) and 14 (left) being surveyed by Waleed Abo Zeid Soliman Nosir. View looking east (© The Naukratis Project, British Museum).

### **Excavations in the north** (Astrid Lindenlauf, Nicole Colosimo)

Excavations in 2016 focused on a small area in the north of the dried-up lake (Figures 4, 5). The objective was to expand the excavations undertaken in 2014 (Trenches 1, 2 and 3) and 2015 (Trenches 4, 5, 6, 7, 9 and 10). Specifically, in 2016, we opened up the area between Trench 1, Trench 10 and Trench 4, primarily to better understand the relationship between the large enclosure wall of the Hellenion (in Trench 1) and what appears to be the threshold for the Hellenion gateway found within Trench 4 (previously misinterpreted in 2015 as the damaged core of the wall). Trenches 1, 4 and 10 were reopened, whilst Trench 10 was extended to the east (1.5x2m) and south (1x2.5m). New areas were opened nearby: Trench 11 (2x6m) to the north of Trench 10, Trench 12 (3x2m) between Trench 4 and Trench 1, and Trench 15 (1x3m, see Figure 4, 5). Excavations proceeded down to sterile soil (basal mud) at between 1.75 and 1.85m below the surface.

Our second objective was to reveal the relationship between the entrance to the Hellenion and the platform partially exposed last season within Trench 10 and to fully excavate this platform and the deposits immediately surrounding it. A dedicatory inscription to the Dioskouroi found in this deposit in 2015 had suggested that the platform and the votive offerings found there were associated with the cult of the Dioskouroi (the sons of Zeus, Kastor and Polydeukes). Whilst the large mud-brick ‘temenos wall’ of the Hellenion had been discovered and partly excavated by David Hogarth in 1899, the gateway and altar platform were missed by him.

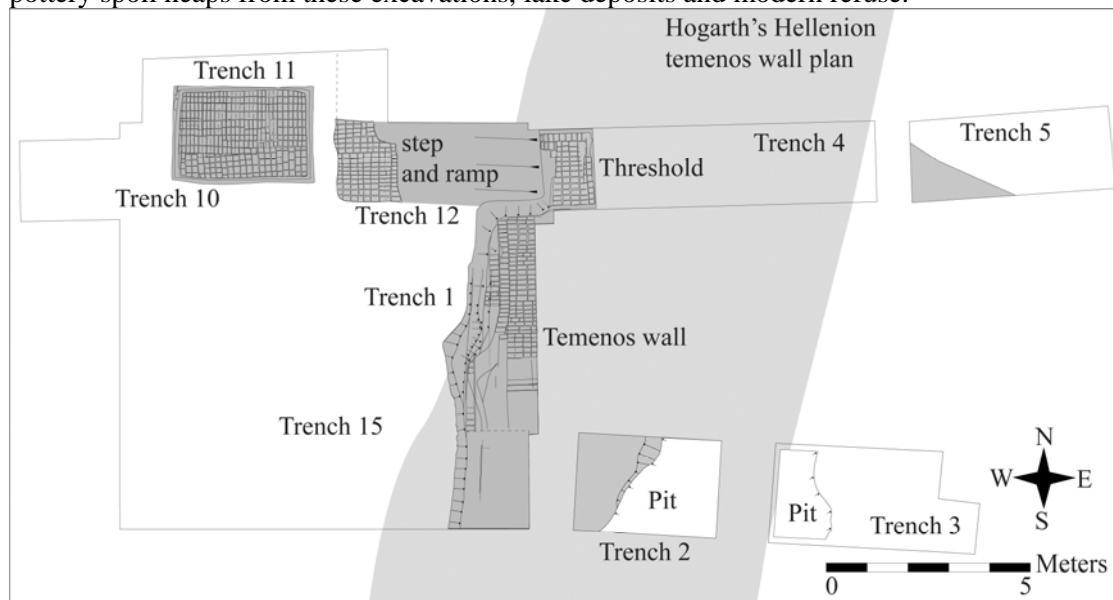
The excavations, as in previous seasons, revealed rich archaeological deposits containing a sequence of c.620BC-500BC pottery of local Egyptian as well as Levantine, Cypriot, mainland Greek and East Greek origin. Within this area fragmentary remains of animal bones (particularly jaw and cranium fragments from sheep/goat, cattle and pig) and shells were also found. The c. 0.3m thick layer above was disturbed by 19<sup>th</sup> century excavations. This sequence of deposits and structures rested directly on the virgin ‘basal mud’ sediments about 1.3 meters below the surface.

The trenches revealed that both the platform and the Hellenion gateway and wall were built on top of a prepared surface over the uneven natural ‘basal mud’ about 1.75m below the surface. The platform in the area of the Dioskouroi sanctuary measures 3.3 x 2.3m in plan. In

front of the gateway a second platform (over 1.7 x 2.8m) or step was created, which was connected to the threshold with a ramp of trampled mud material. Thus in the late 7<sup>th</sup> and early 6<sup>th</sup> century BC one could step on to a mudbrick paved surface next to the platform before proceeding up a ramp towards the threshold and enter the Hellenion precinct. The Dioskouroi platform and Hellenion gateway were in contemporary use and almost certainly contemporary foundations, being both built directly on top of the sterile 'basal mud'. All brickwork for both sanctuaries was made of the same size bricks (c. 16cm x 11cm x 10cm, much smaller than the bricks used for the 'Great Temenos'; see below). The Dioskouroi platform (possibly the base for an altar?) was, however, erected on a slightly lower level than the Hellenion. It appears that during the 6<sup>th</sup> century BC the focus of the Dioskouroi cult shifted westwards, judging from Petrie's and Gardner's finds of the (later) Dioskouroi temple and temenos wall.

The area around the platform and gateway appear to have been maintained and left relatively clean of finds by those that used the area in the 6<sup>th</sup> century BC. The few objects that were found here tend to be small and much abraded. Exceptions include ashy lenses and areas within the deposits abutting the east and southern part of the platform, which may be evidence of burnt offerings (deposited around 570-530BC). Two further votive inscriptions to the Dioskouroi, of early 6<sup>th</sup> century BC date, were found just south of the platform. Both were inscribed in Ionian Greek dialect onto locally produced Nile silt mugs of Ionian shape, made specifically by and for Greeks.

The stratigraphical sequence encountered in the twelve trenches (Trenches N1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 and 15) excavated in the northern area between 2014 and 2016 can now be explained as nine phases that occurred over four different periods: construction and use, modification and use, major reconstruction, and 19<sup>th</sup> to early 20<sup>th</sup> century excavation. The foundations for the Hellenion, its temenos wall, gate threshold, stepped (?) ramp and a platform for the Dioskouroi sanctuary were all constructed over sterile soil in c.610-575BC (Phase A). The area was used and underwent a series of minor modification in c.600-530BC (Phases B C, D and E). A series of major reconstruction phases occurred in c.550-500BC (Phases F, G and H), significantly raising the ground level in this area. Finally the sequence was cut by Hogarth's excavations in the area between 1898 and 1903 (Phase I), covered with pottery spoil heaps from these excavations, lake deposits and modern refuse.



**Figure 4.** Plan of the northern area of Kom Ge'if lake basin, showing the location of the 2016 trenches within the Dioskouroi and Hellenion sanctuaries. Plan shows 2016 Trenches 11, 12 and 15 in relation to re-opened Trenches 1, 4 and 10 and previous 2014 and 2015 Trenches 2, 3 and 5. (© The Naukratis Project, British Museum).



**Figure 5.** Trenches 10, 12, 4 and 1. The Dioskouroi platform is in the foreground (left), the Hellenion temenos wall and gateway in the background (middle and right). View looking east. (© The Naukratis Project, British Museum).

### **Excavations in the south** (Jeffrey Spencer and Eleanor Maw)

The area of the ‘Great Temenos’ of Amun Ra (Figure 6) was investigated successively by Petrie, Hogarth and Leonard. However, neither Hogarth, nor Leonard could reconcile earlier plans with their own. Archaeological investigations in 2013 of the Temenos’ south western corner by Penny Wilson, today preserved in the low hill known as the ‘South Mound’, had involved cleaning back sections of the exposed mudbrick ‘tell’ and excavating three small trenches immediately to the south (Trenches S1, S2 and S3). This was intended to determine the nature and potential of the surviving archaeology in the area. Wilson’s work revealed a large mudbrick wall containing (sparse) Late Period pottery, which was built over (and cut into) during the Late Ptolemaic and Early Roman periods. However, no outer face of this earlier wall was found. The objective in 2016 was to determine the extent and nature of this massive feature.

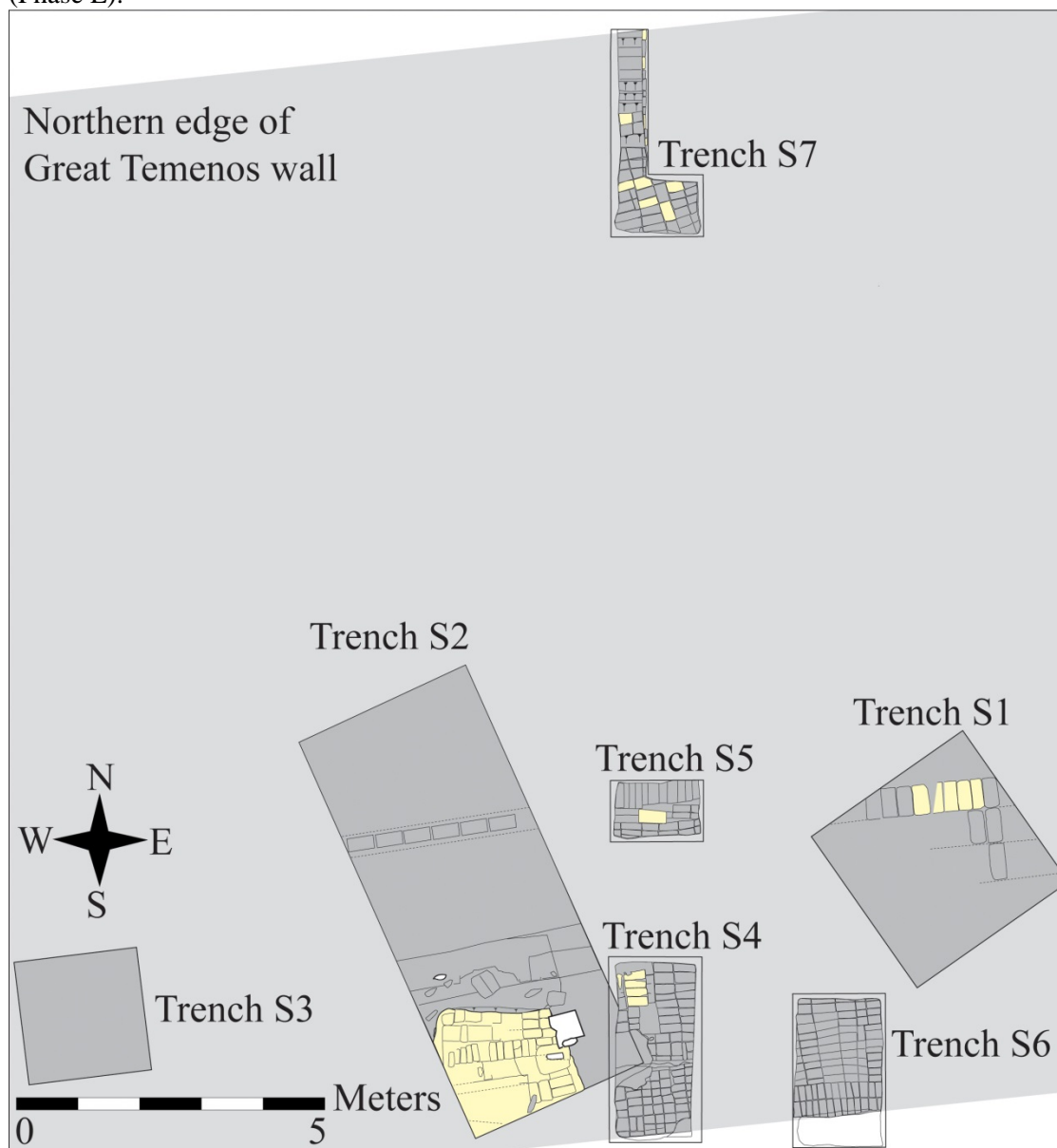
The excavation of four small trenches (Trenches S4, 1.5x3m; S5, 1x1.5m; S6, 5x2.5m and S7, 3x1.5m) to the south of the highest point of the ‘South Mound’ revealed a massive mudbrick wall just 0.15 to 0.20m below the surface. Excavations reached a maximum of 0.65m depth in this area. Trenches S4 and S6 revealed the southern face of a large wall, whilst Trench S5 confirms this massive wall was continuing to the north. The northern face of the wall was exposed in Trench S7, excavated into the mound face. The wall in this area was preserved over 1.6m higher than within trenches S4, S5 and S6. This confirmed that the massive feature was a wall 17.85 meters wide and running east-west. This wall was constructed from mud-bricks with highly variable dimensions. Older (Late Period) sections of the wall had large alternating mud and sand bricks, c.36x17x12cm in dimension. Later (Ptolemaic and Roman) repairs were made of brick with smaller dimensions. The original bricks were thus considerably larger than the bricks used within the Hellenion and Dioskouroi sanctuaries (above). Late Period sherds consistent with a Saite date (c.630-525BC, although some are of generic types that continued to be used in the subsequent Persian period) were discovered in this wall by Leonard (in the 1970s-80s), Wilson (in 2012) and in an auger drilled in 2016 by Ben Pennington (A44). Augers undertaken in 2013 and 2016 confirm that this massive wall was built on top of a rubble and pottery foundation containing finds of the Saite



period. Almost six meters of this wall are preserved beneath the level of the trenches, and 1.6 meters of it is exposed above this level at the northern edge, so up to 7.6 meters of the temenos wall is preserved in this area.

Now that the internal and external edge of the Temenos wall has been identified and dated, it is clear that the majority of the ‘South Mound’ contains structures built within the corner of the ‘Great Temenos’ of Amun Ra that must relate to activity within the sanctuary. These structures were partly excavated by Leonard between 1980 and 1983, who revealed a sequence of occupation from the 26th Dynasty to at least the 1st century AD. The majority of phases uncovered by Leonard relate to the mid-late Ptolemaic period.

The seven trenches (Trenches S1, S2, S3, S4, S5, S6 and S7) excavated in the ‘South Mound’ in 2013 and 2016 can now be explained as a sequence of five phases that occurred over at least four different periods. They comprise the construction of the Temenos wall in c.630-500BC (Phase A), followed by pits cut into and a mud-brick house built at the southern edge of the temenos wall (Phases B to D) in 120BC-AD100, followed by modern deposits (Phase E).



**Figure 6.** Plan of the ‘South Mound’, showing the location of 2016 Trenches S4, S5, S6 and S7 (red) and 2013 Trenches S1, S2 and S3. The large wall surrounding the precinct of Amun-Ra is marked in grey. Mud-bricks are marked in dark grey, sand-brick is in yellow. (© The Naukratis Project, British Museum).

**Faunal remains** (Louise Bertini)

Faunal remains studied from the 2016 season come from two very different, but chronologically overlapping, areas in the north (Trenches 10, 11, 12, 15, dated late 7<sup>th</sup> to 6<sup>th</sup> century BC) and the west (Trenches 13 and 14, dated late 6<sup>th</sup> to mid-4<sup>th</sup> century BC). The material is in a very good condition, probably because most of the assemblage comes from a riverfront context, where the damp muddy environment protected the bone from erosion.

The assemblage included 1,134 elements comprising mammals, birds, fish and molluscs. The taxa are overwhelmingly dominated by the pig, followed by sheep/goat, and cattle. Three different species of catfish were identified, along with Nile perch and tilapia. The preliminary analysis suggests an overwhelming reliance on the keeping of domestic herd animals (stock keeping c.75.5%), especially the pig, along with sheep/goat, and cattle. Although it is of secondary importance, a mixed fishing regime (13.8%) incorporated the fishing of both shallow water/floodplain fish including both the *clarias* catfish and the tilapia, along with deep-water fish such as the Nile Perch and *synodontis* catfish, which was complemented by the collection of molluscs (10%). Fowling was of minor importance (0.7%). Future study will allow comparisons to be made between the different areas of the site, so as to investigate different cultural and dumping and religious practices in the site's sanctuaries, commercial and habitation quarters.

**Pottery and small finds** (Alexandra Villing, Camille Acosta, Giorgos Bourogiannis, Wendy Reade, Ross Thomas)

Pottery and small finds were recovered from all trenches and auger cores. Over 16,804 objects were retrieved in 2016, bringing the total from 2012-2016 to 28,924 excluding faunal and floral samples. These comprise mainly pottery, but also include architectural elements, figurines and lamps. 425 micro-sherds were found in the auger holes drilled by Ben Pennington, helping to date the level of occupation layers across different areas of the settlement. The remaining material came from excavations in the river front (Trenches 13 and 14), the Hellenion and Dioskouroi sanctuaries (Trenches 11, 12, 15 and re-opened and extended Trenches 1, 4 and 10) and the 'South Mound' area (Trenches S4, S5, S6, S7).

All indicator sherds (rims, bases, handles) were identified and quantified. All body sherds from stratified deposits were also quantified. The majority of sherds were identified and quantified on site (and left there), whilst c.1,100 significant pieces were retained for detailed study. These were catalogued and photographed, and the majority (725) were also drawn by the finds team (Alexandra Villing, Camille Acosta, Wendy Reade and Giorgos Bourogiannis assisted by Edwin DeVries and Ross Thomas). A small selection were registered by the Egyptian authorities, the rest remaining in local magazines for future study.

The area of the river front was densely packed with finds, including some 13,876 objects in 2016 (a total of 18,458 including 2015). The finds consisted of a sequence of 6<sup>th</sup> to 4<sup>th</sup> century BC pottery and lamp fragments underneath a 2<sup>nd</sup> to 1<sup>st</sup> century BC pottery dump. This was covered by the pottery dumps produced by the 19<sup>th</sup> century and subsequent excavations at Naukratis, containing residual material from c.630BC to c.AD650, with some Ottoman period and modern pottery.

The vast majority were repetitive pottery sherds, over 6000 per trench. The dense 6<sup>th</sup> to 4<sup>th</sup> century BC deposits next to the bank comprise commercial waste (47-51% transport amphora sherds from all phases), domestic rubbish (13% cooking wares, as well as utility, storage, fine ware vessels and faunal remains) and architectural rubble (terracotta tile and stone fragments, including one carved piece from an acroterion; Figure 7). The majority of these finds were deposited through three processes: within a rubble hard-core construction; probably through accidental breakage on the river front; or through intentional (regular) domestic tipping.

A small number of objects may be linked to ritual activities undertaken on the river front. The waterlogged deposits of the 5<sup>th</sup> and early 4<sup>th</sup> centuries BC revealed further Egyptian terracotta and limestone figurines to add to the assemblage from 2015. These may have been intentionally deposited as a part of Egyptian religious rituals, or have been deposited within the domestic dumps outlined above. A bone amulet was a single chance find of jewellery from this area. Evidence of maritime activities came in the form of further ballast stones and several

fragments of worked wood. Two mortise cut ship plank fragments (other plank fragments without clear traces of mortices were also found) and a treenail (a sort of wooden nail) were found in 2016, to add to the larger fragment found last year. Clearly ships were being worked on in this area or nearby during the 5<sup>th</sup> century BC. The construction technique of mortise, tenon and dowel fixings is a well-known Greek technology. As suggested last year, this is further confirmation that the port of Naukratis received and maintained Greek seagoing ships during this period, and that the Canopic branch must have been navigable for such ships for at least part of the year.

The large number of finds (13,876 pottery fragments) dating to between 600/550BC and the Ptolemaic period are split between domestic rubbish and commercial waste. For this reason they are a useful record of the changing patterns of trade and domestic practices of the town's inhabitants. A variety of Egyptian and Greek style cooking pots, Cypriot and Egyptian mortaria, bread platters and other forms used in the preparation and serving of food were found within this assemblage, varieties representing the varied consumption practices of the diverse communities living at Naukratis. The assemblage included significant quantities of Attic black glaze fine ware (Figure 7), red figure and black figure pottery fragments, as well as some lamps. Both East Greek grey wares and Etruscan bucchero were also discovered, alongside a range of South and North Ionian and other East Greek table wares. One of the finest fragments comes from an Attic black figure lip-cup depicting Herakles wrestling a lion (Figure 7). Some of the pottery and lamp fragments preserve Greek inscriptions, although rarely more than a single character.

The import trade of goods contained within transport amphorae is well represented here. With pine pitch preserved on the majority of amphora sherds (due to the anaerobic nature of the deposit), wine appears to have been the dominant import, although olive oil was also imported. Amphorae were imported from mainland Greece, the Greek islands, Ionia, the Levant and Cyprus.

In the north, 2,452 objects were retrieved from Greek sanctuary deposits dating to c.610-500BC, that were encountered above sterile layers and covered by 19<sup>th</sup> century excavation pottery dumps (containing residual material from c.630BC to c.AD650, with some Ottoman period and modern pottery). This brings the total sample from the eleven trenches excavated in this area to 8885 objects (just over 800 per trench).

The 19<sup>th</sup> century excavation pottery dumps comprise commercial waste (43% transport amphora) and much domestic waste. They include some 7th to 5th century BC material, but, like last season, consisted predominantly of 4th century BC to 7th century AD objects, with some modern material also. Within the sealed archaeological deposits under these disturbed layers, an assemblage of late 7<sup>th</sup> to 6<sup>th</sup> century BC finds was found in Trenches 11, 12, 15 and extensions of Trench 10. These were contemporary and similar in variety to what was found last year in Trench 1. Imports were identified from Athens, Corinth, Cyprus, Lebanon, Miletos, Chios, Samos, Thasos, Lesbos, Rhodes and other Aegean and Ionian (East Greek) areas. The c.610-500BC deposits from the Greek sanctuaries have a very low proportion of transport amphora (13%), the area having (unsurprisingly) sparse commercial waste. As found previously, a large proportion (83%) of the ceramics were Egyptian.

Some of the material is characteristic for Greek religious and dining practices and was found alongside animal bones (well attested in 2014, 2015 and also indicated in Petrie's and Hogarth's fieldwork). This included two 6<sup>th</sup> century BC mugs from the southern extension of Trench 10 with votive inscriptions to the Dioskouroi (Figure 7).

The small trenches excavated in the south western corner of the sanctuary precinct of Amun-Ra revealed just 51 objects in 2016 (a total of 132 total for all 7 trenches in this area including the 2013 excavations). The scarcity of finds was largely due to the excavations uncovering, almost immediately below the surface, clean mud-bricks used to build the Late Period enclosure wall with only very rare pottery inclusions. There were few preserved remains of subsequent late Ptolemaic and early Roman phases in this area. A limited range of mid to late Ptolemaic cooking and tableware forms, all locally produced, were found within domestic deposits within pit fills and against the temenos wall. A fragment of a Bes mask, also mid-Ptolemaic in date, had pink paint still preserved around the eye (Figure 7).





**Figure 7.** Objects from the 2016 season. From the top left: 5<sup>th</sup> -4<sup>th</sup> century BC Hathoric figure N16.13.2.6; 5<sup>th</sup> century BC Chian amphora stamped with sphinx N16.14.7.23; 6<sup>th</sup> -5<sup>th</sup> century BC Limestone architectural decoration N16.13.24.11; 5<sup>th</sup> century BC limestone Hathoric figure in shrine N16.14.1.13; 6<sup>th</sup> century BC Attic black figure cup depicting Herakles wrestling a lion N16.14.13.1; 5<sup>th</sup> century BC polished bone amulet N16.14.12.25; 6<sup>th</sup> century BC locally produced mugs with dedications to the Dioskouroi N16.10S.3.1 and N16.10S.3.2; 2<sup>nd</sup> century BC fragment of Bes mask S16.7.1.5. (© The Naukratis Project, British Museum).

### **Summary**

The 2016 season has produced significant new data on the layout and development of ancient Naukratis, the religious and economic life of its inhabitants, and its local environment. Excavations were undertaken within the earliest phases of the Greek sanctuary complex of the Hellenion and the adjacent sanctuary of the Dioskouroi. These excavations revealed parts of the temenos wall, gateway, threshold and ramp to the Hellenion, built at the end of the 7<sup>th</sup> century BC, in alignment and contemporary with a platform within the sanctuary of the Dioskouroi. Here numerous finds confirm Greek religious activities including two further early dedications to the Dioskouroi. The unusual arrangement of these two sanctuaries in such close proximity requires further analysis.

Excavations of the riverfront revealed for the first time installations that confirm the presence of a man-made river bank surface over reclaimed land. Greater depth was reached in 2016 than in 2015 within the river and river bank deposits, reaching 6<sup>th</sup> century BC material at depth (of over 2m) and to the east (towards the town). This confirms observations made in 2015 that the river was slowly silting up and that the continual addition of material to the

bank, perhaps intentionally, slowly pushed the river front westwards over time. More rapid silting up of the river bank occurred from the 4<sup>th</sup> century BC onwards. The material found provides us with a unique insight into the trade contact and daily lives of the inhabitants of Naukratis from the 6<sup>th</sup> to the 4<sup>th</sup> centuries BC. The rich waterlogged river deposits preserve rare organic finds, such as ship plank fragments, as well as numerous East Greek and other Greek, Levantine and Cypriot trade amphora fragments (with organic residues) that improve our understanding of the changing trade relationships that linked Naukratis, Egypt's main international port, with Mediterranean trade during the Late Period.

Excavations and geophysical work in the temenos of Amun Ra revealed major architectural features and clarified the extent and layout of this important Egyptian sanctuary. Geological work continued to add vital data about the size and nature of the ancient site, with early archaeological material found further to the south, and in the east and south a greater depth of deposit, than hitherto expected. It therefore seems likely that the settlement was already close to its full extent shortly after its founding in the late 7<sup>th</sup> century BC. The rich archaeological remains from stratified deposits ranging from 610-575BC through to 30BC-AD100, from Greek and Egyptian ritual contexts, as well as domestic and commercial dumps, enable a more detailed study of the connections between the people of Cyprus, Phoenicia, the Levant, Greece and Egypt that varies from long-distance trade to cohabitation in this international port city. The results highlight the need for, and great potential of, further fieldwork to provide significant new insights relevant to a range of disciplines.

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