

Berenike: Archaeological fieldwork at a Ptolemaic-Roman port on the Red Sea coast of Egypt 2011-2012¹

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Riassunto

Le campagne di scavi 2011 e 2012 nel porto di Berenice sul Mar Rosso in Egitto hanno apportato ulteriori dati sulla topografia di questo importante emporio tolemaico-romano e sui periodi della storia di questa città, dall'epoca ellenistica all'età romana più remota e più tarda. Si sono portate avanti le ricerche geomagnetiche e i carotaggi geologici e si sono scavate trincee nella zona tolemaica più antica all'estremità occidentale del sito, nei depositi di rifiuti di epoca tolemaica e romana più antica, nel porto sud-occidentale (dove si sono rinvenuti un certo numero di resti tolemaici e molti di epoca romana) e nel cosiddetto tempio di Serapide. Le ricerche sono proseguite nella regione delle miniere di berillo/smeraldo del Mons Smaragdus, di età romana, circa 120 km a nord-ovest di Berenice. In questa zona, i lavori sono proseguiti con una dettagliata rilevazione di progetti architettonici dei due maggiori insediamenti, Sikait centrale e settentrionale, e si sono ripresi i lavori a Nugrus. Si sono anche iniziati gli scavi in una necropoli di bovini dell'età del rame o del bronzo (v-III millennio), nel wadi Khashab, dove nel 2010 si era svolta un'indagine preliminare.

Summary

The 2011 and 2012 field seasons at the Egyptian Red Sea port of Berenike provided more data about the topography of this important Ptolemaic-Roman emporium and about the Hellenistic, early and late Roman periods of the city's history. The project continued geomagnetic surveys and geological coring and excavated trenches in the early Ptolemaic area at the western end of the site, in Ptolemaic and early Roman trash deposits, in the southwestern harbor (where some Ptolemaic and many early and late Roman remains were recorded) and in the so-called Serapis Temple. Survey work proceeded in the Roman era beryl/emerald mining region of Mons Smaragdus, about 120 km northwest of Berenike. Here, the project produced detailed architectural plans and elevations of two major settlements: Middle Sikait and North Sikait, and continued work at Nugrus. The project also initiated excavations at a Copper or Bronze Age (fifth-third millennium B.C.) cattle cemetery in Wadi Khashab where initial survey work had been conducted in 2010.

Résumé

En 2011 et 2012, les missions de terrain conduites dans le port égyptien de Berenike, sur la mer Rouge, ont complété nos connaissances sur la topographie de cet important emporium romano-ptolémaïque et sur l'histoire de la cité durant les périodes hellénistique et romaine ancienne à tardive. Le projet a procédé à des prospections géomagnétiques, à des carottages géologiques et à des fouilles dans le temple dit de Serapis ainsi que dans la zone ptolémaïque ancienne de l'extrémité ouest du site, dans les dépôts d'ordures ptolémaïques et romains anciens, et dans le port sud-ouest où l'on a enregistré quelques restes ptolémaïques et de nombreux vestiges romains tardifs. Des prospections ont été effectuées dans les zones minières à béryl/émeraude du Mons Smaragdus, à environ 120 kilomètres au nord-ouest de Berenike. Le projet a pu y lever des plans détaillés et des élévations de l'architecture de deux établissements majeurs: Middle Sikait et North Sikait, avant de poursuivre ce travail à Nugrus. Le projet a aussi commencé des fouilles dans un cimetière de bovins du Wadi Khashab remontant au Cuivre ou au Bronze (v^e-III^e millénaire BC) et où une exploration préliminaire avait été effectuée en 2010.

1. Introduction

The eleventh and twelfth seasons of excavations at the Ptolemaic-Roman (third century B.C.-sixth century A.D.) Red Sea emporium of Berenike, Egypt (Figs. 1-2) took place in winter 2011 and 2012 under the aegis of the University of Delaware and the Polish Centre of Mediterranean Archaeology of the University of Warsaw. The co-directors were S.E. Sidebotham and I. Zych.²

Fieldwork at Berenike itself consisted of continued geomagnetic surveying of the site, some 60-70% of which has now been completed (for earlier results see Herbich, 2007; Sidebotham & Zych, 2010: 8-10) (Fig. 3). Geological coring of selected areas of the city's harbors also took place. The project excavated or partially excavated trenches mainly in

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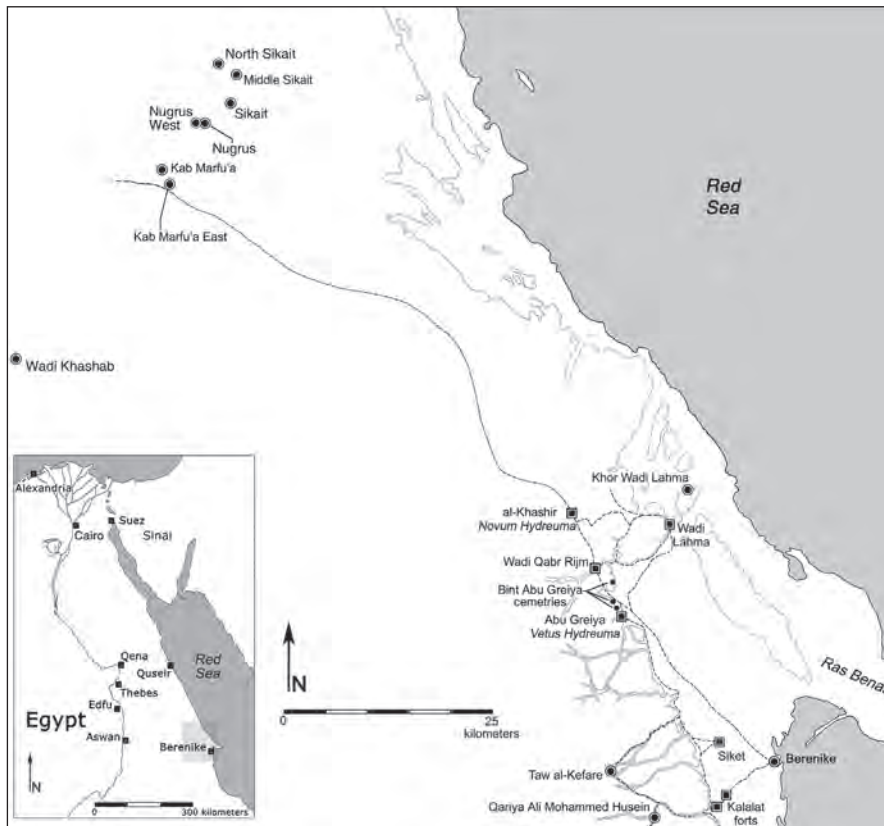
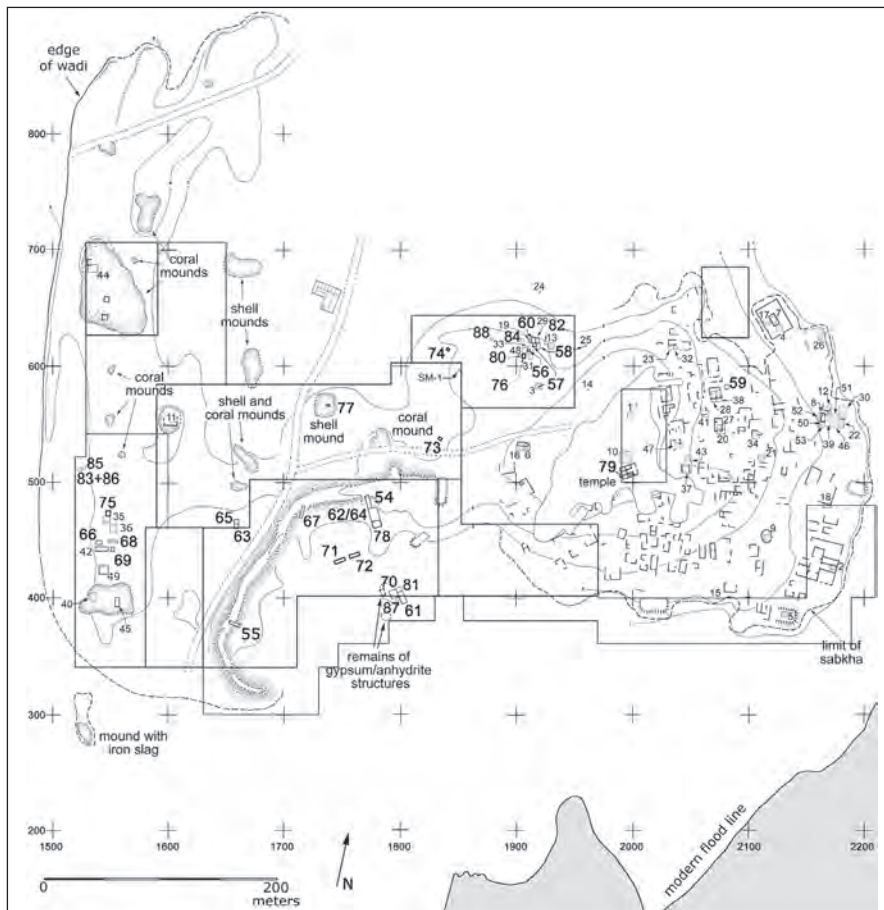


Fig. 1. Map of the southeastern desert of Egypt. Drawn by M. Hense.

Fig. 2. Plan of Berenike. Drawn by M. Hense and S. Maslak.



¹ These two seasons were funded (in alphabetical order) by the History Department of the University of Delaware, Institute for the Study of the Ancient World (New York University, Prof. R.S. Bagnall, Director), Office of the Dean of the University of Delaware, J.A. and V. Seeger, S.E. Sidebotham, W. Whelan and I. Zych. The Polish Centre of Mediterranean Archaeology of the University of Warsaw, Cairo branch, and its Director Dr. Zbigniew Szafranski, provided critical logistical support in Egypt.

² For synopses of earlier seasons see Sidebotham and Wendrich (1995, 1996, 1998a, 1998b, 1999, 2000, 2001-2002, 2007); Sidebotham, Hense and Nouwens (2008): 135-144, 147-148, 159-165, 171-192, 244-247, 329-343; Sidebotham (2011) and Sidebotham and Zych (2010, 2011, 2012).

the Ptolemaic industrial area at the extreme western edge of the site, in the southwestern harbor, immediately north of the aforementioned harbor in a Ptolemaic trash deposit and in the early Roman trash dump at the northern edge of the city. There was also minimal exca-

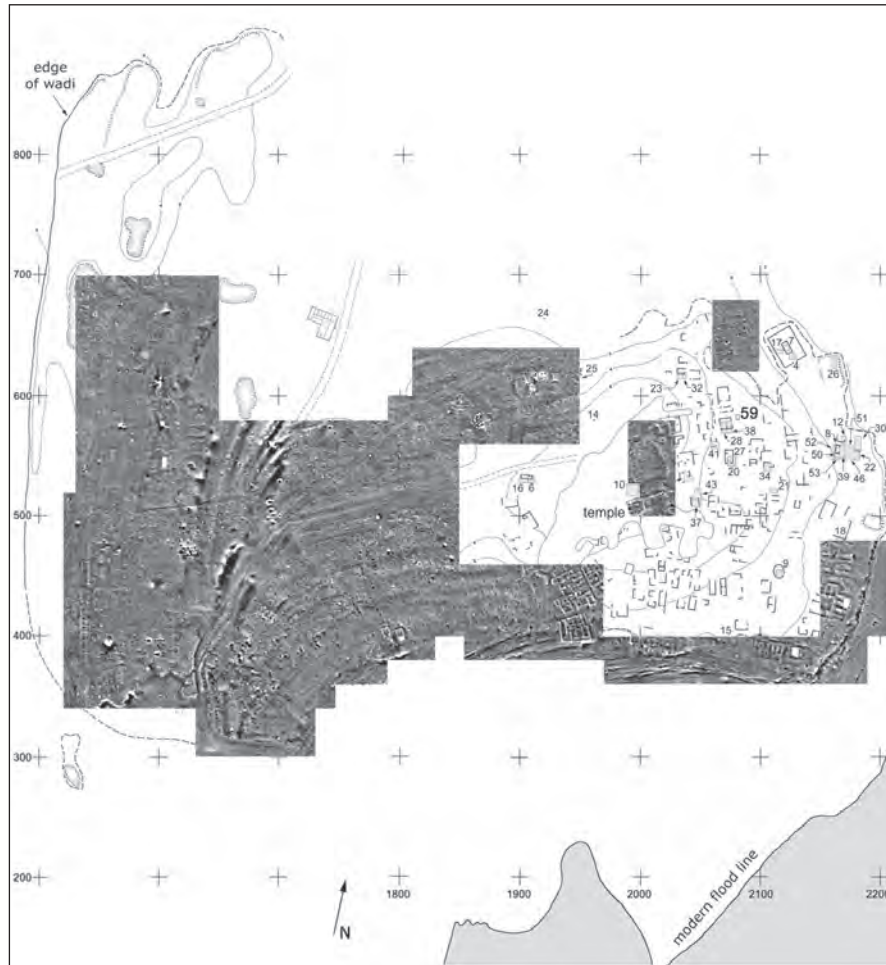


Fig. 3. Geomagnetic plan of Berenike.
Created by T. Herbich.

vation and clearing in and adjacent to the so-called Serapis Temple at the highest point in the city center.

Fieldwork in the Eastern Desert consisted of drawing plans of settlements in the ancient emerald mining district known as Mons Smaragdus, specifically at the sites of Middle Sikait, North Sikait and Nugrus. The survey revisited the five forts comprising Vetus Hydreuma (in Wadi Abu Greiya, about 25 km northwest of Berenike) and the nearby graves and cemeteries of Bint Abu Greiya to take more photos and collect additional potsherds. In addition, the project conducted excavations at a cattle cemetery in Wadi Khashab.

2. Berenike: the Ptolemaic area

Excavations in the Ptolemaic industrial zone in the western part of the site continued in the area where a V-shaped ditch had been recorded during earlier excavation seasons [cf. Sidebotham & Wendrich, 2001-2002: 26-27; Sidebotham & Zych, 2010: 10, 11 (Fig. 4); Sidebotham *et al.*, 2008: 162, 164 (Fig. 7.13); Sidebotham, 2011: 55]. This feature may have been an elephant retaining pen; nearby the project documented fragments of one or more elephant teeth. The species of pachyderm has not been determined, but likely it was either the bush elephant (*Loxodonta africana*) or the smaller, but more easily trained forest elephant (*Loxodonta cyclotis*) (cf. Sidebotham, 2011: 53). The find of these teeth lends some support to our initial identification of the nearby ditch.

Other trenches in the western part of the site lay in an area where geomagnetic surveying had suggested the presence of a fortification, perhaps including a tower, having a rectilinear plan. Unfortunately, excavations revealed that whatever architectural features had once been in this area had been robbed out (Fig. 4) at some undetermined point in antiquity, likely for recycling into later structures elsewhere on the site. Associated pottery, including several stamped amphora handles – at least one of which was Rhodian and mentioning an official named



Fig. 4. Berenike. Remains of Ptolemaic tower looking east. Photo by S.E. Sidebotham.



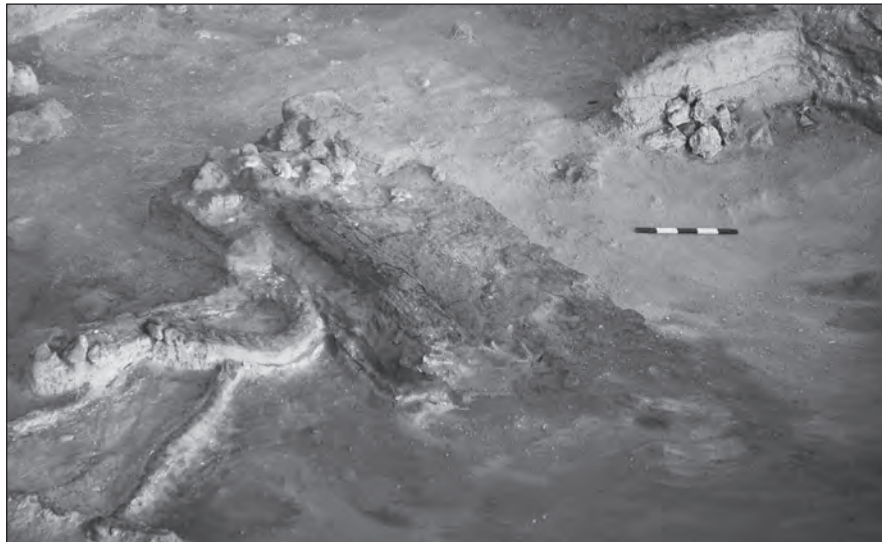
Fig. 5. Berenike. Amphora handle stamped ΦΙΛΙΝΟΣ, from Rhodes. Photo by S.E. Sidebotham.

ΦΙΛΙΝΟΣ (Philinos) (Fig. 5) dated 269-240 B.C. (Finkielsztein, 2001: 76, 93, 188 = Tableau 17) – indicated that this tower had been erected about the second quarter to mid-third century B.C. making it one of the earliest architectural features discovered thus far at Berenike.

In addition, immediately north of the robbed out portions of the early Ptolemaic era tower excavations recorded a burial comprising multiple individual humans whose bones were badly decayed. This poor state of preservation was caused, in part, by the close proximity of the bones to the surface of the ground. Mixed in with these human remains were fragments of amphoras, which remain unstudied at this point. It is uncertain what relationship the amphora remains had with these burials. The close proximity to modern ground surface of these bones indicates, however, that they post-date by some indeterminate number of years, the aforementioned Ptolemaic tower.

3. Harbor area

Most excavation during these two seasons took place in the harbor area at the southwestern corner of the site south and south southeast of the Ptolemaic industrial area. Trenches here extended or continued ones begun in earlier seasons. These documented additional early Roman (first-second century A.D.) ship timbers, lengths of large ropes (Fig. 6) undoubtedly related to ocean-going vessels (either rigging or used to tie the



vessels up to the shore) (cf. Sidebotham & Zych, 2010: 19-21), as well as thin fragments of lead some of which preserved nail holes (Fig. 7). Clearly, the latter had originally been sheathing for the hulls of merchant ships (cf. Harris, 2011: 17, 20; Dell'Amico, 2011: 65-68, 75-80; Wilson, 2011: 220; for Myos Hormos see: Copeland, 2011: Fig. 10.12, 100-101; Blue *et al.*, 2011: 186-188, Fig. 15.8). Fourteen samples of lead sheathing examined from the 2011 season from one trench were fairly uniform in thickness, varying from 1.0 to 1.5 mm. Three had nail holes, varying from 4 to 5.5 mm in diameter for affixing them to the hull with small tacks or nails (cf. Sidebotham & Wendrich, 2001-2002: 26, 43; Sidebotham, 2008: 307, 308; Sidebotham, 2011: 197, cf. 200). Excavations also recorded a few ostraka written in Greek from this area.

Other trenches in the harbor area sought to identify the location, size and construction methods of harbor or quay walls; this was only partially successful. One trench preserved the remains of the base of a *dolium* embedded into a prepared surface while the other contained portions of a shallow stone wall. Both these features suggest activity in the latest phases of use of this southwestern harbor. In addition, excavations in these trenches also documented some indication of the location of the shoreline in antiquity.

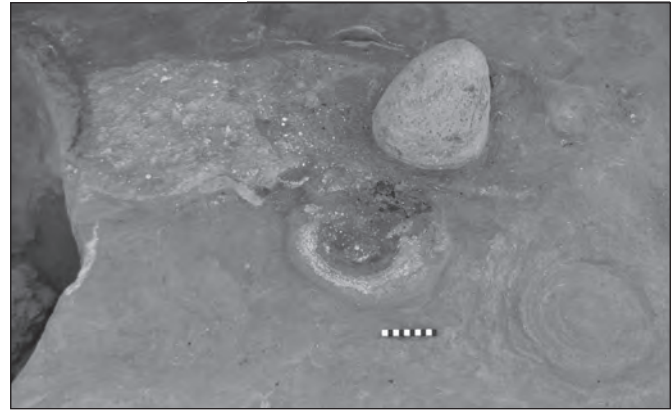
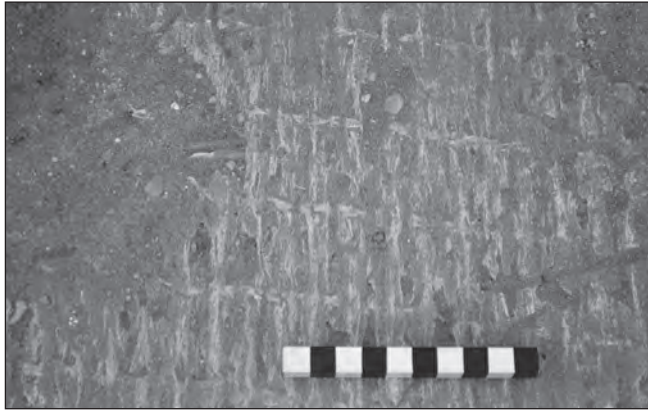
Excavations continued in the late Roman harbor temple and related sunken white gypsum/anhydrite ashlar structure first recorded in 2010; additional trenches exposed features outside and abutting the temple at its northern and northwestern walls (Fig. 8-9). In 2010 circumstantial evidence from inside the temple (pentagrams painted or carved into objects, cowry shells likely used for prognostication and a late first century AD inscription) suggested that cults of Isis, Tyche and perhaps Serapis had been venerated (Sidebotham & Zych, 2010: 15-16). The worship of Isis here would have been especially appropriate given the location of the temple in the harbor (though there is little evidence that this harbor still functioned as such by late Roman times)

Fig. 6. Berenike harbor area: ship timber and ropes. Photo by S.E. Sidebotham. Scale = 50 cm.

Fig. 7. Berenike: remains of lead sheathing and brailing rings. Photo by S.E. Sidebotham. Scale = 5 cm.

Fig. 8. Berenike harbor area: view of temple and adjacent ashlar structure looking south. Photo by S.E. Sidebotham.

Fig. 9. Berenike harbor area: interior of harbor temple looking southwest. Photo by S.E. Sidebotham.



and the status that the goddess had as protector of sailors and maritime related activities in Hellenistic and Roman times.

In 2012 excavations documented that this temple had experienced intensive use in the late fourth and throughout the fifth century AD. Two walls or benches, which first became visible at the end of the 2010 excavation season, ran parallel to one another and also parallel with the exterior western and eastern walls of the temple. No excavations took place in this area during the 2011 season, but these benches/walls were more fully articulated in winter 2012. Between each and the eastern and western walls of the temple were at least three layers of matting made of tamarisk twigs (personal communication from J. Zieliński) alternating with dirt surfaces along the interior periphery of the temple (Fig. 10). Intermingled with these layers of matting were large quantities of ovicaprid (sheep and goat) bones indicating that choice cuts of meat were consumed here (*cf.* Sidebotham & Zych, 2010: 16; *cf.* Knust & Várhelyi, 2011: 14). Fragments of very diagnostic fine Aswan cups/bowls mixed with this matting and faunal remains indicate that this activity took place in the fifth century. This matting, the bones and the cups represent an area where meals of some kind, likely ritual, took place. The central part of the temple interior, between these inner walls/benches with the matting, contained remains of over two dozen wooden bowls the insides of which preserved the remains of burning (Fig. 11), likely the charred residue of some kind of offerings.

Also inside the temple was a large, egg-shaped stone made of imported vesicular basalt, which lay embedded in the surface immediately north of a large hole (Figs. 11-12). The hole, though incompletely excavated, contained what appeared to be the top-most part of a coral reef. Remains of some type of artificial balustrade, likely originally made of wood, separated this hole from the rest of the temple interior indicating, clearly, that this feature had important cult significance. North of

Fig. 10. Berenike: interior of harbor temple: tamarisk matting. Photo by S.E. Sidebotham. Scale = 10 cm.

Fig. 11. Berenike: interior of harbor temple: remains of wooden bowls and egg-shaped stone. Photo by S.E. Sidebotham. Scale = 10 cm.

Fig. 12. Berenike: interior of harbor temple: hole with top of putative coral reef, egg-shaped stone made of vesicular basalt and some wooden bowls. Photo by S.E. Sidebotham. Scale = 20 cm.

Fig. 13. Berenike: interior of harbor temple: flower pot with lotus seeds. Photo by S.E. Sidebotham. Scale = 10 cm.



the egg-shaped stone were the remains of the end of an amphora. Seeds from this area and from inside the amphora end itself were identified as lotus (personal communication from J. Zieliński); evidently, the amphora end had served as some type of flower pot (Fig. 13). Given the proximity of the lotus seeds and flower pot to the putative coral reef top and the egg-shaped stone, one might conclude that there was some symbolic relationship among them.³ There were several Egyptian creation myths that incorporated facets of these features appearing inside the harbor temple. Some elements are common to every Egyptian creation myth. All related that the world arose from an aqueous chaos (*Nun*) from which first emerged a pyramid-shaped mound (*benben*). Among the first plants to grow on this *benben* was the lotus. Egyptian creation myths also included a cosmic egg, which could substitute for the *Nun/benben* (Tyldesley, 2010: 37-41; cf. Wilkinson, 2003: 117-118). The top of the putative coral reef may represent the *benben*; that, together with the nearby lotus flowers and the egg-shaped stone would have been immediately recognizable to anyone entering the building as a visual reminder of this cosmic event. This very Egyptian myth celebrated in the late period at Berenike is yet another indication (noted in earlier excavation seasons) (cf. Sidebotham & Wendrich, 1998b: 89; Sidebotham & Wendrich, 2001-2002: 29) that much of the population of the city was Egyptian and that it was, likely, more prominent in the life of the port at that time.

Next to the columnar shaped feature at the northern interior end of the harbor temple, excavations recovered a bronze head of a bull, which had been welded to a curved bronze plate. The head, partially filled with lead, had been damaged on its left side and likely originated from a statuette representing the entire animal (Fig. 14-15). The closest parallels for the head are bull statuettes from southern Arabia of about the first and second centuries A.D. It is probable that the bronze bull's head had subsequently been removed from the body and then welded onto the plate, which had been pierced by two holes, one round and one square. Near where excavations recovered the bull's head was a very poorly preserved *aes* coin (an AE 1) of the Roman emperor Julian II (the Apostate) (reigned as Augustus 361-363 A.D.) the reverse of which had the representation of a bull with two stars above (Fig. 16). Although not clear on our example, the reverse with the image of the bull has the legend: *SECVRITAS REI PVB* (Kent, 1981: 569; cf. Plate 6, no. 236; Plate 17, no. 418; Plate 23, no. 162; Plate 25, no. 126; Plate 28, no. 216). The coin has three holes drilled through it above the obverse portrait indicating in its latest manifestation that it had likely been a pendant or had hung from a chain, perhaps as a necklace; it might also have been affixed to some feature inside the temple itself. In this capacity the coin probably served as an amulet or for some apotropaic purposes (cf. Fulghum, 2001) for the wearer or for this shrine itself.

Fig. 14. Berenike: from interior of harbor temple: bronze head of bull. Photo by S.E. Sidebotham. Each black and white increment on the scale = 1 cm.

Fig. 15. Berenike: from interior of harbor temple: bronze head of bull. Photo by S.E. Sidebotham. Scale = 5 cm.

Fig. 16. Berenike: from interior of harbor temple: reverse of AE1 of Julian II (reigned as Augustus 361-363 AD). Photo by S.E. Sidebotham. Each black and white increment on the scale = 1 cm.

³ Joanna Rądkowska first suggested this to the authors.



Fig. 17. Berenike harbor area: ashlar structure looking southwest. Photo by S.E. Sidebotham.

There are a number of theories about the meaning of the bull, which appears on this coin of Julian's. There was likely also symbolism associating him as the last pagan Roman emperor with cult activities taking place in the harbor temple at that time. Whether this bull's head and bull on the reverse of the coin represent a cult associated with Mithras and the *tauroctony* (bull slaying) that was a core part of his worship, or with some Egyptian (Apis bull?) (Kent, 1981: 47), African or South Arabian cult, where bulls were also popular, cannot be determined at this point. The bull on the coin may be an allusion to the constellation Taurus and the two stars above perhaps represent the Pleiades and the Hyades. Some have proposed that this is an allusion to Julian's birth sign (Kent, 1981: 47; cf. Hartner, 1965). Possibly, too, the bull represents Julian himself, as protector of the Roman people and state (Kent, 1981: 47). This association of a ruler as guardian of his people with a bull as protector of his herd likely has ancient Near Eastern antecedents. One can trace this allusion in the classical Greco-Roman tradition as far back as Homer (*Iliad* 2.480-483); Dio Chrysostom (*Second Discourse on Kingship* 66-74) in the first-early second century AD also expounds on this. There was, probably, a connection between the bronze bull's head and this coin-pendant/necklace. All the cumulative evidence excavated from within this temple from the 2010 and 2012 seasons suggests, however, that multiple cults were likely celebrated here. This is not unusual at Berenike as the so-called "Shrine of the Palmyrenes" excavated in the mid-late 1990s demonstrates [cf. Sidebotham & Wendrich, 1998b: 93-94; Hölbl, 2005: 19; Sidebotham *et al.*, 2008: 137-141; Sidebotham, 2011: 57, 59 (Fig. 5-3), 64-66, 84, 86, 226-227, 259-260, 264-265, 267-268].

Excavations in the odd and sunken rectilinear shaped ashlar structure northwest of the late Roman harbor temple, and which first appeared in excavations in 2010 (Sidebotham & Zych, 2010: 16-17), continued in 2011 (Fig. 17). The only other edifice thus far identified at Berenike using similar ashlar blocks made of white gypsum/andrydrite and erected in a similar fashion is the so-called Serapis Temple located at the highest point in the center of the site. That shrine is likely Ptolemaic or early Roman in date. It is probable that this sunken ashlar installation in the harbor area is contemporary with initial construction of the "Serapis" Temple.

Excavations in 2011 in this sunken feature recorded a number of artifacts. These included items dating from the early to the late Roman period, which appear to have been thrown or dumped into this area. The nature of the dumping suggests that most or all of the items, both early and late Roman, were deposited at approximately the same time. They may well represent the interior contents of some nearby structure (probably religious) that had been cleaned out and discarded here; perhaps this sunken feature was, in this capacity, viewed as a *bothros* (a sacred pit into which religious objects have been discarded when no



Fig. 18. Berenike: from interior of ashlar structure. Digit (finger or toe) and eye insets from bronze statues. Photo by S.E. Sidebotham. Scale = 5 cm.

Fig. 19. Berenike: from interior of ashlar structure. Inscription of Domitian (reigned 81-96 AD). Photo by S.E. Sidebotham. Scale = 50 cm.



longer functional) by those using it. Alternatively, but less likely, Christians may have used this sunken area to discard what they deemed offensive pagan symbols. Objects included a fragments of banded agate cameo blanks (imported from India), peppercorns, beads, ostrich eggshell shards (some preserving red paint) and fragments of fired bricks suggesting some type of hydraulic feature. In addition, excavations documented a bronze digit, either a finger or a toe from a large statue, two stone or bone insets for eyes from bronze statues (Fig. 18), a number of stone architectural elements and an inscription carved from the same stone as the base on which it rested. That portion of the text recording the name of the ruler had suffered *damnatio memoriae*. The titulature of the text points to the emperor Domitian (ruled 81-96 A.D.) (personal communication from R.S. Bagnall) (Fig. 19). Another large and badly damaged fragment of bronze from a statue was likely a portion of an arm or a leg. This, however, derived from another trench adjacent to both the late Roman temple and to the sunken ashlar feature; this bronze appendage, however, may have come from the same statue as the digit recovered from the putative *bothros*.

4. *Trash dumps*

Many trenches excavated at Berenike in the 2011 and 2012 seasons lay in the early Roman (first century A.D.) trash dump, an area highly productive of ostraka, papyri, and other artifacts and ecofacts recorded in earlier seasons. During 2011 and 2012 the quantity of ostraka and papyri was less than that documented from this area previously. Excavations also recorded textiles, leather, matting and cordage, including remains of a fishing net and fish net weight (Fig. 20). Other unusual finds were a plaster jar stopper preserving an impressed monogram (Fig. 21), numbers of beads, including two Roman mosaic face beads,

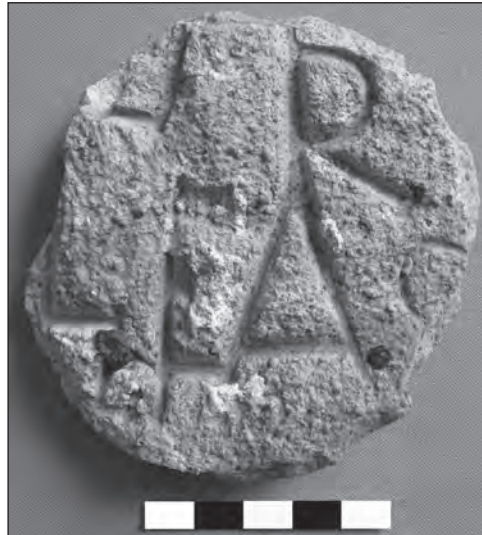
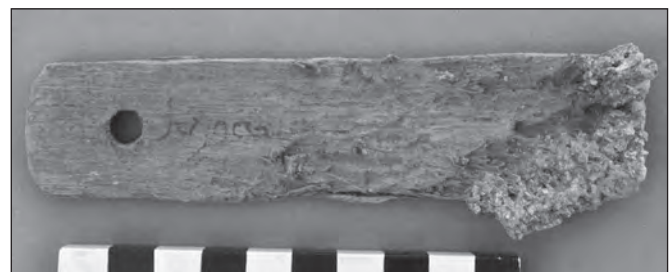
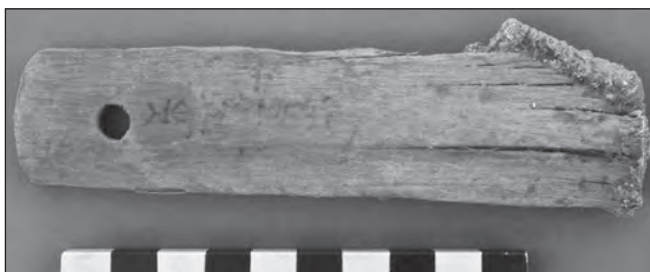


Fig. 20. Berenike: fish net weight (stone tied with string). Photo by S.E. Sidebotham. Scale = 5 cm.

Fig. 21. Berenike: from early Roman trash dump. Plaster jar stopper impressed with monogram. Photo by S.E. Sidebotham. Scale = 5 cm.

Fig. 22. Berenike: from early Roman trash dump. Small brush. Photo by S.E. Sidebotham. Scale = 5 cm.



which likely represent Medusa or Gorgon (*cf.* Stern & Schlick-Nolte, 1994: 414-415, nos. 153-154) (**Pl. A**), some gold foil beads (**Pl. B**), *millefiore* and other types of beads (**Pl. C**) a small brush (Fig. 22), some nice fragments of glass vessels (**Pl. D and E**), dog and cat burials (Fig. 23), the grave of an older child or young adolescent human and the lower half of an adult male skeleton. A wooden tag pierced at one end had written in ink on one side a short text in Greek; on the other side was a short text in what appeared to be some Semitic language (Figs. 24-25). This tag likely had been originally attached to some cargo imported to Berenike. There was also a lead seal stamped with a seated male figure holding a staff or scepter in his left hand and still attached to a piece of cordage (Fig. 26). Given the classical Greco-Roman appearance of the figure on the lead seal, the assumption is that it had been affixed to some important cargo arriving from or via the Nile valley, or by sea from some more northerly port, for onward shipment to a point along the littoral of the Red Sea or Indian Ocean.

Fig. 23. Berenike: from early Roman trash dump. Dog burial (covered by amphora fragments) and cat skeleton. Photo by S.E. Sidebotham. Scale = 20 cm.

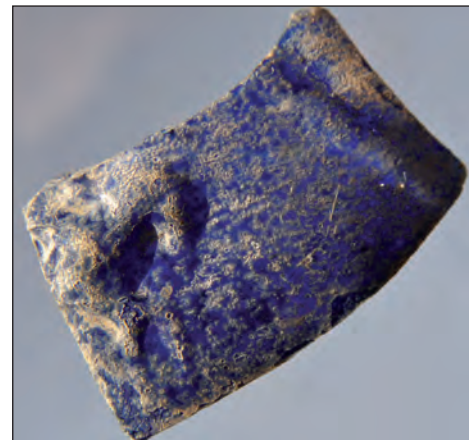
Figs. 24 and 25. Berenike: from early Roman trash dump. Wooden tag with Greek text on one side and Semitic text on the other side. Photo by S.E. Sidebotham. Scale = 10 cm.



Pl. A. Berenike: from early Roman trash dump. Roman mosaic face beads. Photo by S.E. Sidebotham. Each black and white increment on the scale = 1 cm.

Pl. B. Berenike: from early Roman trash dump. Gold foil beads. Photo by S.E. Sidebotham. Each black and white increment on the scale = 1 cm.

Pl. C. Berenike: from early Roman trash dump. *Millefiore* and other types of beads. Photo by S.E. Sidebotham. Each black and white increment on the scale = 1 cm.



Pl. D. Berenike: from early Roman trash dump, Fragment of glass vessel with painted marine scene. Photo by S.E. Sidebotham. Scale = 5 cm.

Pl. E. Berenike: from early Roman trash dump. Fragment of glass vessel with relief of foreparts of horse. Photo by S.E. Sidebotham. Shard measures ca. 3 cm x 1.8 cm.

Pl. F. Berenike: from exterior of back wall of the so-called Serapis Temple. Small statuette with the body of a crocodile and the head of Horus. Photo by S.E. Sidebotham. Scale = 5 cm.





Excavations in the early Roman trash dumps also documented numerous fragments of aromatics including camphora, mastic and *boswellia* (personal communication from J. Zieliński).

One trench immediately north of the harbor area proved to be a Ptolemaic trash deposit, the first ever documented in excavations at Berenike. Finds included a fair amount of burned material, which had been secondarily deposited and worked turtle shell, suggesting that at least part of the contents of this trench comprised “industrial” waste. There were also two ostraka, which appear to have been written in Demotic and a number of other artifacts including beads and pottery. Excavations also documented a small scarab made of peridot, a semi-precious stone, the nearest source of which is St. John’s/Zabargad Island ca. 80 km southeast of Berenike (Harrell & Bloxam, 2010). A second scarab made of faience was broken, but had a hieroglyphic text on the bottom: “*netcher kheperw-Re*”, which means “the divine form of Re” (Fig. 27). It is the coronation name of the 21st Dynasty pharaoh Siamun (reigned ca. 978-959 BC). Since the production of scarabs virtually ceased by Ptolemaic times, this specimen was, clearly, a seven hundred year old heirloom that likely functioned as an apotropaic amulet (Hornung & Staehelin, 1976: 28).⁴ This is the oldest artifact yet documented from our excavations at Berenike.

5. “Serapis” Temple

The first structure to be studied by many European visitors to Berenike beginning in the early nineteenth century was the so-called “Serapis” Temple (cf. Meredith, 1957; Hölbl, 2005: 19-20; Sidebotham *et al.* 2008: 135-136; Sidebotham, 2011: 58, 60, 63, 81-84; 226-227, 230, 265). Our work in this sanctuary at the top-most part of the site included clearing one of the rooms in order to record it properly with detailed photography and architectural plans and elevations (Fig. 28); clearing and recording additional rooms will continue in future seasons. There was also some clearing of the southeastern area of a large trench whose baulks had collapsed following 2001 when no excavations had taken place at the site. This collapsed trench lay adjacent to portions of the northern wall of the so-called “Serapis” Temple and here the project noted, cleared and cleaned lengthy planks made of teak and cedar. The timbers may have formed part of a roof of portions of the “Serapis” Temple itself or of some later structure adjacent to it. The appearance of dowel holes in some of the timbers, suggests that at least a portion of them had been recycled from dismantled ships (cf. Sidebotham, 2011: 239-240, 242). Excavations in a small trench abutting the exterior rear (western) wall of the temple documented a small stone statuette of a crocodile with the head of Horus wearing part of the royal headdress; a hole in the top of the head indicates that there was originally another portion of the headdress, either in metal or stone, which is now missing (Pl. F). There are close parallels in the Walters Art Museum in Baltimore, Maryland (USA), the Egyptian Museum, Cairo, the Metropolitan Museum of Art in New York; the Staatliche Museen in Berlin, and in the British Museum and University College London.⁵ All the parallels date from the 26th Dynasty to the Ptolemaic era.

Fig. 26. Berenike: from early Roman trash dump. Lead seal on cordage. Photo by S.E. Sidebotham. Scale = 5 cm.

Fig. 27. Berenike: from Ptolemaic trash dump. Fragment of faience scarab, reverse with hieroglyphic text of 21st Dynasty Pharaoh Siamun. Photo by S.E. Sidebotham. Each black and white increment on the scale = 1 cm.

⁴ Dr. Emily Teeter of the Oriental Institute, University of Chicago, kindly provided the reading, translation and citation.

⁵ Martin Hense generously provided the following parallels: Walters Art Museum, Baltimore: steatite (400-250 BC), crown missing; Egyptian Museum, Cairo (floor 2, Hall 19): limestone, from Mansurah, Daqahliya; Metropolitan Museum of Art, New York (Ptolemaic); Staatliche Museen, Berlin (Late Period-Ptolemaic); British Museum, London: lapis lazuli, 1993.0629.2/BM 74189 (Late Period, 600 BC); British Museum, London: blue glazed, 1925.0511.66/BM 57914 (26th dynasty); British Museum, London: red brown glazed, 1925.0511.66/BM 57914 ? on the same photograph (26th dynasty); University College London, Petrie Museum: steatite, UC60054 (Late Period); University College London, Petrie Museum: copper-alloy, UC8149, winged crocodile with falcon head, crown (Late Period).



Fig. 28. Berenike: view of one cleared room of the so-called Serapis Temple. Photo by S.E. Sidebotham.

6. Excavation and survey work in the Eastern Desert

Other fieldwork took place, which included both excavation and survey. In Wadi Khashab the survey had drawn a plan of and had recovered cattle bones from the surface of a stone enclosure in 2010 (Fig. 1 & 29-30) (Sidebotham & Zych, 2010: 23-24). The hypothesis at that time was that this had been a burial place for domesticated long horned cattle, which commonly appear as pictographs and dipinti on rock faces throughout the Eastern (Winkler, 1938: 20; Judd, 2007a, 2007b) and the Western Deserts (Winkler, 1939: 24-26; Judd, 2007b: 73) and in the Nile Valley (Judd, 2007b: 73). Excavations (directed by P. Osypińska) inside the enclosed oval/circular shaped stone feature in 2012 corroborated the hypothesis proposed in 2010; they documented an intact cow burial (Fig. 31) and recorded other cattle bones. This bovine necropolis almost certainly had cultic-religious significance for those who created it and must be associated with the advent and importance of pastoralism in late prehistoric and early dynastic Egypt (Wengrow, 2001); as far as the authors know, there is nothing similar to it known from the region, though Murray (1926) noted what he believed to be a cemetery for oxen in more southerly reaches of the Eastern Desert. The closest parallels in appearance, function and date for this well preserved cattle burial enclosure lay in Egypt's Western Desert and in Sudan and are from the Copper or Bronze Age (fifth-third millennium BC) (Wengrow, 2001; Brass, 2007; Brass *et al.*, 2003; *cf.* Judd, 2007a, 2007b).

Survey work concentrated in two major areas. The first lay about 120 km northwest of Berenike, which the Romans called Mons Smaragdus (Emerald Mountain) (*cf.* Sidebotham *et al.*, 2004; Foster *et al.*, 2007; Sidebotham *et al.*, 2008: 124-131, 285-302). This zone, the only one inside the Roman Empire where beryls/emeralds were mined, covers approximately 300 km². During the 2011 and 2012 seasons the survey (directed by J.-L. Rivard) continued drawing plans and elevations at three mining settlements here: Middle Sikait (*cf.* Sidebotham *et al.*, 2008: 297-298; Sidebotham, 2011: 144-145) (Fig. 32-33), North Sikait (*cf.* Sidebotham *et al.*, 2008: 297) (Fig. 34) and Nugrus (*cf.* Sidebotham *et al.*, 2004: 23-26; Sidebotham *et al.*, 2008: 130-132, 298-300) (Fig. 35-36). The survey also briefly revisited a putative early Christian hermit community at Nugrus West (*cf.* Sidebotham *et al.*, 2004: 25-26) (Fig. 37), first located in 2003. Photographs were taken and surface pottery was collected for study.

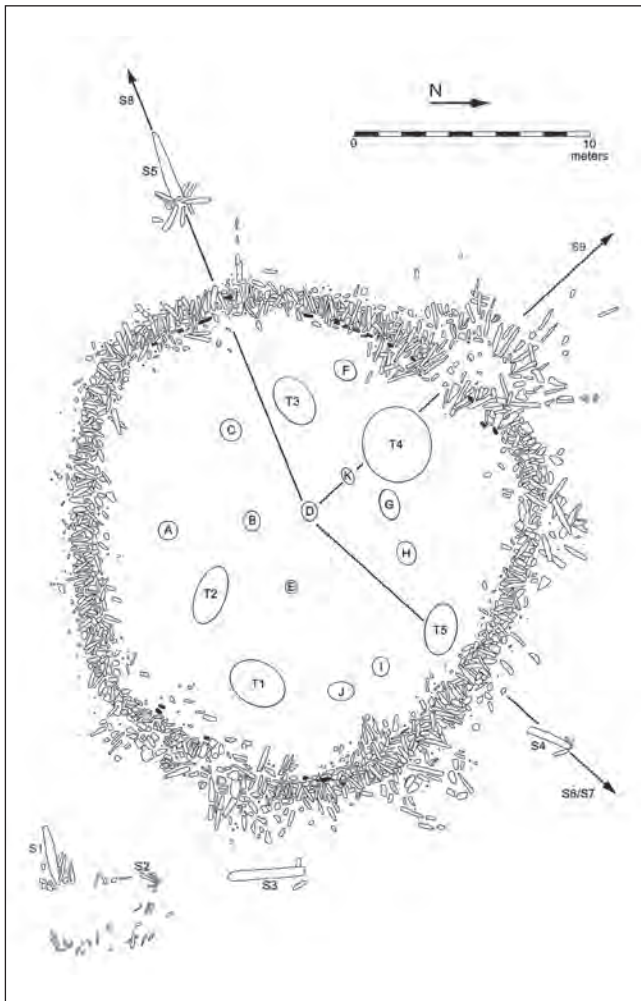
In addition, the survey made return visits to five Roman *praesidia* (forts) in Wadi Abu Greiya (ancient Vetus Hydreuma) *ca.* 25 km northwest of Berenike (*cf.* Sidebotham *et al.*, 2008: Pl. 14.4, 355; Sidebotham, 2011: 112-113, 138-139, 149, 163, 166, 275, 277) (Fig. 38-42). Vetus Hydreuma was the first stop on the road leading from Berenike to the Nile in both Ptolemaic and Roman times. The survey undertook additional surface pottery collection and took more photographs of these important



Fig. 29. Wadi Khashab: view of cattle cemetery. Photo by S.E. Sidebotham.

Fig. 30. Wadi Khashab: plan of cattle cemetery. Drawn by M. Hense.

Fig. 31. Wadi Khashab: view of a cow burial. Black plastic caps are points for taking total station measurements. Photo by P. Osypińska.



installations (Fig. 1). Approximately 1 km immediately west northwest of two of these forts and lying in the wadi itself was a hill atop which were remains of a *skopelos* (watch tower), a route marking cairn and a later grave placed inside the *skopelos*. Along the eastern edge of the hills forming the western boundary of Wadi Abu Greiya is an area locally known as Bint Abu Greiya (Sidebotham, 2011: 138). Here the survey recorded a number of additional individual graves and cemeteries ranging in date, based upon associated surface sherds, from early to late Roman times. These sepulchres likely represent the final resting places of those serving in the nearby garrisons at Vetus Hydreuma or individuals who perished while traveling along the road between Berenike and the Nile.



Fig. 32. Middle Sikait: view of ramp.
Photo by S.E. Sidebotham.



Fig. 33. Middle Sikait: view of major edifices at top end of ramp in Fig. 32. Note human figure inside circle for scale. Photo by S.E. Sidebotham.



Fig. 34. North Sikait: view of some structures looking northeast. Photo by S.E. Sidebotham.



Fig. 35. Nugrus: view of one of the larger, better preserved structures. Photo by S.E. Sidebotham.



Fig. 36. Nugrus: interior of structure. Photo by S.E. Sidebotham.



Fig. 37. Nugrus West: view of part of the settlement looking west. Photo by S.E. Sidebotham.



Fig. 38: Wadi Abu Greiya (Vetus Hydreuma): two *praesidia* in the wadi. Note human figure inside circle for scale. Photo by S.E. Sidebotham.



Fig. 39: Wadi Abu Greiya (Vetus Hydreuma): small fort atop hill (no. 3) above forts in Fig. 38. Photo by S.E. Sidebotham.



Fig. 40: Wadi Abu Greiya (Vetus Hydreuma): hill top fort (no. 4). Photo by S.E. Sidebotham.



7. Conclusion

Excavations at Berenike neither expanded on what was already known about dates of activity at the site nor did they add to our knowledge of the ethnicities or social status of the city's inhabitants. Excavations and various types of survey work (both geomagnetic and geological coring) did, however, augment details about the city's overall plan in antiquity and the location of the shoreline and harbors at various periods in the port's history. Excavations in the Ptolemaic area also corroborated geomagnetic surveying indicating the presence of what appears to have been a tower associated with some kind of fortification dating to the early Hellenistic period. For the first time excavations took place in a Ptolemaic era trash deposit.

Continued excavations in the city's early Roman trash dump provided additional texts dealing with activities at the port and provided

Fig. 41. Wadi Abu Greiya (Vetus Hydreuma): hill top fort (no. 5). Photo by S.E. Sidebotham.

Fig. 42. Wadi Abu Greiya (Vetus Hydreuma): another view of hill top fort (no. 5). Photo by S.E. Sidebotham.

new data on the presence of aromatics in the city. The documentation of both human and pet remains indicates that, prior to rubbish deposition in the middle to late first century AD, the area had served, in part, as a necropolis.

On-going investigations in the harbor temple and its immediate environs documented intense use of that area both in early Roman times and in the later fourth and throughout the fifth century AD.

Excavations at a cattle cemetery in Wadi Khashab, likely dating from the fifth-third millennium BC and survey work at Middle Sikait, North Sikait and Nugrus, in the Roman era emerald mining region known as Mons Smaragdus, continued to build on our knowledge of other areas of the Eastern Desert in antiquity.

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