

**Report to the Honor Frost Foundation on the winter 2014-2015**  
**Berenike (Egyptian Red Sea coast), Egypt Excavations**  
**& Related Fieldwork in the Eastern Desert**

submitted by  
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**Introduction**

Thanks to the generous support of the Honor Frost Foundation and other donors,<sup>1</sup> the University of Delaware (USA) (co-director Steven E. Sidebotham) - Polish Centre of Mediterranean Archaeology, University of Warsaw (co-director Iwona Zych) continued fieldwork at Berenike (Red Sea coast), Egypt during winter 2014-2015 (Figure 1). The project started excavations on December 20, 2014 and work ended on February 9, 2015. A study season prior to excavations began on November 22.

Berenike was a principal player in the “Old World” global economy as an important nexus for commercial and cultural exchanges between the Mediterranean world on the one hand and the Red Sea-Indian Ocean littorals on the other. The preponderance of the evidence excavated since 1994 suggests that Berenike functioned from the third century BC until sometime before the mid-sixth century AD. Some inscriptions in hieroglyphs found this season may indicate, however, much earlier activity at the site.



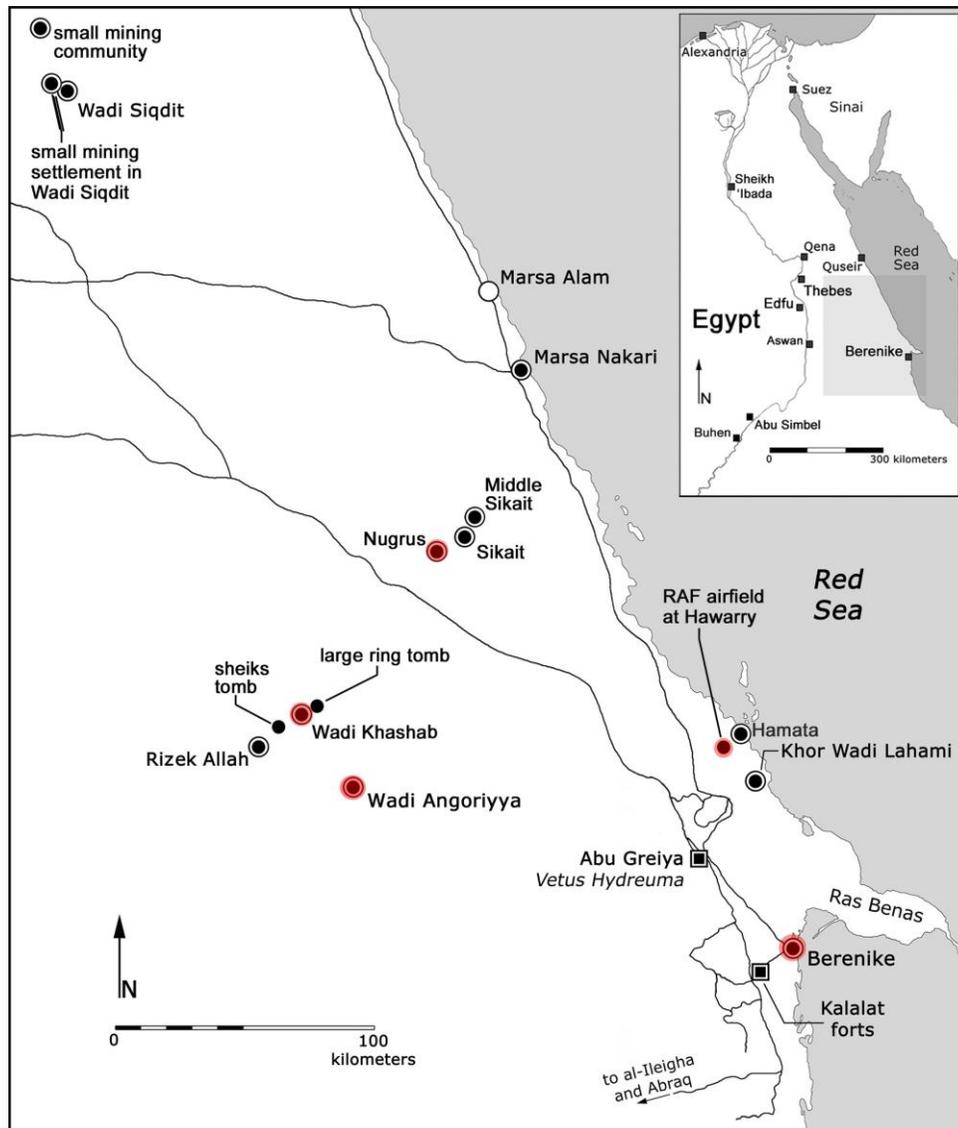
**Figure 1:** Map of the Roman Empire at its greatest extent (115-117 AD). Red arrow marks location of Berenike.

Additionally, excavations at a second millennium BC long-horned cattle cemetery in Wadi Khashab and a total station survey undertaken to draw a detailed plan of the Roman-era emerald mining settlement in Wadi Nugrus continued from previous seasons.

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<sup>1</sup> Other contributors included the Office of the Dean of the College of Arts and Sciences, the Institute for Global Studies and the History Department (all of the University of Delaware), Exxon-Mobil, the Seeger Family Fund, private donors (Mr. Norman Shelly, Mr. Marshall Parsons, Ms. Elizabeth Devries, Mr. Thomas Sidebotham, Mr. Johannes Girardi, manager of the Gorgonia Beach Resort), various Polish and Dutch sources, the British Museum, Ms. I. Zych (co-director of the project) and the author.

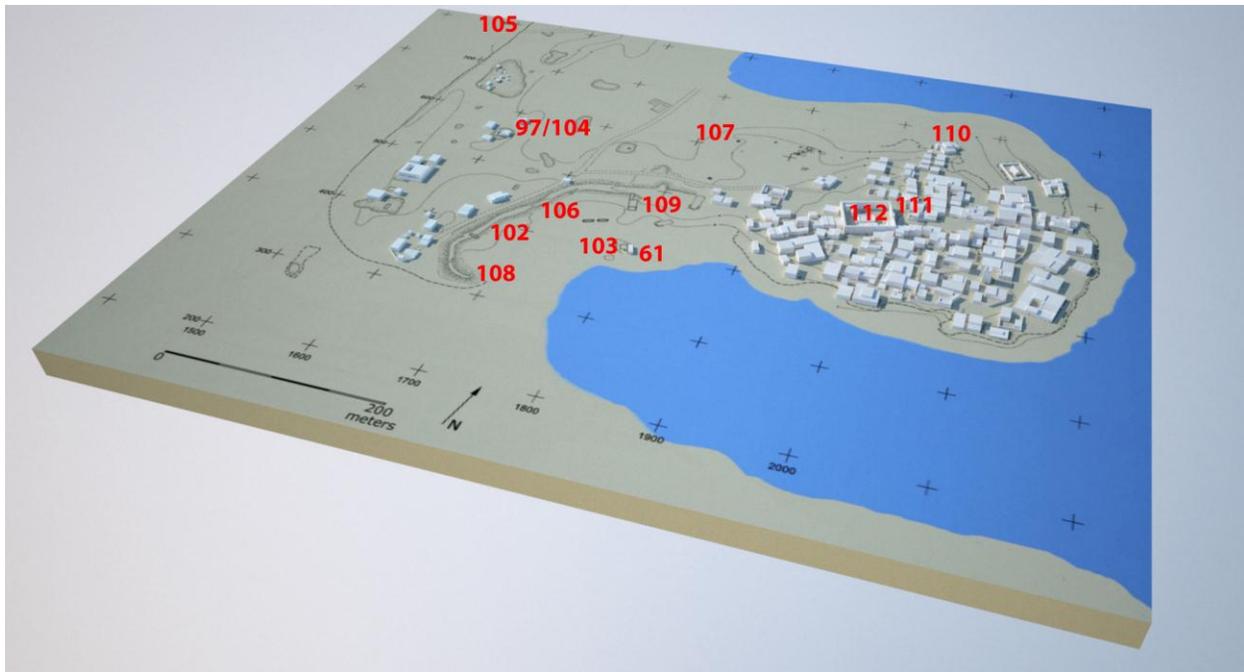
Other surveys in the Eastern Desert recorded a major late Roman (fourth-sixth century AD) settlement in Wadi Angoriyya. There was additional survey work undertaken at a World War II RAF airfield at Hawarry (Figure 2).



**Figure 2:** Map of the southeast portion of Egypt’s Eastern Desert. Areas discussed in the text are highlighted in red. Drawing by M. Hense.

### **Work at Berenike**

The project continued a geomagnetic survey of Berenike and also excavated in whole or in part 12 trenches during the course of winter 2014-2015 (Figure 3). Participants included dozens of staff from the USA, Poland, the UK, Spain, Romania, Canada, the Netherlands, Sweden and Egypt together with (at its peak) 76 locally recruited ‘Ababda Bedouin workman.



**Figure 3:** Plan of Berenike with locations of trenches from the winter 2014-2015 season. Drawing by M. Hense.

### Trenches excavated in Berenike's southwestern harbor

Six of the 12 trenches excavated at Berenike in winter 2014-2015 were in the southwestern harbor and two of these were continuations from previous seasons. Those in the southwestern harbor excavated during winter 2014-2015 – where last season the remains of an early Roman ship frame made of cedar wood had been discovered and previously ship timbers joined using pinned mortise-and-tenon construction techniques - contained a range of structures and finds.

The purpose of some structures excavated in the southwestern harbor this season remains unknown at this time. One was an edifice of uncertain function (Trench BE15-103: possibly a warehouse or work area) that lay west of a sunken structure excavated in 2010 and 2011 (Trench BE10/11-70). Excavations also included part of the interior of a late Roman temple (Trench BE10/12/13/14/15-61), industrial and metal working areas (Trenches BE14/15-102 and BE15-108) and a possible ship repair or ship dismantling facility (Trench BE15-109). There was also a small *sondage* (BE15-106) excavated to recover additional archeobotanical remains for study.

Early Roman-era (first-early second century AD) trench BE15-109 abutted and was immediately south of a trench where excavations in winter 2013-2014 had documented a curved timber that proved to be the remains of an early Roman-era ship frame (in trench (BE14-98). We anticipated finding additional early Roman-era ship remains in BE15-109 and our excavations here did reveal a large timber, but it was so badly decayed that the species of wood and its function could not be conclusively identified (Figure 4); though it was likely part of a dismantled ship. Excavations in this same trench also documented a number of ropes, substantial remains of carbonized matting or basketry and other timbers made of acacia wood (Figures 5-6). A sectioned and excavated area in the northwestern

corner of BE15-109 revealed large bivalve shells used for some unknown purpose; these had been deliberately placed in the positions in which we found them (Figure 7). Deep excavations in this same sectioned area in BE15-109 documented no activity in this part of the harbor prior to the early Roman period (first-second centuries AD). In addition, excavations in this trench and in adjacent ones in previous seasons recorded no activity in this part of the harbor after the early second century AD.



**Figure 4:** Trench BE15-109. At far left is a large timber, to right of photo scale are ropes, matting and remains of acacia wood beams. Scale = 20 cm. Photo by S.E. Sidebotham.



**Figure 5:** Detail of Figure 4. Ropes, matting and acacia wood beams. Scale = 20 cm. Photo by S.E. Sidebotham.



**Figure 6:** Detail of Figures 4-5. Ropes and matting. Scale = 20cm. Photo by S.E. Sidebotham.



**Figure 7:** Bivalve shells in a sectioned portion of the northwestern corner of trench BE15-109. View looking east. Scale = 20 cm. Photo by S.E. Sidebotham.

Excavations in industrial areas (trenches BE14/15-102 and BE15-108) within the southwestern harbor recorded intensive production of iron and copper alloy nails, fittings and other objects. Excavations in trench BE14/15-102 produced extensive quantities of terracotta crucibles with remains of copper-alloy metal residue adhering to them (Figure 8). Excavations in trench BE14/15-102 (which had produced an intaglio of a mounted horseman during winter 2013-2014) also documented another intaglio this season. Carved on an oval shaped cabochon likely made of carnelian, this specimen had engraved on it a draped female figure standing left (Figure 9). She was likely a deity. The earliest levels reached in trench BE14/15-102 were late Ptolemaic/early Roman. Excavations will continue in this area next season (winter 2015-2016) at which time earlier Ptolemaic strata should be documented. That our excavations recorded such artifacts as carved intaglios in trench BE14/15-102 suggests that some other non-industrial high status activities lay close by within or near to the southwestern harbor.



**Figure 8:** Crucible fragments from trench BE14/15-102. Scale = 10 cm. Photo by S.E. Sidebotham.



**Figure 9:** Intaglio from a ring or necklace, likely made of carnelian. Second/first century BC. Photo by S.E. Sidebotham.

Excavations in trench BE15-108 at the extreme southwestern portion of the southwestern harbor documented many iron nails and fixtures. These, together with evidence of heavy burning, suggested the presence of a furnace/workshop for making these metal items. Yet, excavations documented no buildings of any kind; additional excavations within this

trench and an expansion of its horizontal boundaries during the 2015-2016 season should reveal more about the industrial nature of this part of the harbor.

The identification of one or more buildings portions of which appeared in trench BE15-103 (west of trench BE10/11-70) in the southwestern harbor remains uncertain though it it/they may have been warehouses or work areas. The walls here were late Roman (fourth-fifth century), built of the same fossilized coral heads seen in contemporary structures elsewhere on the site. Of particular interest was the find of 40 fragments of garnets imported from India. Since garnets were exports from south Asia, these semi-precious stones are one indication of a vibrant trade with that part of the world in late Roman times, something already known from the results of excavations conducted at Berenike in earlier seasons.

Trench BE10/12/13/14/15-61 lay inside a late Roman temple. Excavations this season, however, reached pre-temple levels and revealed additional activity here the nature of which could not be identified. Additional work here next season should document more about this period of history in this part of the harbor.

#### Excavations elsewhere in Berenike

Outside the southwestern harbor remains of dismantled ships or wooden objects constructed using mortise-and-tenon techniques appeared in a number of trenches. Possible timber ship parts appeared in trench BE15-110 at the northern part of the site in a room whose function could not be ascertained this winter and in which work will continue next season. Found in a rectilinear shaped niche inside BE15-110, this ship timber or timber used to construct a large box made of carob wood (*Ceratonia siliqua*), preserved at least one large iron nail and several dowel holes (Figures 10-12). Carob is a hardwood derived from a Mediterranean species used by humans over the past 4000 years. It can grow to a maximum height of 15 meters. This is the first time our project has documented carob wood used in this capacity. Other remains of teak wood, likely from one or more dismantled ships, lay in the southeastern corner of this trench.



**Figure 10:** Niche on western side of a structure of unknown function in trench BE15-110. Note carob wood beam indicated by red arrow. Scale = 50 cm. Photo by S.E. Sidebotham.



**Figure 11:** Detail of carob wood beam seen in Figure 10. Note one of the dowel holes. Scale = 5 cm. Photo by S.E. Sidebotham.



**Figure 12:** Detail of carob wood beam seen in Figure 10. Note the head of a large iron nail. Scale – 5 cm. Photo by S.E. Sidebotham.

Excavations at the entrance to the so-called Serapis Temple in trench BE15-111 also recorded large quantities of cedar wood and some acacia (Figures 13-14), likely the

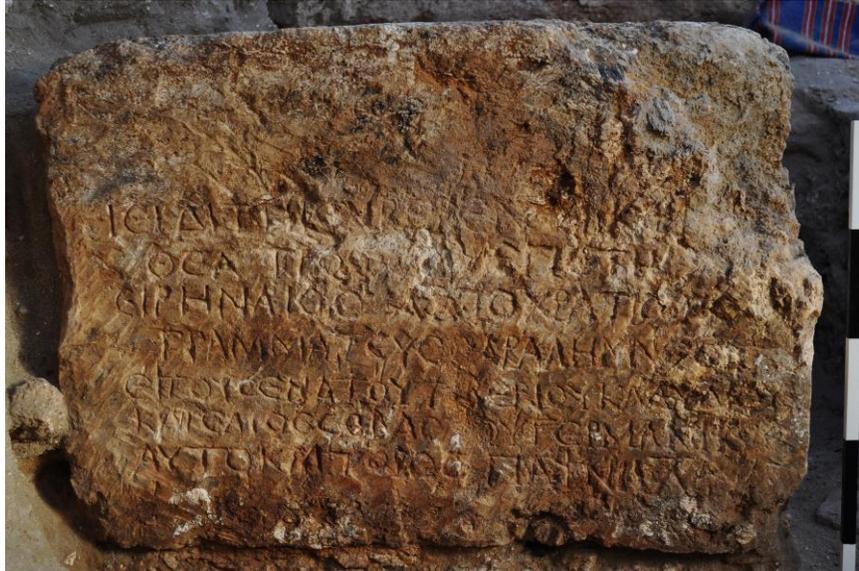
remains of roofing; much of the former had undoubtedly been recycled from dismantled ships. Also excavated in trench BE15-111 were numerous inscriptions in Greek dating from the first to at least the third centuries AD. Two of the monumental texts recorded secretaries. One was a dedication to Isis the Greatest Nurse Goddess in 49 AD (Figure 15) and the other secretary, in charge of an aromatics warehouse, dedicated his together with a statue to a prominent citizen of Berenike in 112/113 AD (Figure 16). None of the individuals in these two texts is otherwise attested at Berenike. Two other epigraphic fragments were late second to early third century in date (Septimius Severus and Caracalla) (Figures 17-18). Another fragment, the top of a stele, was Pharaonic in appearance, but clearly Roman in date. It bore (from left to right) images of Hathor/Isis, some emperor whose name is lost, Harpocrates standing on a podium and Min/Pan (Figure 19).



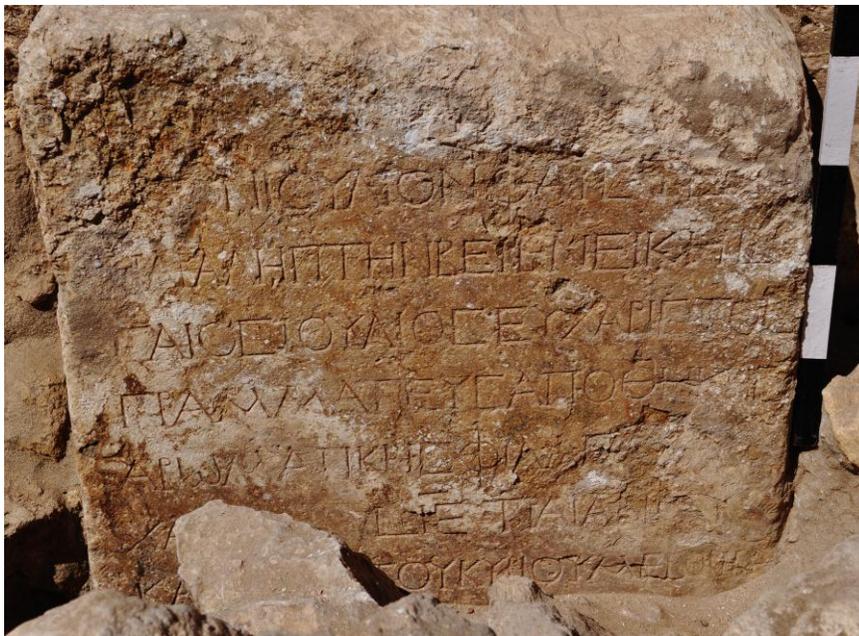
**Figure 13:** northwestern corner of trench BE15-111. Note marble revetment protruding from wall on left and cedar wood beams below photo scale. Scale = 20 cm. Photo by S.E. Sidebotham.



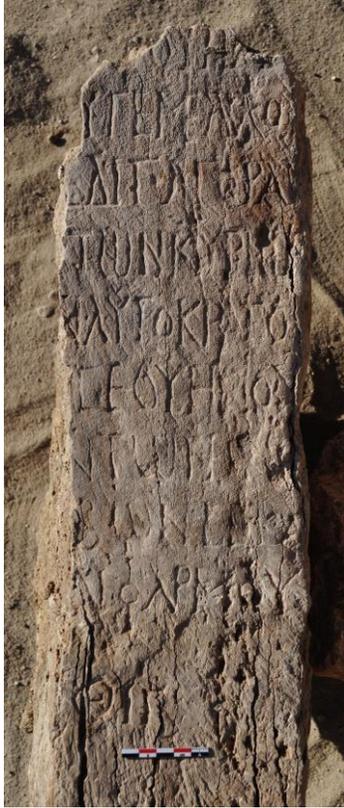
**Figure 14:** northeastern corner of trench BE15-111. Note underside of inscription fragment (above and right of the scale) shown in Figure 21 (below) and large fragments of cedar wood beams. Scale = 20 cm. Photo by S.E. Sidebotham.



**Figure 15:** Inscription dedicated by a secretary to Isis the Greatest Nurse Goddess in 49 AD. Scale = 50 cm. Photo by S.E. Sidebotham.



**Figure 16:** Inscription (records a statue) dedicated by a secretary in charge of an aromatics warehouse at Berenike to a prominent citizen of the city in 112/113 AD. Scale = 50 cm. Photo by S.E. Sidebotham.



**Figure 17:** One of the many inscription fragments from the so-called Serapis Temple. Carved in Greek during the joint reigns of Septimius Severus and Caracalla. Late second-early third century AD. Scale = 5 cm. Photo by S.E. Sidebotham.



**Figure 18:** Several of the many inscription fragments (a plaque in this case) from the so-called Serapis Temple. Carved in Greek during the reign of Septimius Severus (193-211 AD). Scale = 10 cm. Photo by S.E. Sidebotham.



**Figure 19:** Stele in Egyptian pharaonic style of Roman date depicts (from left to right) images of Hathor/Isis, some emperor whose name is lost, Harpocrates standing on a podium and Min/Pan. Scale = 10 cm Photo by S.E. Sidebotham.

Of potentially great importance were fragments of several sandstone stelai of Pharaonic date. A portion of the top left hand corner of one bore the cartouche of the Middle Kingdom Pharaoh Amenemhat IV (reigned ca. 1800 BC) (Figure 20) while the bottom of another may, or may not, have been part of that same text (Figure 21).



**Figure 20:** Upper right portion of an inscription on a sandstone stele in hieroglyphs. The cartouche records the Pharaoh Amenemhat IV (reigned about 1800 BC). Each black and white increment on the scale = 1 cm. Photo by S.E. Sidebotham.



**Figure 21:** Lower portion of an inscription on a sandstone stele in hieroglyphs. This fragment may have been part of the same inscription that appears in Figure 20. Scale = 10 cm. Photo by S.E. Sidebotham.

An inscription documented from the late Old Kingdom/Middle Kingdom/early New Kingdom Red Sea roadstead at Marsa Gawasis (between Safaga and Quseir, farther north of Berenike on Egypt's Red Sea coast) records an expedition sent by sea from that roadstead to Punt during the eighth year of the reign of Amenemhat IV. The bottom of the stele we found (in Figure 21) records year seven of a Pharaoh whose name is lost. If the two stelai fragments from Berenike (shown in Figures 20-21) are, in fact, from the same stone, then this text may well record a maritime expedition (perhaps to Punt) during the seventh year of Amenemhat IV's reign and may reveal that there was Pharaonic activity at the site some 1,500 years earlier than we previously believed. We plan to

excavate in this area during the 2015-2016 season with the hope of documenting additional information from the Pharaonic era.

Also in trench BE15-111 were portions of wall decorations on the frame of the door connecting what appeared to be an open courtyard (in trench BE15-111) with an interior room (in trench BE15-112) of the so-called Serapis Temple. These door frame decorations included incised lotus and papyrus plants (Figure 22) and a standing figure of a female deity (Figure 23). Huge fragments of thick marble revetment, both light gray/white and light green in color also littered trench BE15-111; these would have decorated either walls or floors or both. Excavations also recorded two fragments of white marble statuary.



**Figure 22:** Lotus and papyrus decoration of the southern side of an entrance into the so-called Serapis Temple. Scale = 20 cm. Photo by S.E. Sidebotham.



**Figure 23:** Standing figure (indistinct) likely of a goddess in Egyptian style. Decoration on the northern side of an entrance into the do-called Serapis Temple. Each black & white increment on the scale = 10 cm. Photo by S.E. Sidebotham.

Huge architectural blocks filled much of BE15-112, part of an interior room of the so-called Serapis temple. Joined to the putative outer courtyard excavated in trench BE15-

111 by a doorway partially blocked in antiquity, excavations in trench BE15-112 also documented portions of the structure's ceiling decorated with incised stars (Figure 24) and three joining fragments of a small stone plaque dating to the reign of Septimius Severus (193-211 AD) (Figure 18).



**Figure 24:** Portion of ceiling from the so-called Serapis Temple from trench BE15-112. Scale = 10 cm. Photo by S.E. Sidebotham.

Clearly, the elaborate decorative features, rich dedications and prominent location of the so-called Serapis Temple made it one of the premier public buildings in early and middle Roman-era (first-early third century AD) Berenike.

In the Ptolemaic area at the western side of the site (primarily dating third-first centuries BC) excavations continued on the early military defenses of the city (trenches BE14-97/BE15-104); these are the only significant Ptolemaic urban defenses known anywhere in Egypt. A large rectangular shaped shaft cut into bedrock immediately behind a section of these early city walls, along with a heavy stone counterweight, suggested the existence of a drawbridge here. Excavations of the shaft descended about 2.5 meters where five tunnels appeared (Figures 25-27). One of these, stretching 6-7 meters towards the east before turning northeast was evidently hydraulic in nature. The total length of this tunnel could not be traced due to its blockage by sand. Four other tunnels were also incompletely excavated. So, their dimensions and functions could not be determined due to lack of time; additional fieldwork here in winter 2015-2016 should allow a better understanding of all of these tunnels.



**Figure 25:** Overall view of trenches BE14-97/BE15-104 looking southeast. Red arrows indicate early Roman graves (described below in the text) and shaft containing five tunnels from the early Ptolemaic period. Photo by S.E. Sidebotham.



**Figure 26:** Trenches BE14-97/BE15-104 shaft cut into bedrock with five tunnels. View looking east. Tunnel at top right is hydraulic. Photo by S.E. Sidebotham.



**Fig. 27:** Trenches BE14-97/BE15-104 shaft cut into bedrock with five tunnels. View looking east. Tunnel to right of figure is hydraulic. Photo by S.E. Sidebotham.

In this area of Ptolemaic city defenses and hydraulic facilities (trenches BE14-97/BE15-104) excavations also recorded three human burials: two male and one female. All had grave goods, which allowed dating the interments to the first century AD (Figures 28-32). Their presence indicated that the earlier Ptolemaic hydraulic facilities had ceased to operate in that capacity by the early Roman occupation of the city.



**Figure 28:** Skeleton of an adult male wearing an iron ring (indicated by red arrow). First century AD. Scale = 50 cm. Photo by S.E. Sidebotham.



**Figure 29:** Detail of hand of skeleton in Figure 28 showing iron ring. Scale = 5 cm. Photo by S.E. Sidebotham.



**Figure 31:** Detail of skeleton in Figure 30 showing beads (indicated by red arrow). Scale = 10 cm. Photo by S.E. Sidebotham



**Figure 30:** Skeleton of an old man with grave goods (some of the beads were imported from India and iron ring: indicated by red arrows). First century AD. Scale = 50 cm. Photo by S.E. Sidebotham.



**Figure 32** Skeleton of tall adult female with part of an amphora covering her skull. First century AD. Scale = 50 cm. Photo by S.E. Sidebotham.

Excavations in the early Roman era (first century AD) pet cemetery continued from previous seasons and included scores of burials. Most were cats, a few dogs, a baboon and some vervet monkeys. Many still wore collars made of iron (**Figure 33**). One of these had been decorated with beads (**Figure 34**). Many of the bodies had been covered with broken pieces of pottery, which served as make-shift sarcophagi.



**Figure 33 (Left):** Skeleton of a pet cat. Note iron collar (indicated by the red arrow). First century AD. Scale = 5 cm. Photo by S.E. Sidebotham.



**Figure 34 (above):** Iron animal collar decorated with beads from the first century AD pet cemetery. Scale = 5 cm. Photo by S.E. Sidebotham.

Finally, following the 2013-2014 excavation season, study of Corona satellite imagery taken in the late 1960s/early 1970s revealed a large architectural complex north of the known northern limits of the city. These structures are not visible on Google Earth. Excavation of the foundations of a long, narrow building with three internal rectilinear shaped podia (trench BE15-105 and extensions) in this area (Figure 35) revealed nothing of its function since it had been almost completely cleared of artifacts by the latest users; analysis of the paltry quantity of finds did, however, indicate that its latest use was at the turn of the Christian era.



**Figure 35:** Foundations of a building of unknown function found north and outside of the city limits. Dated to the turn of the Christian era. Photo by S.E. Sidebotham.

### **Fieldwork in other areas of the Eastern Desert**

This primary focus of this part of the project comprised continued excavations of a cemetery containing the remains of long-horned cattle and continued surveying of a prominent Roman-era emerald mining settlement. However, the survey also investigated other sites in the region.

Discovered in 2009 from satellite imagery and first visited in 2010, excavations at the long-horned cattle cemetery in Wadi Khashab (**Figure 2**) began in 2012 and continued this season. This animal necropolis is a rare example from the first half of the second millennium BC in the Eastern Desert of Egypt and reflects the veneration of these large (1-1.5 tons each) bovines by pastoralists at that time (**Figures 36-37**).



**Figure 36:** Long-horned cattle cemetery at Wadi Khashab (about 2000-1500 BC) prior to excavation (in 2010). Photo by S.E. Sidebotham.



**Figure 37:** Detail of Figure 36 above. Note modern robbers' holes. Photo by S.E. Sidebotham.

Continued survey in the Eastern Desert resulted in the discovery of a large site hitherto unknown to western scholars. First reported by a Dutch resident of the Red Sea coast to Sidebotham in fall 2014, our survey visited these ruins twice this season (December 2014 and January 2015). This large settlement in Wadi Angoriyya comprises about 100 buildings (Figure 2). Dating to the late Roman period (fourth-sixth centuries AD) the community likely belonged to Christians escaping problems along the Nile at that time.

The project also continued to draw a detailed plan of the Roman-era emerald mining settlement at Nugrus (Figure 2) using a total station. This survey is part of another longer term endeavor that aims to study and document in detail approximately nine known ancient communities in a region the Romans called Mons Smaragdus (Emerald Mountain), which comprises approximately 300 km<sup>2</sup> of the desert northwest of Berenike. This intensively mined region was the only known source of emeralds anywhere inside the Roman Empire and was exploited from before the Roman period and into Islamic times. The project plans to publish a separate volume on the results of this long-term project.

Another site the survey team visited was the World War II RAF airfield at Hawarry not far from the coast (Figure 2). Bedouin informants first showed this to us in 2011. This season we spent additional time here taking measurements and additional photos. We will follow up by contacting RAF historians to learn more about this facility.

### Future Plans

The Berenike Project plans the next season of fieldwork for winter 2015-2016 pending adequate funding and the requisite permits from Egyptian authorities. We will concentrate in the southwestern harbor in part by continuing to excavate in and around trenches 61, 102, 103, 108 and 109 and outside the harbor area in and around trenches 104, 105, 110, 111 and 112. We are particularly interested in additional documentation of the early Ptolemaic urban defenses and hydraulic facilities (104) and the area of the so-called Serapis Temple (trenches 111-112). Excavations in the latter may shed additional light on Pharaonic-era maritime activity in the region, something completely unexpected prior to results from this season's excavations.