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Title: Berenike Project. Hellenistic fort, Roman harbor, late Roman temple, and other fieldwork: archaeological work in the 2012 and 2013 seasons.

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RESEARCH



ABBREVIATIONS

<i>AA</i>	<i>Archäologischer Anzeiger; Jahrbuch des Deutschen Archäologischen Instituts</i> (Berlin)
<i>ANM</i>	<i>Archéologie du Nil Moyen</i> (Lille)
<i>ASAE</i>	<i>Annales du Service des Antiquités de l'Égypte</i> (Cairo)
<i>AV</i>	<i>Archäologische Veröffentlichungen, Deutsches Archäologisches Institut, Abteilung Kairo</i> (Berlin–Mainz am Rhein)
<i>BAAL</i>	<i>Bulletin d'archéologie et d'architecture libanaises</i> (Beirut)
<i>BAH</i>	<i>Bibliothèque archéologique et historique</i> (Paris)
<i>BAR IS</i>	<i>British Archaeology Reports International Series</i> (Oxford)
<i>BASOR</i>	<i>Bulletin of the American Schools of Oriental Research</i> (Ann Arbor, MI)
<i>BCH</i>	<i>Bulletin de correspondance hellénique</i> (Paris)
<i>BdE</i>	<i>Bibliothèque d'étude</i> (Cairo)
<i>BIFAO</i>	<i>Bulletin de l'Institut français d'archéologie orientale</i> (Cairo)
<i>BSAA</i>	<i>Bulletin de la Société d'archéologie d'Alexandrie</i> (Cairo)
<i>BSFE</i>	<i>Bulletin de la Société française d'égyptologie</i> (Paris)
<i>CCE</i>	<i>Cahiers de la céramique égyptienne</i> (Cairo)
<i>EtTrav</i>	<i>Études et travaux. Travaux du Centre d'archéologie méditerranéenne de l'Académie des sciences polonaise</i> (Warsaw)
<i>FIFAO</i>	<i>Fouilles de l'Institut français d'archéologie orientale</i> (Cairo)
<i>GAMAR</i>	<i>Gdańsk Archaeological Museum African Reports</i> (Gdańsk)
<i>GM</i>	<i>Göttinger Miscellen</i> (Göttingen)
<i>IAMS</i>	<i>Institute of Archaeo-Metallurgical Studies</i> (London)
<i>JARCE</i>	<i>Journal of the American Research Center in Egypt</i> (Boston–Princeton–New York–Cairo)
<i>JEA</i>	<i>Journal of Egyptian Archaeology</i> (London)
<i>JGS</i>	<i>Journal of Glass Studies</i> (Corning, NY)
<i>JJP</i>	<i>Journal of Juristic Papyrology</i> (Warsaw)
<i>JRS</i>	<i>Journal of Roman Studies</i> (London)
<i>MDAIK</i>	<i>Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo</i> (Wiesbaden)
<i>OIP</i>	<i>Oriental Institute Publications</i> (Chicago)
<i>OLA</i>	<i>Orientalia lovaniensia analecta</i> (Louvain)
<i>PAM</i>	<i>Polish Archaeology in the Mediterranean</i> (Warsaw)
<i>PSAS</i>	<i>Proceedings of the Seminar for Arabian Studies</i> (London)
<i>SAAC</i>	<i>Studies in Ancient Art and Civilisation</i> (Kraków)
<i>SAK</i>	<i>Studien zur altägyptischen Kultur</i> (Hamburg)
<i>SAOC</i>	<i>Studies in Ancient Oriental Civilization</i> (Chicago)
<i>WVDOG</i>	<i>Wissenschaftliche Veröffentlichungen der deutschen Orient-Gesellschaft</i> (Berlin–Leipzig)

BERENIKE PROJECT HELLENISTIC FORT, ROMAN HARBOR, LATE ROMAN TEMPLE, AND OTHER FIELDWORK: ARCHAEOLOGICAL WORK IN THE 2012 AND 2013 SEASONS

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Abstract: Brief overview of two seasons of archaeological survey and excavation carried out in 2012 and 2013 at the site of Berenike on the Red Sea coast and in two sub-projects in the Eastern Desert: the prehistoric cattle cemetery at Wadi Khashab and the Roman-era emerald mines at Sikait and Nugrus. Highpoints of the work at Berenike included discovery of the Hellenistic fort and fortifications that mark the original settlement of the site in the third quarter of the 3rd century BC, continued clearance of harbor-related structures in the southwestern bay interpreted as the early Roman harbor of Berenike and the uncovering of an earlier phase of the late Roman harbor temple (so-called Lotus Temple) of the 5th–6th century AD in the harbor.

Keywords: Berenike, Red Sea, port/harbor, Hellenistic fort, city wall, Roman, temple, animal/cat/cattle cemetery, Eastern Desert

Earlier work at the site of Berenike, a Hellenistic and Roman (3rd century BC–6th century AD) harbor on the Red Sea coast of Egypt, had uncovered several features related to the Roman harbor located within the southwestern bay of the town (Sidebotham and Zych 2011). In the 2012 and 2013 seasons, the Project, a joint undertaking of the Polish Centre of Mediterranean Archaeology, University of Warsaw and the University of Delaware,

continued excavating in the area of the early Roman (1st–2nd century AD) stores in the harbor, the early Roman animal cemetery north of the harbor and the late Roman temple discovered in the entrance to the harbor bay. Following up on the results of an ongoing magnetic prospection of the site, it also opened a trench in the residential area on the eastern shore of the harbor bay. In a completely new development, archaeologists explored two

Team

Dates of work: 18 December 2011–13 February 2012; 27 December 2012–13 February 2013 and study season in SCA storeroom in Qift 17 February–3 March 2013

Co-directors: Prof. Steven E. Sidebotham, archaeologist, numismatist (University of Delaware; 2012, 2013), Iwona Zych, archaeologist (PCMA UW; 2012, 2013)

Sub-project field directors: Piotr Osypiński, Wadi Khashab Project (2012), Jean-Louis Rivard, Wadi Gemal Project (2012)

MSA representatives: Hosam Aboud Abd El Hamied (Berenike Project, 2012), Ahmed Sadiek Tawfik (Wadi Gemal Project, 2012), Farag El Shazly Mohamed Ali (Berenike Project, 2013), Ahmed Esmail Mahmoud Hassan, Mohamed Zaraqad (both Berenike Project, study season Qift, 2013)

Archaeologists: Dr. Parayil John Cherian (Kerala Council for Historical Research; 2012), Ignacio Crespo Liñeiro (ARGOS Arqueología; 2012, 2013), Ewa Czyńska (independent; 2012), David Fernández Abella (PhD candidate, Universidad de Santiago de Compostela; Berenike & Wadi Gemal, 2012; Berenike 2013), Hosam Aboud Abd El Hamied (SCA; 2013), Mahmoud Ahmed Hussein (SCA; 2012), Michał Musiał (independent; 2013), Joan Oller Guzman (University of Barcelona; 2013), Piotr Osypiński (Patrimonium Foundation; 2012), Joanna K. Rądkowska (independent; 2012, 2013), Katarzyna Pawłowska (student, Institute of Archaeology, University of Warsaw; 2012), Giulia Russo (student, University of Pisa; 2012), Ariane de Saxcé (graduate student, Université de la Sorbonne, Paris IV; 2012, 2013), Marek Woźniak (PhD candidate, Institute of Archaeology and Ethnology, Polish Academy of Sciences; Berenike & Wadi Khashab, 2012; Berenike, 2013), Anna Zgoda (independent; 2013)

Archaeologist/photographer: Kamila Braulińska (freelance; 2013), Bartosz Wójcik (freelance; Berenike & Wadi Gemal, 2012)

Papyrologists/epigraphers: Dr. Rodney Ast (Institute of Papyrology, University of Heidelberg; Berenike study season, 2013), Prof. Roger Bagnall (Institute for the Study of the Ancient World, New York University; Berenike study season, 2013)

Ceramologists: Dr. Krzysztof Domżański (Institute of Archaeology and Ethnology, Polish Academy of Sciences; 2013), Agnieszka Dzwonek (Polish Republic Ministry of Education scholarship holder; 2013), Dr. John W. Hayes (Oxford University; 2013), Dr. Roberta Tomber, chief ceramologist (British Museum; 2012, 2013), Monika Więch (PCMA UW scholarship holder, PhD candidate, Research Center on the Antiquity of Southeastern Europe, University of Warsaw; Berenike & Wadi Gemal, 2012; Berenike, 2013)

Glass specialist: Renata Kucharczyk (PCMA UW; 2013)

Bead specialist: Dr. Joanna Then-Obluska (independent; 2012)

Leather, bone and horn specialist: Mariusz Gwiazda (PhD candidate, Cardinal Stefan Wyszyński University, Warsaw; 2012, 2013)

Bone and horn specialist: Bénédicte Khan (PhD candidate, Paris I Panthéon-Sorbonne, Institut français du Proche Orient affiliate; 2013)

Textile restorer-specialist: Barbara Czaja-Szewczak (Museum of King Jan III's Palace at Wilanów; 2012)

Archaeobotanist: Dr. Jarosław Zieliński (independent; 2012, 2013)

Architect: Jean-Louis Rivard (10BASE-T Incorporated; 2012)

Geoarchaeologist: Anna Maria Kotarba-Morley (PhD candidate, Oxford University, Polish Republic Ministry of Education scholarship holder; 2012, 2013)

Geologist: Dr. Jerzy Trzciniński (University of Warsaw, Faculty of Geology; 2012, 2013)

Geophysicist: Robert Ryndziewicz (independent; 2013), Dawid Świąch (freelance; 2012, 2013)

Conservator: Delia Eguiluz Maestro (independent; 2013), Katarzyna Lach (PhD candidate,

features that turned out to belong to the earliest, Hellenistic architecture on site, proving the existence of major fortifications of the 3rd century BC.

The Eastern Desert survey, which is an integral part of the Berenike Project, visited and recorded new sites. More importantly, a season of documentation work was completed in the area of the Roman emerald mines and settlement in Wadi Sikait, contributing further

data to an ongoing project for the full documentation of this mountain location. In another important offshoot of the survey in the Eastern Desert, a team tested archaeologically the site of Wadi Khashab, a prehistoric cattle cemetery in the middle of the Eastern Desert mountains, located at the confluence of two major wadis forming a passage from the Red Sea coast in the east to the Nile Valley in the west.

GEOPHYSICAL SURVEY

The magnetic survey of the site continued using two Geoscan Research FM 256 magnetometers and covered 10 ha; the total coverage at the end of the 2013 season was estimated at 70% of the site. The southern and eastern shores of the town have now

been fully prospected, revealing anomalies interpreted as the presumed fossil-reef ridges that formed the southern edge of the town along the lagoon. The area around the church on the eastern city shore was also explored, mapping the relative low density

Jagiellonian University, Kraków; 2012, 2013)

Registrars: Katarzyna Bartoś (independent; 2013), Agnieszka Dzwonek-Kozieł (Polish Republic Ministry of Education scholarship holder; 2012)

Documentalists: Katarzyna Pawłowska (student, Institute of Archaeology, University of Warsaw; 2013), Mary S. Sidebotham (video log; 2013), Teresa Witkowska (MOYO; 2012, 2013)

Volunteers: Beata Dziejdzic (Poland; 2013), Norman Shelly (USA; 2012, 2013), Mirosław Wroński (Poland; 2012)

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of architecture in the northeastern part of the city. The survey on the eastern shore of the bay recorded excellently preserved town architecture under the sand hills, as well as the outlines of the presumed island in the harbor on which the late temple of Berenike was constructed. The topography of the southwestern fringes of the area colonized in the Hellenistic period was also mapped. In the center of the site, the fringe zone between the harbor area and the urban mound and the area of the early Roman trash dumps was surveyed. The magnetic map clearly indicates the course of streets as well as the layout of particular architectural complexes, including the area in front of and around the Great Temple of Berenike.

A geological reconnaissance, which complemented the results of core drillings in the harbor bay undertaken the previous season, included a ground-penetrating radar (GPR) survey of the bay and selected parts of the town. The major aim of this survey was to uncover and understand the geomorphology of the bay/lagoon at Berenike and environs and produce a 3D model of any subsurface remains. The transects lay across much of the site, *sabkah* zone, bay (at low tide), sand bar, etc. The total length of the transects surveyed and recorded was 24.56 km. The equipment included a GPS set from MALA Swedish producer: a ProEx Control Unit and a 250 MHz Shielded Antenna, as well as a Panasonic Toughbook. The frequency of the antenna was based on data from

previous coring surveys in 2011 and 2012 and the expectation that the sediments and rock formations of interest would be found no deeper than about 10 m. The data was recorded in GroundVision 2 software, a data acquisition software platform designed by MALÅ Geoscience for MALÅ GPR systems.

The raw data has already provided an indication of the basic outline of the bay and its profile. It has shown a number of archaeological and geomorphological structures and features in significant places, pointed out some unexpected changes in the underlying landscape and highlighted hidden features and structures (such as on the main road). It also generated a dataset, available nowhere else in the region, for the study of the *sabkah* and wadi fan. The results will be used in a geoarchaeological reconstruction of the town landscape in successive phases, determining the shoreline and the make-up of the early Roman port, which we now believe was a natural landing place rather than an architecturally complex harbor. The reconnaissance also contributed data on the geomorphological transformation of the site resulting to some extent from the changing climate between the second quarter to mid-3rd century BC, when the Ptolemaic fort was constructed, and the mid-6th century AD by which time the town had been deserted. Archaeobotanical studies of material from the trenches provided additional data for a reconstruction of Berenike's landscape.

EARLY HELLENISTIC FORT

The results of magnetic mapping of the western part of the site, began in 1999 and supplemented in 2009 (Herbich 2011: Fig. 2-3, 2-4; Zych and Herbich 2015),

contributed data that helped to interpret the excavation results of the Dutch–American project, which had located fragments of early Hellenistic architectural and

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archaeological remains in a number of trenches in the western part of the site. The nature of the finds had suggested storage and workshop facilities in this area, possibly linked to maritime activities.

Additional geophysical surveying in 2011 and more verifying work in 2012 led to the tracing of anomalies corresponding to a structure of substantial size. The preliminary interpretation, which has been developed since (Woźniak and Rądkowska 2014; Woźniak forthcoming) indicated the presence of a multi-phase defensive complex, a presumed fort dating most probably to the founding of the station by the first Ptolemaic rulers of Egypt sometime in the end of the first quarter of the 3rd century BC.

Exploration in 2012 confirmed the location of the northernmost defensive

part of the structure. Combined trenches BE12-83/85/86 (covering an area of 5 m by 7.5 m and 5 m by 5 m, joined diagonally at the corners) were placed to study a curious square anomaly observed on the magnetic map. It turned out to be the remains of a massive square structure which may be interpreted most likely as the corner tower of a larger complex (Sidebotham and Zych 2012a: 31–32). The walls, built of fragments of gypsum anhydrite, were very poorly preserved, the stone building material having been salvaged practically in its entirety for other building projects likely in Berenike probably in the early Roman period. However, the manner in which the foundations had been traced by cutting a wide trench in the bedrock, permitted the plan of the structure to be reconstructed. In turn, a thorough archaeological analysis

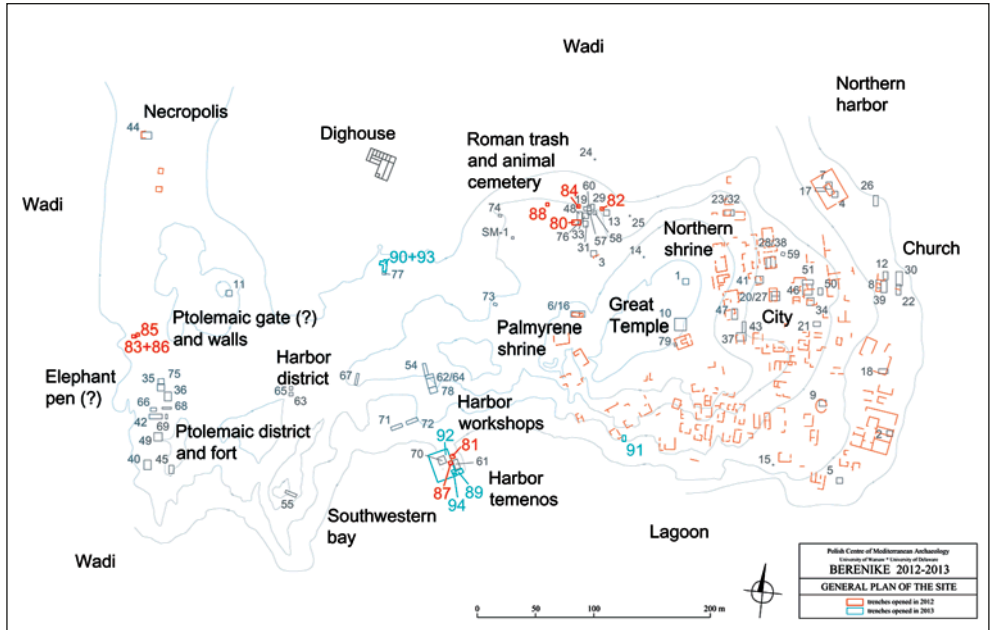


Fig. 1. Location of trenches excavated in 2012 (in red) and 2013 (in blue) (Plan B. Wojciechowski)

of the accumulations gave grounds for reconstructing the sequence in which particular trenches and then walls were made and constructed (Woźniak and Rądkowska 2014: 514–522). The leveling layers inside the foundation trenches, left undisturbed when the building stone was removed, yielded substantial quantities of storage wares, mainly amphorae, confirming the dating of the architecture to the 3rd–2nd century BC (R.S. Tomber, personal communication). The dating was narrowed down conveniently by two Hellenistic stamps on Rhodian amphora handles, originating from the second to third quarter of the 3rd century BC (Sidebotham and Zych 2012a: 31–32) [Fig. 4 top center]. The stamped handles came from the fill of the plunder trenches of Roman date, but they unquestionably point to the earliest occupation of this

part of Berenike. Coming from the same deposits was a whetstone made of reddish sandstone, which may have been used to sharpen the tools necessary for cutting the foundation trenches in bedrock. Finds included also a large animal shoulder blade (either camel or horse) with worn upper edge, which may have been used as a digging tool. These discoveries contributed new data on how fortifications were constructed in the early Hellenistic period.

In 2013, the project tested a linear anomaly traced on the magnetic map of the area north of the southwestern bay. Some remnants of gypsum anhydrite blocks on the surface suggested the presence of more substantial architectural remains. The badly robbed wall oriented ENE–WSW and documented in trenches BE13–90/93 measured 1 m in width at the base



Fig. 2. Corner tower of the early Hellenistic fort
(Photo S.E. Sidebotham)

(1.60 m including the footing). It had all the makings of a massive fortification; associated artifacts indicated an age going back to the founding of the settlement in the 3rd century BC while its robbing occurred sometime during the Augustan period (30 BC–14 AD). Taking advantage of the presence of the geophysical team, additional magnetic surveying was carried out in selected places on the fringes of what had already been surveyed in the northern part of the site in an effort to map the entire length of this enceinte. Preliminary analysis of the results of the combined magnetic prospection of the area (both previously and also during these seasons) suggests that this early Ptolemaic city wall could have started from the tower/small fort feature explored in the western part of the site (trenches BE12-83/85/86)

(Sidebotham and Zych 2012a: 31–32 and Figs 4–5). It extended in sections, reinforced at intervals by towers, straight across the neck of the peninsula on which the early Ptolemaic settlement was located, continuing northeast along the northern edge of the zone occupied by Hellenistic and early Roman trash dumps. This fortification system (northern ramparts and fortification of “fort”) secured by the sea on the northeast, the lagoon and harbor bay on the south and the marshy wadi bed on the west would have afforded protection to the Ptolemaic military and settlers, and the trade that passed through the harbor (Woźniak forthcoming).

Two human skeletons recorded relatively near the surfaces of BE13-90/93 were adult males though their ages and causes of death could not be established.



Fig. 3. Ptolemaic city wall(?) in trench BE13-90/93, view from the northwest (Photo S.E. Sidebotham)

Neither could their deposition be dated, there being no associated, chronologically diagnostic finds whatsoever. A general suggestion based on the stratigraphic evidence is that they postdated the robbing of the defense wall and, hence, would likely be no earlier than Augustan in date. In a similar case of burials being made in the ruins of robbed out remains of Hellenistic defensive architecture, several other modest adult male burials had been discovered the

year before in trench BE12-85. These were very poorly preserved, being practically just under the surface (Sidebotham and Zych 2012a: 32).

Excavations in BE13-90/93 also documented three or four species of clams/ mollusks comprising more than 130 kg of shells from levels corresponding to the Augustan-era robbing of the wall. These bivalve mollusks, which the 'Ababda workmen still eat, suggest that extensive



Fig. 4. Finds from Hellenistic contexts: top left, terracotta female figurine appliqué from a vessel handle (H. +5.8 cm); top center, Rhodian amphora handle with round knob stamp, 3rd century BC; top right, Ptolemaic coin, reverse and obverse; bottom, large mollusk shell used as a receptacle with traces of powdery ocher inside it (Photos S.E. Sidebotham, I. Zych)

meals, of which the shells would be the discarded refuse, were consumed in the area. One of these shells contained powdered red ocher [Fig. 4 bottom], while another had a stripe, 1.0 cm wide, painted lengthwise on its inside. Other finds included a small terracotta appliqué from a pot handle representing the goddess Isis; it was headless with an extant height of 5.8 cm [Fig. 4 top left].

In addition, excavations in BE13-90/93 recorded two graffiti written in a pre-Islamic south Arabian language, likely Hadramauti; these came from early Roman levels. Graffiti in Hadramauti from early Roman contexts had been documented in other trenches earlier; it is very likely that these had arrived at Berenike via the Hadramauti port of Qana' on the Indian Ocean coast of South Arabia; one recorded

in ligature Šaqr, the name of the royal palace at Shabwa, the Hadramauti capital (Sidebotham and Zych 2010: 12 and Figs 9–10; Sidebotham 2011: 74–75 and Figs 6-3A, 6-3B; Sidebotham and Zych 2012b: 138–139). Exact parallels for this ligatured monogram have been documented from Myos Hormos and from Qana' (Sidebotham 2011: 224; Sidebotham and Zych 2012b).

Extant ancient literary sources do not mention any fortifications constructed around the earliest Ptolemaic settlement at Berenike. So the remains of the putative tower or fortlet in BE12-83/85/86 and the robbed out wall remains in BE13-90/93 represent the only documented Hellenistic (early 3th–2nd century BC) urban fortifications now known anywhere in Egypt outside of Alexandria.



Fig. 5. Excavation area in the southwestern bay harbor; in the foreground, trenches explored in the harbor temenos; at back left, location of trench BE13-91 on the eastern shore of the bay. The mound in the background, rising to 7 m a.s.l., conceals the ruins of the town. Beyond that, Berenike's anchorage sheltered from the prevailing northerly winds by the mountainous Ras Benas Cape on the horizon (Photo I. Zych)

THE HARBOR TEMENOS IN THE SOUTHWESTERN BAY

The late Roman harbor temple lay on what was originally an island. In the late Roman period (4th century on), the sanctuary was probably a fairly isolated structure on the western fringes of the town; the southwestern harbor bay was, by that time, silted up and no longer operational [Fig. 5]. The shrine, oriented north–south, had internal dimensions of 8.50 m north–south by 4 m east–west. It was built of fossilized coral heads, but the north wall, east wall at its north end and west wall at its north end also incorporated

gypsum/anhydrite ashlar from an earlier complex connected with the “Square Feature” (trench BE10/11-70), which lay immediately northwest and west of the late Roman harbor temple. The latter structure was likely a Ptolemaic or early Roman-age construction (Sidebotham 2014: 609–611; Zych et al. 2015).

Excavations in 2012 and 2013 demonstrated that the late Roman harbor temple had at least two major phases of use, mainly in the later 4th–5th centuries AD, perhaps into the 6th, and seems to have been



Fig. 6. The late Roman harbor temple, general view of the excavation at the end of the 2013 season, looking northwest; the “Square Feature” in the background (Photo S.E. Sidebotham)

EGYPT

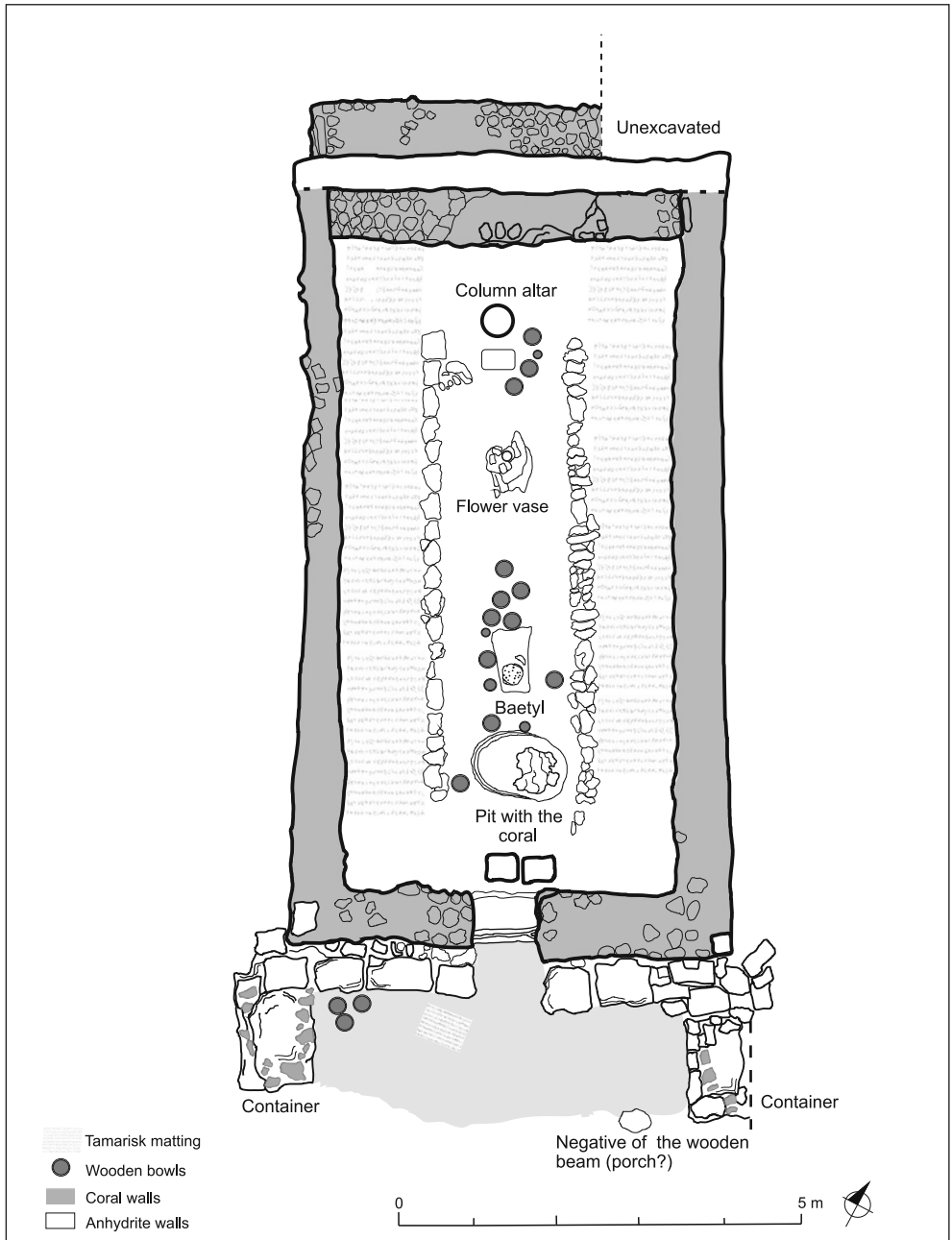


Fig. 7. Plan of the Lotus Temple in the first phase
(Drawing and digitizing J.K. Rądkowska)

dedicated to more than one deity. The earliest phase thus far excavated comprised leveling layers beneath the late temple. A faience figurine of Bes, an Egyptian god associated with childbirth who also promoted fertility and guarded against snakes and misfortune, was recorded in these layers. This amuletic figurine was 7 cm high and was pierced crosswise to be used as a pendant. It has numerous parallels both in Egypt and Nubia and is generally dated to the early Roman period. The level also yielded an iron netting needle about 16 cm long, as well as other finds that could be associated with early Roman life in the harbor (significantly, terracotta oil lamps and coins). There were also remains of fish stew(?) in pots, a parrotfish head and large clam shells associated with charcoal, suggestive of some kind of ritual foundation services conducted prior to the establishment of the late temple. The early material appears to have come from a disturbed context.

Contexts preceding the late temple were explored also during the 2012 season when excavations began in areas outside at the back (northern) and western side of the cella at its northern end; these trenches (BE12-81 and BE12-87) continued during the 2013 season [*Figs 7, 9*]. Finds from BE13-87 included a small cameo blank and a small portion, likely an appendage, of a large scale bronze statue, possibly from the earlier sanctuary comprising the “Square Feature”. These finds, complete with a coin of Philip Arab from the 5th year of his reign (AD 249), post-date the abandonment of the nearby “Square Feature”, dated 1st–2nd century AD (Zych et al. 2015), and its destruction in the middle Roman period. The gap between these events and the processes that actually took place in the

harbor sanctuary during this period still elude a plausible interpretation.

The late Roman harbor temple had a single narrow entrance facing south; a small courtyard lay just outside the entrance (trench BE13-89). Investigations in front of the temple cleared the outside of the entrance to the cella, revealing the two successive thresholds in the doorway. The lower one proved to be of palm wood. The flooring in the forecourt corresponding with the later phase of the temple was also made of tamarisk matting (for the late phase of the temple, see Rądkowska, Sidebotham, and Zych 2013). Some upper parts of amphorae were found on this level, possibly representing offerings that were brought to the temple and laid outside the entrance on two substantial stone benches or mastabas placed on either side of the doorway. These benches were made of recycled gypsum/anhydrite blocks [*Fig. 6*]. There were also two troughs also made of gypsum/anhydrite blocks, which were perpendicular to the outer ends of the western- and easternmost benches. Burned bricks and burned pieces of worked wood, as well as a circle of burned pebbles (possibly for cooking or burning offerings) could be evidence of a makeshift shelter that may have given shade from the scorching sun in the porch in front of the temple. At least half a dozen wooden bowls were found at the southwestern corner of the temple (trench BE13-94 to the west of the entrance). Clearing of the general area of the temenos for the surveying project produced several ordinary beads and a lamp fragment, confirming occupation of the area in the late period (4th–5th century).

In the first phase when the temple was constructed, the interior comprised two rows of bench-like features made of stones

and coral heads; these lay parallel to the outer east and west walls of the shrine [Fig. 7]. No evidence of a roof over this interior has been preserved, although it seems unlikely that one had not existed. Between the “benches” and the outer walls were layers of matting woven from local tamarisk shrubs (Sidebotham 2014: 602; J. Zieliński, personal communication; Rądkowska and Zych forthcoming). The matting had scattered atop it numerous bones of young ovicaprids, representing choice cuts of meat (M. Osypińska, personal communication), mixed with fragments of terracotta bowls made in Aswan (R.S. Tomber, personal communication; Sidebotham and Zych 2010: 16; 2012a: 34; Sidebotham 2014: 602; Rądkowska and Zych forthcoming). These faunal and ceramic remains suggest that high quality meals, undoubtedly sacred in nature, had been consumed here sometime likely in the 5th century AD.

Contemporary with these “benches” and located towards the northern interior end of the temple was a columnar shaped altar made of regionally quarried gypsum or anhydrite. The column/altar was broken and missing the topmost portion. Also associated with this phase were two smaller altars or incense burners made of gypsum or anhydrite situated in the northwestern corner. One of the altars/incense burners decorated in a South Arabian/Axumite style preserved on its top incinerated remains and bone fragments (Rądkowska, Sidebotham, and Zych 2013: 216, Fig. 4, altar to right; Sidebotham 2014: 603–604). There were many cultural, linguistic and religious affinities between southern Arabia and Axum throughout antiquity (see Isaac and Felder 1984); so, attributing this altar to one region or

the other, at least prior to the advent of Christianity in Axum, would be difficult. This altar had its base cut down to fit into its final setting. This indicates that it had been recycled, perhaps from some other location, and that it was, very likely, old by the time of its latest use in the temple. Since the Kingdom of Axum had officially converted to Christianity sometime in the first third of the 4th century, it is possible that the altar in question, clearly reused here from an earlier context, was Axumite, and that it had been made prior to that time. Otherwise the presence of Axumite religious activities in this clearly later 4th to 5th century pagan shrine would be most unlikely; any Axumite visitors to Berenike in the later Roman period would have gravitated to the 5th century church at the eastern edge of the site (Sidebotham 2014: 617–619). If of later 4th century manufacture prior to use in this phase of the temple, it is more likely that the altar decoration was inspired by South Arabian worshippers rather than Axumite ones. A damaged miniature stone temple pool of a type commonly found at other shrines in Berenike propped up this South Arabian/Axumite style altar (Sidebotham and Zych 2010: 17–18) and appearing throughout Nubia and in Meroë for extended periods of their histories (Kuentz 1981; Cunningham-Bryant 2012). Other miniature stone temple pools found in religious contexts throughout Berenike were likely offering or libation tables and must be evidence of cultic activities rather than funerary ones; none of these offering tables has been found associated with any burials in or near Berenike. Whether these objects can be connected with the veneration of Isis, a goddess popular in many periods throughout Egyptian

history, remains uncertain. The association of these temple pools or offering/libation tables with indigenous desert dwellers who might also be associated with the so-called Eastern Desert Ware pottery is an intriguing idea, as is the possibility that these cult objects might reflect Meroitic or Nubian groups dwelling at the port in late

antiquity (see Cunningham-Bryant 2012: *passim*).

Remains of 80 to 85 wooden bowls preserving charred residue of burned offerings lay in the central part of the temple between the parallel “benches” (Sidebotham 2014: 605; Sidebotham and Zych 2012a). Such bowls were features



Fig. 8. Set of metal finds from the “Lotus Temple”: top, figurine of an unidentified deity mounted on the top of a staff, front and side view after conservation; bottom left, bull’s head appliqué; bottom right, buckle(?) (Photos K. Braulińska, S.E. Sidebotham, T. Witkowska)

appearing in or associated with all shrines thus far identified at Berenike (Sidebotham and Zych 2010: 18–19), except the church. In most instances these bowls were badly decayed and the species of wood from which they had been carved could not be identified. One well-preserved specimen was, however, made of *dôm* palm wood (J. Zieliński, personal communication), a species found throughout the Nile Valley.

In the extreme northwestern corner of the cella near the columnar altar where excavations in 2012 uncovered a small hollow bronze head of a bull partially filled with lead (Sidebotham and Zych 2012a: 35 and Figs 14–15, 36), clearing operations in 2013 documented a lead-filled bronze statuette of a deity mounted on a staff made of an unidentifiable species of wood (H. 9.4 cm) (Sidebotham 2014: 605) [Fig. 8 top]. Excavations recovered this protome in deposits associated with later phases of the temple that had been left from place at the end of the previous seasons in fear of undermining the stability of this part of the wall. This statuette must have served as a standard for processional use and was discarded upside down in a far corner of the cella once it had lost most of its head. The surviving bottom part of the head suggests an animal-headed divinity, although it is impossible to ascertain which creature this might have been. The statuette holds both hands forward, the right raised and the fist clenched, as if holding some rod-like object, the left stretched out palm up. The figure is robed in a curious caftan that resembles nothing known thus far from Egypt. Conservation of the metal conducted in the storeroom at Qift did not reveal much in the way of decoration, although there is some, very tentative suggestion of a garland of circles or rosettes on the front.

The closest artistic parallels for the hollow partially lead-filled bull's head recovered in the late Roman harbor temple are with small-scale stone and bronze sculpture, both relief and in the round, from southern Arabia dating between the 2nd century BC and 2nd century AD (e.g., Antonini 2000: 317, No. 156; Sima 2005: 57, Fig. 6; Gunter 2005: 135, Pl. 10; 'Alī 'Aqil and Antonini 2007: 175, I.B.c.1 and I.B.c.2, 176, I.B.c.4). The bull's head had likely been removed from a larger statuette and then had subsequently been soldered onto a bronze plate pierced with two holes, no doubt for mounting onto some surface. Clearly, this bull's head was at least several hundred years old when it was associated with the 4th–5th century activities inside the temple. In Southern Arabia, the bull was predominantly a symbol of Almaqah, a solar divinity also having Dionysiac attributes; the bull was, however, also sacred to other South Arabian deities (Breton 1999: 124–125). A hybrid human-animal religious image is something that is, however, unknown in South Arabian art (A.V. Sedov, personal communication). Perhaps, then, the protome in the form of a human torso represents yet another deity not related to the bronze bull's head and whose identification remains unknown.

Nearby on the other side of the columnar shaped altar from where the bronze bull's head was found excavations uncovered a very worn AE1 coin of the Roman emperor Julian II (Augustus, AD 361–363) on the reverse of which was the representation of a bull. Three holes drilled through the coin suggested that it served as a pendant or decoration. We cannot be certain if this coin had any cultic connotations or whether it could be functionally associated with the bronze

bull's head or protome discussed above, but the representation of bulls in two forms found in close proximity inside the shrine is likely more than coincidental. The wear on the coin indicated that it had been in circulation for at least several decades before its loss or deposition inside the temple. Depictions of the bull may be an allusion to the ruler as protector of his subjects. It also had connotations of physical power and survival after death (Breton 1999: 125). There are old Near Eastern literary parallels and also classical Greco-Roman ones for the bull as ruler/protector (viz. Bull of Heaven in the Epic of Gilgamesh, *Iliad* 2.480–483; Dio Chrysostom, *Second Discourse on Kingship* 66–74). There was a long tradition of cattle and bulls associated with burials and religious functions from prehistoric times and later in the Eastern and Western Deserts of Egypt and

in Sudan (Murray 1926; Wengrow 2001; Brass 2003; 2007; see Judd 2007a; 2007b; see Sidebotham and Zych 2010: 23–24 and Fig. 59; 2012a: 41–42 and Figs 29–31).

Another cult contemporary with the bronze bull's head and protome seems to have been purely Egyptian and has antecedents dating back many millennia. In the center interior of the harbor temple in the area between the benches were numerous seeds of lotus flowers, Yemeni iris, helichrysum, other as yet unidentified botanical remains (J. Zieliński, personal communication; Rądkowska and Zych forthcoming) and a broken terracotta container, likely a flower pot (see Macaulay-Lewis 2006; Kenawi, Macaulay-Lewis and McKenzie 2012; Netzer 2013: 110–111); the wooden bowls noted above were also found in this confined area. In addition, in this central part of the temple between the



Fig. 9. Trench BE12-81 back of the late Roman harbor temple in the temenos, view from the northeast; at top right, the “Square Feature” and the collapsed wall (Photo S.E. Sidebotham)

EGYPT



Fig. 10. The harbor temenos: top, plan for the end of the 2013 season; bottom, general view of the trenches from the northwest, showing the “Square Feature” and the lying walls around it in the foreground and the late Roman harbor temple in the background (Photo S.E. Sidebotham; measurements and plan R. Ryndziejewicz, Berenike Project, PCMA UW)

“benches,” there was a large piece of vesicular basalt roughly in the shape of an egg and also a pit, oval in plan, originally surrounded by a wooden partition portions of which were extant (Sidebotham 2014: 606–607; Rądkowska and Zych forthcoming). The inside of the pit preserved a huge chunk of coral reef. This combination of finds taken together suggests the representation of one of the very early Egyptian creation myths. This story recounts the receding primeval watery chaos (Nun) from which emerged the first *terra firma* in the form of a pyramid shaped mound (*benben*). The cosmic egg was also a representation of Nun and *benben* (Tyldesley 2010: 37–41; see Wilkinson 2003: 117–118). Atop this appeared the first terrestrial life in the form of the lotus plant.

It is also possible that the vesicular basalt object served as a type of *baetyl*, venerated in pre-Islamic southern Arabia, and that the putative benches were, in fact, areas upon which visitors could circumambulate the stone in a clockwise direction (J. Rądkowska, personal communication). We cannot determine whether the ritual meals consumed in this area, and noted above, took place in conjunction with this putative circumambulation or whether this was related to other cult activities. The arrangement at the entrance to the temple and its interior between the benches in this period precluded any other access to the shrine interior except in a clockwise direction around the cult objects (columnar shaped altar, lotus flower pot, basalt stone, wooden bowls and pit with the coral) that lay between the benches.

Other charred remains included frankincense, fig seeds, emmer wheat, barley, celery, cedar, acacia and tamarisk (J. Zieliński, personal communication).

They indicate a wide array of botanical offerings made inside the temple in the late Roman period.

Project ceramologist Roberta S. Tomber reports that there were Mesopotamian/Persian-made torpedo jars from throughout the excavation levels uncovered inside the late Roman harbor temple. This suggests contact indirectly with this area via one or more ports on the Indian Ocean coast of South Arabia, most likely Sumhuram/Khor Rori (in Oman) or Qana' (in Yemen). This cargo may well have come along with the South Arabian cult we postulate to have been venerated inside this religious edifice.

The location of this late Roman harbor temple and its relatively rich interior appointments suggest that it may have benefited from or participated in the revived Roman commerce in Berenike at that time. It is not clear when this harbor temple ceased to function, but it appears to have fallen out of use before the port itself was finally abandoned sometime before the middle of the 6th century AD.

Excavation and analysis of the early installations documented inside the late Roman harbor temple in the 2012 and 2013 excavation seasons supplemented evidence from previous seasons. Offering bowls with severely burned interiors were made of *dôm* palm wood. The offerings identified among the charred remains inside these bowls included resins of different kinds, grains, flowers, fruit and aromata: lotus flowers, cedar wood, wheat, celery, figs, balsam apples, basil and barley. Further evidence was found of ritual offerings, identified in previous seasons, in the form of bones of young ovicaprids obviously representing choice cuts of meat, brought and deposited in characteristic

small bowls of painted Aswan ware on the ground covered with clay-plastered tamarisk matting around the offering installations in the center of the temple.

The combined results of work in the trenches situated in the area of the harbor temenos have shed more light on the earlier phases of the late Roman harbor temple and its physical relationship with features preceding and contemporary with its existence. Sections of walls, foundations and stone pavement, as well as cuts made for the later buildings will require more investigation.

EASTERN SHORE OF THE BAY

Substantial architecture appeared as anomalies on the magnetic map of the eastern shore of the southwestern harbor bay of Berenike. Analysis of the magnetic map revealed large buildings separated by streets that had a different orientation than the late (4th and 5th century AD) architecture investigated on the main city mound east and northeast of the so-called Serapis temple by the Dutch–American Project in the late 1990s and early 2000s.

The surface remains across the entire southern part of the site prior to exca-



Fig. 11. Corner of a house with double, internal and external staircase, on the eastern shore of the southwestern harbor bay, view from the south (Photo A. de Saxce)

vation had the same general appearance as those seen in most other areas of the central and eastern parts of the site. That is, large numbers of fossil coral heads had clearly formed parts of walls of the late Roman city. In this area, which lay east of the late Roman harbor temple at the edge of the inhabited area at the extreme western end of the southern part of the site, trench BE13-91 aimed to identify the character and date of a portion of one of these buildings. Previously, the project had excavated very little in this vast southern area of the site. Only a single trench (BE95-5) and a small probe (BE96-15) had been investigated at the extreme eastern end of the southern part of this area; both had been late Roman in date (Sidebotham 1996: 76–82; 1998: 109).

Trench BE13-91 was placed in a spot where the magnetic map showed anomalies forming the corner of a room adjacent to a street and a corridor leading inside a structure featuring apparent opposing twin apses at the far end. Excavations initiated just south of this apsed feature in trench BE13-91 revealed the types of walls typically encountered in several trenches

excavated in other areas of the late Roman city, that is, built of fossil coral heads with quoins comprising white gypsum/anhydrite ashlar, most likely recycled from some earlier structures.

Investigations in BE13-91 revealed domestic occupation and apparent use for some workshop activities involving fire. The house was large by Berenike standards and is estimated to cover over 100 m². The unusual feature in this trench — in fact unique at Berenike thus far — was a very thin wall, only about 0.40 m thick that had staircases leading from ground level in the south up towards the north against both its eastern and western faces [*Fig. 11*].

As had been the case with trenches excavated over the years in the so-called late Roman commercial–residential area in the center of the city, between the Great (Serapis) Temple on the one hand and the Christian ecclesiastical structure on the other, these types of buildings were clearly multiple-storied. Pottery dates for this phase of excavations in BE13-91 ranged from the mid/late 4th into the 5th century AD. Further work will be needed to interpret this curious building arrangement.

ANIMAL CEMETERY IN THE RUBBISH DUMP

Exploration of trench BE12-80 in the early Roman rubbish dump (known from earlier research by the Project), confirmed the presence of an animal cemetery identified in the 2011 season in trench BE11-76 (see Sidebotham and Zych 2012a: 38 and *Fig. 23*). The intentional burial of animals, especially cats and dogs, has been confirmed for contexts starting with the late Ptolemaic/early Roman period and reaching into late antiquity (subsurface

remains dated by pottery evidence to the 4th–5th century AD).

A late date has been assigned tentatively to two cairn burials observed on the surface in trench BE12-80. These small low elongated stone tumuli marked the location of pit graves; one of the two graves yielded human bones, apparently of an adolescent [*Fig. 12*]. There is no contextual archaeological material from the graves to corroborate the dating, the only indication



Fig. 12. Cairn burial of an adolescent in trench BE12-80, section view looking east (Photo S.E. Sidebotham)



Fig. 13. Imprints of animal hooves(?), surface excavated in trench BE12-80; this context yielded the mosaic face beads shown in Fig. 14 (Photo S.E. Sidebotham)

EGYPT

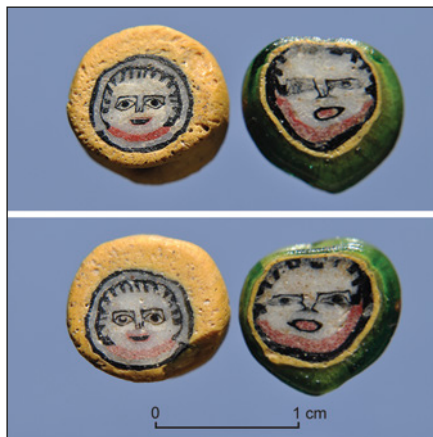


Fig. 14. Tabular face beads, view of opposite sides (Photos S.E. Sidebotham)



Fig. 15. Finds from the early Roman rubbish dump: top, presumed wooden mummy label, left, inscribed plaster jar stopper; center right, barbotine cup; bottom right, "Frog" lamp (not to scale) (Photos S.E. Sidebotham)

being the form of the tomb, for which there are plenty of parallels from the Eastern Desert.

The same area where animals were buried intentionally also served other purposes, as demonstrated by a pit full of post-consumption remains of sheep or goats. Animal cemeteries from the Roman era in Egypt are quite rare and detailed recording of this one should provide a plethora of information on this practice at this point in Egyptian history.

RUBBISH DUMP

Trenches excavated during 2012 and 2013 revealed more about the early Roman trash dump, which had already provided such a wealth of ostraka, papyri, plaster jar stoppers and other written documents, as well as both organic and inorganic artifacts and ecofacts in earlier seasons. Pottery, which consisted of a more or less expected array of storage and transport wares, also included an example of fine barbotine tableware [Fig. 15]. Jar stoppers were in evidence, as exemplified by an inscribed plaster one found complete [see Fig. 15]. Glass was plentiful and represented, again, by an abundance of examples of luxury vessels of clear glass with cut faceted decoration. Other finds comprised artifacts of wood and faience, the former including a narrow piece of wood perforated at one end, inscribed in Greek on two sides, presumed to be a ticket or possibly a mummy label [see Fig. 15], and bronze and iron. There was a large piece of coconut shell among the plant remains. Archaeobotanical studies of the flora revealed the presence of flowers that could not have been found on site in the wild; hence, they would

have been potted and brought in via the trading channels.

Unique were two glass tabular beads, representing human faces [Fig. 14]. Beads of this kind represent luxury Roman jewelry and were produced mainly in the 1st century AD (Spaer 2001: 124; see also in this volume, Then-Obluska 2015: 761–762 with further references. Finds of beads like these are widely distributed, e.g., Palmyra (Witecka 1994: 80–81, PlsII:12, V:1) and Barāqish, Yemen (Antonini 1999: 64, 66, Fig.19, dated 100 BC–AD 100). Our two examples were presumably lost by their owner in a part of the rubbish dump area that seems to have been mucky ground at the time of deposition, marked with several rounded imprints resembling animal hooves [Fig. 13].

An intact top of a “Frog” lamp represented a later chronological horizon, more likely a 2nd–3rd century date, or later [see Fig. 15]. Its presence is cautionary, reminding that the early Roman rubbish dump has a very thin surface scattering of trash from the 3rd and even 4th–5th centuries.

Analyzing the finds, one may observe a shift in the nature of the rubbish as the exploration moves north and northwest. This reflects the fairly obvious conclusion that rubbish dumped in different parts of the area came from different sources. Further studies of the material from the different trenches (the Project has already excavated some 20 trenches of varying sizes in this large trash dump) could lead to a better understanding of how this area behind, that is, to the north, of the early Roman harbor bay and the city proper in the east was used over the course of the existence of the town and harbor.

SURVEY IN THE EASTERN DESERT

Survey work included a return visit to Shenshef, a site 21.3 km southwest of Berenike. Detailed site intensive survey work and excavation here in the 1990s by the Berenike Project had revealed a late Roman (mainly 4th–6th century AD) settlement thought to have been of relatively high status based upon the

architectural remains and evidence from some of the trash dumps (summarized in Sidebotham 2011: 275–276). In winter 2013 additional photography as well as videography took place here, as did the collection and analysis of surface sherds and the recovery of a single unidentifiable billon tetradrachm of the 3rd century AD.

EXCAVATIONS IN THE CATTLE CEMETERY IN WADI KHASHAB

Initial survey work in 2010 and excavations begun in 2012 documented the burial of at least one bull [Fig. 16]. Archaeo-

zoological examination identified the bones as prehistoric cattle. Fieldwork also documented sherds, all apparently from



*Fig. 16 Wadi Khashab; stratigraphic trench excavated in 2012
(Photo P. Osypiński)*

a single small handmade open bowl; the vessel may represent later activity at the site, demonstrating continued use of the ceremonial center after the initial deposition of the cattle. The closest parallels for the bowl come from C-Group contexts (domestic and funerary) from the end of the Middle Kingdom and the Second Intermediate Period (2nd millennium BC) in Nubia, Upper Egypt and the adjacent deserts (Gratien 2000), in particular a few examples from the settlement of Wadi el-Sebua, which are very similar to the specimen fragments from Wadi Khashab. Those recently found

and still unpublished are reported from Elephantine Island and from Hierakonpolis (D. Raue, personal communication; R. Friedman, personal communication); another recently reanalyzed from the Scandinavian Joint Expedition collection at Uppsala University, is from site 176 in the Second Cataract region (A. de Souza, personal communication).

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