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Results of the Winter 2024 Excavation Season at Berenike (Red Sea Coast), Egypt

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Abstract: Results of the Winter 2024 Excavation Season at Berenike (Red Sea Coast), Egypt

The winter 2023-2024 excavations at Berenike by the US-German-Dutch-led team excavated all or portions of nine trenches in three areas: the entrance and portico of the Isis temple, the early Roman trash dump/animal cemetery, the Ptolemaic hydraulic facility, and the Northern Complex. Analysis of finds (ceramic, glyptic, basketry, matting and cordage, glass, coins, and other metal finds) refined the chronology and provided additional data about life at the site, especially in the centuries of the Common Era. Study of the textual evidence excavated from the early Roman trash dump/animal cemetery expanded knowledge of supply and logistics at the site. Noteworthy among these was a large Greek papyrus letter. It sheds light on communication practices and on the transfer of money and goods both to and from the port. Excavations also recorded at least 100 additional pet burials from early Roman times. A robber hole excavated in the floor of the Isis temple portico recovered fragments of Hieroglyphic texts and figural decoration that once adorned this area. The latter included images of Osiris and Min and, likely, depictions of Trajan. Excavations documented Hieroglyphs and Egyptian-style architectural and figural depictions as well as sculptural remains in the Northern Complex. Closest parallels for some of the wall decorations here dated to the period of Ptolemy VIII. A stele excavated during the winter 2023 season, but left in situ in the Northern Complex at that time and dated to the reign of Cleopatra VII, was removed this season for further study.

Introduction

The Berenike Project of the Universities of Delaware, Heidelberg and Leiden began excavations this season on December 31, 2023, and ended on January 27, 2024.¹ Berenike was a Ptolemaic-Roman 3rd century BC-6th century AD) port on the Red Sea coast of Egypt (Pl. XVII 1) that had extensive commercial, cultural and

political contacts with areas as far west as the Iberian Peninsula and northwestern Africa, as far south as the Indian Ocean coast of East Africa, and as far east as Java (Indonesia). Excavations started in 1994 and, as of the end of the 2024 season, all or portions of 171 trenches had been excavated. Previous reports provide more background details.²

This season the team, which comprised archaeologists and specialists from the USA, Poland, Germany, the Netherlands, India and Egypt,³ excavated portions

1 This project is distinct from that directed by Mariusz Gwiazda though both have permits granted by the SCA and issued through the Polish Centre of Mediterranean Archaeology (PCMA) in Cairo. Co-directors of the project reported here are: Steven E. Sidebotham (University of Delaware), Rodney Ast (Heidelberg University) and Olaf E. Kaper (University of Leiden). Funding this season derived from the Honor Frost Foundation in the UK, various offices of the University of Delaware, the University of Heidelberg, Stichting Mehen, Stichting Huis van Horus, Mr. Norman Shelly, Mr. William Whelan, and several anonymous donors. We extend our gratitude to Dr. Anna Wodzińska and her assistant Karolina Wolszczak of the PCMA in Cairo for securing the permits and providing critical logistical support. We thank Mr. Samir Hammam and Mr. Mustafa El Kirdani of the Wadi Sabarah Lodge for providing accommodations just days prior to the start of fieldwork. The SCA Permanent Committee, Dr. Mostafa Waziri (Secretary-General of the Supreme Council of Antiquities) and Dr. Nashwa Gaber Mohamed (Director of Foreign Missions Affairs and Permanent Committees) graciously granted permits while Mr. Abdel Rahim Elgamey (General Manager of the Red Sea), Mr. Hany Ebeid (Chief of Inspectors) and Mr. Mahmoud Hussein (Manager of Excavations in the Red Sea area) in Quseir, and inspectors Zakaria Ibrahim Abbass and Mahmoud Hussein provided critical support while in the field. Local data storage in Heidelberg was made possible by SDS@hd.

2 There is a massive bibliography resulting from excavations at the site since 1994: (not exhaustive) S.E. Sidebotham – A.M. Hense – H.M. Nouwens, *The Red Land. The Illustrated Archaeology of Egypt's Eastern Desert* (Cairo, New York 2008); S.E. Sidebotham, *Berenike and the Ancient Maritime Spice Route* (Berkeley, Los Angeles 2011); see also previous reports on Berenike in *Thetis* vols. 24-28 (2019-2023). Full references to volumes published on the results of the 1994-2000 and 2008 seasons of excavations at Berenike edited by Sidebotham and Wendrich may be found in Sidebotham 2011 loc. cit. (same note).

3 The team in alphabetical order by last name: Alitsia Ast (assistant registrar), Quintin Ast (general assistant), Rodney Ast (co-director, Greek-Latin papyrologist/epigrapher), Uttara Babu (archaeologist), Marta Bajtler (archaeologist), Nicholas Bartos (ceramicist), Marianne Bergmann (sculpture specialist), Kamila Braulińska (small finds photographer), Paul J. Cherian (general assistant), Olaf E. Kaper (co-director, Egyptologist), R.C.A. Geerts (ceramicist), Renata Kucharczyk (glass specialist), Julia Lougovaya (papyrus conservator, Greek-Latin epigrapher, assistant registrar), Annance Minneboo (archaeologist), Marta Osypińska (faunal specialist), Piotr Osypiński (archaeologist),

of nine trenches (BE22/23/24-135, BE23/24-152, BE23/24-161, BE24-166-171). Three (trenches 135, 152 and 168) lay near the entrance and in the portico of the Isis Temple; two were in the Early Roman trash dump/animal cemetery (trenches 161, 171); one was in the Hellenistic/Ptolemaic hydraulic-bath-well area (trench 167) and the remaining three were in the so-called “Northern Complex” (trenches 166, 169-170) (Pl. XVII 2).

Trenches 135, 152 and 168 (entrance to the Isis Temple)

Excavations in 2024 concentrated in the Isis Temple (Pl. XVIII 1) towards the southeastern and eastern end of the entrance (Pl. XVIII 2) and in the temple portico. At the temple entrance and portico two trenches continued from the 2023 season: trench 135 (0.80 m N-S × 1.60 m E-W), which comprised a robber hole (Pl. XVII 2 and XXI 1), and trench 152 (9.7 m N-S × 2.5 m E-W) (Pl. XVII 2 and XVIII 2-XIX 2).⁴ Excavations began only this season in a third trench (168), with dimensions of 9.7 m N-S × 2.5 m E-W (Pl. XVII 2 and XVIII 2-XX 2). Trench 168 was an eastward extension of trench 152 and was intended to document the continuation of the Isis Temple staircase entrance and the walls flanking the stairs to the north and south of it.

There were two parts of trench 168: the northern one, directly over the staircase, and the southern one, over the walking surface beyond the staircase. In total, the staircase has nine steps including those discovered in trench 152. Excavations within the staircase exposed various construction phases of the temple entrance. The lower three, eastern-most steps belong to the earliest phase. The first two (lower-most) steps are the best preserved and were made from single blocks. Two walls flank the northern and southern sides of the staircase, which was first documented in trench 152. The fragment of the northern wall discovered in trench 168 is probably from the same construction phase as the staircase, as the steps touched the wall. This wall also varied significantly from that portion exposed in trench 152; it comprises three rows of massive blocks and is 0.93 m high. The width is unknown, as either a later superstructure rested on top, or collapse from another structure located nearby covered it. The top row

of the original wall consisted of nicely worked blocks, gently undercut on the front and rounded on the top. The exposed section also does not have the same axis as that part excavated in 2023, relative to which it moves further north. This portion is probably the original structure associated with the staircase, while the portion from trench 152, built from partially reused blocks, had been added later directly onto the steps. Also related to the staircase structure are remains of pavement, which probably covered the entire space at the foot of the staircase between the northern and southern walls.

The southern wall, which came from a later construction phase, was partially erected on the staircase and partially on a layer of trash that had accumulated south of it. The portion exposed in trench 168 consists of two rows of massive blocks, including one that is 2.10 m long. The construction of this part of the wall is different from the one excavated in trench 152. Despite the differences, the two portions were connected and formed a wall built at the same time. Excavations in 2023 and 2024 recorded no traces of the original southern wall. Therefore, the original N-S width of the staircase remains unknown. Later, when the southern wall was already standing, the width of the staircase ranged from 4.40 m on the lowest (easternmost) step to 3.30 m on the highest (westernmost) step. The E-W length of the staircase is 3.40 m.

During the same phase two columns on opposite sides and at the bottom of the staircase, which stood next to undestroyed parts of the pavement, were added. Each of the preserved columns consists of a broken shaft partially supported by the respective northern or southern wall by which it stood. The northern column, with a height of 1.26 m and a diameter of 0.40 m has a base that stood on a partially destroyed pavement slab and was additionally supported by small stones (Pl. XIX 1 and XX 1, arrow at top). The southern column, with a height of 1.30 m and diameter of 0.30 m, stood partially buried in a trash layer that had been deposited where the pavement was missing (Pl. XIX 2 and XX 2, arrow points to area of missing pavement). Smaller stones had also been added around its bottom for stability. Both the northern and the southern walls and remnants of pavement continued into the eastern bulk.

Excavations in trenches 152 and 168 recorded the bottom of the staircase entrance marked by two columns, noted above, that had clearly been recycled to their final positions sometime in late antiquity. South of the retaining wall that defined the southern limit of the staircase was a dense layer of Late Roman-era trash (4th-6th century AD: much the same as documented from this area in 2023) and beneath the trash and at the bottom of the stairs – on both sides of the southern retaining wall – were remains of Late Roman-era walking surfaces (Pl. XX 1, arrow at bottom).

Of special interest was the documentation of substantial quantities of copper alloy fragments, which appear to have been, at least in part, remains of deliberately

Szymon Popławski (architect), Stephanie Rice (cordage, matting, basketry specialist), Steven E. Sidebotham (co-director, field photographer, numismatist), Ingo Strauch (Indologist, epigrapher), Willeke Z. Wendrich (cordage, matting, basketry specialist), Marek A. Woźniak (archaeologist, camp organizer), Iwona Zych (registrar), Mahmoud Samir Hussein (metal conservator), Kevin Viji (archaeologist), Madhavi Kunneriath (archaeologist); Egyptian staff: Ahmed Abdelmohsen (driver), Waleed Mohammed Asr (cook), Abdel Karem Abdel Wahad Samir (cook's assistant).

4 For these trenches in the 2023 season see S.E. Sidebotham – R. Ast – O.E. Kaper – M. Bajtler – N. Bartos – R.C.A. Geerts, Results of the Winter 2023 Excavation Season at Berenike (Red Sea Coast), Egypt, *Thetis* 28 (2024) 7-11.

hacked up portions of bronze statues (examples: fingers in Pl. XXXII 3) found in very thick, windblown sand layers immediately above the staircase entrance to the Isis Temple (see below for discussion by M. Bergmann and I. Zych and M.S. Hussein). These bronze statues of varying sizes, which once adorned the temple courtyard, were, at some point in late antiquity, the target of people looking for sources of metal that could be recycled.

In trench 135, excavation continued in 2022 and begun late in the 2023 season, excavation was continued in a robber hole that pierced the paving stones at the southern end of the portico east of the Isis Temple courtyard (Pl. XVII 2 and XXI 1).⁵ This relatively small sondage, in which a small stone head of Serapis had been recovered in 2023, measured 0.80 m N-S × 1.60 m E-W.⁶

Large, rectilinear-shaped blocks were visible in this robber hole in 2023, but these were documented and removed only this season. Some of these blocks are decorated and bear Hieroglyphs and the Pharaonic-style image of the Roman emperor Trajan (ruled 98-117 AD) (Pl. XXIII 1).

Extensive wear on the blocks suggested that they remained on the temple façade for some time prior to tumbling to the ground and eventually being deposited in the robber trench for undetermined reasons at a date that remains to be ascertained. A synopsis of these decorated blocks (by O.E. Kaper) appears below.

Trenches 161 and 171 (Early Roman trash dump/animal cemetery)

These two 5 m × 5 m trenches (Pl. XVII 2; XXI 2; XXII 1-3) lay adjacent to one another in the Early Roman trash dump/animal cemetery in the northern part of Berenike. The northeastern corner of 161 was also the southwestern corner of 171.⁷ Excavations in trench 161 – begun as part of the PCMA excavations in December 2023 – documented approximately 100 animal burials, predominantly cats and kittens as well as a few dogs, puppies and monkeys (Pl. XXI 2).

Excavations also documented the burials of two calves in trench 161. A potsherd covered the skull of the larger and northernmost skeleton. These bovines had been, most likely, ceremonial offerings related to the erection of a shrine in the mid-1st century AD (Pl. XXII 1). One touching burial comprised a baby monkey hugging a kitten (Pl. XXII 3).

Some of the animals still wore iron collars (Pl. XXII 2 and XXIII 4).⁸ There were also examples of identification

tags or other restraining devices made of wood (Pl. XXIII 3).⁹ Many animals had been buried inside or beneath broken potsherds, while some were wrapped in textiles before placement in or under the ceramic potsherds associated with their deposition. Excavations in the Early Roman trash dump/animal cemetery during this and previous seasons have now documented approximately 750 separate animal burials.¹⁰

Clearly, these creatures were cherished companions of their human owners. In addition, excavations here recorded a large quantity of pottery, basketry and other artifacts including about 100 ostraka and jar inscriptions in Greek, plaster amphora stoppers (Pl. XXIII 2) and a papyrus roll from the late 1st/early 2nd century AD (Pl. XXIII 5 and XXXII 2). Excavations also documented a broken waxed wooden tablet (Pl. XXIV 1), which measured 2.7 cm (w) × 13.9 cm (h) with an outer border 0.4 cm thick.¹¹ The writing surface was inset on both sides by about 0.1 cm, and the perimeter of the tablet survived at least partly on three sides. The inside edge was completely preserved; it exhibited three sets of small twin holes through which would have run a string for binding it to additional tablets. Remnants of wax were extant on both sides of the tablet, but there were no traces of lettering visible on either. It must have constituted a set of three or more tablets, as the surface was waxed on both sides (i.e. there was no unwaxed front or back “cover”). However, it is impossible to determine how many tablets bonded with it. Excavations at Berenike in 1994 recorded a similar object, a fragment of a wooden writing tablet still partially coated with wax. Broken on two sides, it had no extant tell-tale holes at the edges and measured 7.0 cm (w) × 15.0 (h).¹²

Fashion in Early Roman Egypt, in: R. Pirelli – M.D. Pubblico – S. Ikram (eds), *Animals in Religion, Economy and Daily Life of Ancient Egypt and Beyond* (Naples 2023) 291-310.

9 Nuovo - Zych 2023 loc. cit. (n. 8).

10 Some publications dealing with the animal cemetery include (not exhaustive): S.E. Sidebotham – I. Zych – M. Hense – R. Ast – O.E. Kaper – M. Bergmann – M. Osypińska – A. Carannante, *Results of Winter 2018 Excavation Season at Berenike (Red Sea Coast), Egypt. The Belzoni Bicentennial Report*, *Thetis* 24 (2019) 10-11; S.E. Sidebotham – I. Zych – R. Ast – O.E. Kaper – M. Hense – M. Bergmann – M. Osypińska – C. Newton – A. Carannante – R.S. Tomber, *Berenike 2019: Report on the Excavations*, *Thetis* 25 (2020) 13-14; S.E. Sidebotham – I. Zych – R. Ast – O.E. Kaper – M. Bergmann – A. Carannante – M. Osypińska – J.A. Harrell – R. Kucharczyk – R.S. Tomber – E. Sorgia, *Results of the Winter 2020 Excavation Season at Berenike (Red Sea coast), Egypt*, *Thetis* 26 (2021) 14-15.

11 E. Lalou, *Les tablettes à écrire de l'antiquité à l'époque moderne* (Turnhout 1992) is an insightful collection of essays concerning the practice of writing on tablets in different periods and places. Catalogs of tablets are available in, for example, K.A. Worp, *A New Survey of Greek, Coptic, Demotic and Latin Tabulae Preserved from Classical Antiquity*, *Trismegistos Online Publications* 6 (Leuven 2012), <https://www.trismegistos.org/top/>; W.M. Brashear & F.A.J. Hoogendijk, *Corpus Tabularum Lignearum Ceratarumque Aegyptiarum*, *Enchoria* 17 (1990) 21-54 (https://openaccess.leidenuniv.nl/bitstream/handle/1887/7717/5_031_024.pdf?sequence=1).

12 A. Verhoogt, *Textual Finds*, in: S.E. Sidebotham – W.Z. Wendrich (eds), *Berenike 1994. Preliminary Report of the 1994 Excavations at Berenike (Egyptian Red Sea Coast) and the Survey of the Eastern Desert* (Leiden 1995) 59 and 61 Pl. 28.

5 Sidebotham et al. 2024 loc. cit. (n. 4) 7-11 and Pl. VIII 4.

6 Sidebotham et al. 2024 loc. cit. (n. 4) 8 and Pl. IV 2-4.

7 Drs. Piotr Osypiński and Marta Osypińska excavated these trenches with a grant from the Polish National Science Centre NCN UMO-2021/43/13/HS3/02749. They excavated in January 2024 as part of the team co-directed by Sidebotham, Ast and Kaper and in December 2023 and February 2024 as part of the team directed by M. Gwiazda on behalf of the PCMA.

8 For parallels and discussion see M.M.S. Nuovo – I. Zych, *Collars on Cats and Dogs in Life and in the Afterlife. Function and*

Other finds from the trash dump/animal cemetery included the usual array of organic and inorganic artifacts and ecofacts including several fragments of wooden/bone brailing rings, basketry and matting, coins, glass fragments, etc.

Trench 167 (Hellenistic/Ptolemaic hydraulic-bath-well area)

Work continued in trench 167 in the Ptolemaic hydraulic area (Pl. XVII 2 and XXIV 2, XXV 1-2. 4; XXVI 1-XXVII 1) where excavations began in 2014.¹³ This lies at the extreme western side of Berenike. The trench was in the northern part of the bath building, west of the “pylon” of the dismantled early-Hellenistic/Ptolemaic gate exposed in seasons 2014–2015. This season excavations in trench 167 documented an extremely well-preserved furnace together with the service room of a 3rd-century BC Greek-style public bath.

The entire service room, including the furnace structure, is in a 1.7-1.8 m-deep, rock-cut pit measuring 6.5 m long N-S × 4.5 m wide E-W. There are two halves of the pit divided by a 0.6 m-thick E-W wall of irregular blocks of anhydritic gypsum. In the southern part of the pit lies the furnace itself, while the northern part contains the service room. The stoke hole for the furnace, 1.5 m high × 0.75 m wide, is arched in a double row of very crudely made voussoirs, which survived in excellent condition on the northern (outer) side of the furnace (Pl. XXV 4-XXVI 1).

The northern wall of the service room revealed a blocked window with a double arch, 1.0 m high × 1.4 m wide. Most likely, it was used to supply fuel to the furnace and to remove ash, which was stored in a heap located to the north of the bathhouse building. The lower part of the room was filled with several layers of compacted ash mixed with windblown sand and fragments of crushed anhydrite gypsum and pottery.

Documented from this area outside/north of the furnace stoke hole were especially large quantities of ceramics, including both Egyptian-made and imported amphoras. Among the latter was a stamped handle with the letters FAPAP, likely dating to the second quarter of the 2nd to the end of the 1st century BC (Pl. XXV 2). The digamma points to a provenance in Pamphylia, where the letter was still used throughout the Hellenistic period.¹⁴ The stamp is unparalleled, but among the Pamphylian amphoras recovered in and around Alexandria, and documented by C. Brixhe, there

is a stamp with the abbreviation FAP. Brixhe associated it with the name FAPNEΙΣ, which occurs on three further stamps in the collection of the Greek and Roman Museum in Alexandria.¹⁵

There were also fragments of cooking wares, which suggest that the furnace had been used not only to heat water for the baths, but probably also to cook food for those bathing here or for members of the bathhouse staff (see the report below by R.C.A. Geerts and N. Bartos: Pl. XXXI 6).

South of the wall with the stokehole are remains of the furnace itself (Pl. XXVI 2 and XXVII 1). It represents a very rare case of a Hellenistic bath furnace with an almost completely preserved set of structures which would have supported a tank/boiler for heated water (called a *χαλκεία* – *chalkeia* – due to the most common material used for its manufacture).¹⁶ In the Berenike furnace – slightly different from the furnace of the Hellenistic baths at Taposiris Magna, or the exquisitely preserved furnace of the baths of Karnak¹⁷ – these structures (Pl. XXVI 2 and XXVII 1) are in the form of three main (loci 026A-C), and four additional (loci 026E-G, locus 026I) vertical pillars (height 1.55-1.75 m) built of massive blocks of anhydritic gypsum, coated with a layer of sandy clay. Two additional longitudinal supports (loci 026D-H) lay along the wall separating the kiln from the service room on both sides of the furnace entrance. Not only did they support the northern end of the tank/boiler, but they also reinforced the northern wall of the furnace, the only furnace chamber wall constructed entirely of anhydritic gypsum blocks. The centrally located furnace hearth lay between the three main supports. Smoke discharged through at least two chimneys located in the northeastern and northwestern corners of the furnace itself.

Traces of extensive burning here indicate the frequency and intensity of the fires used to heat the bath water and cook food (Pl. XXVI 2). Excavations noted the elaborate heating system designed to draw air to keep the fire hot. The type of materials used, combined with the high temperatures of the fires, made frequent repairs and rebuilding of the furnace’s internal structure, the remnants of which comprised pieces of burnt anhydritic gypsum and rubble (including brick fragments) recorded in the ash dump located north of the bathhouse and first excavated during the 1996 season, necessary.¹⁸

13 For earlier reports on this area (not exhaustive) see Sidebotham et al., 2019 loc. cit. (n. 10) 9-10; Sidebotham et al. 2020 loc. cit. (n. 10) 13; S.E. Sidebotham – R. Ast – O.E. Kaper – M. Bergmann – S. Bhandare – A. Maurer – R. Hartmann – S. Popławski – J.M. Oleksiak – N. Bartos – R.C.A. Geerts – R. Kucharczyk – M. Castro, Results of the Winter 2022 Excavation Season at Berenike (Red Sea Coast), Egypt, *Thetis* 27 (2023) 14-17; Sidebotham et al. 2024 loc. cit. (n. 4) 12-13.

14 H.A. Kizilarslanoglu – E. Alkaç, Hellenistic Amphora Stamps from Elaiussa, *Anatolia Antiqua* XXVI, 2018, 45-68 esp. 61-62.

15 C. Brixhe, *Timbres amporiques de Pamphylie* (Alexandria 2012) nos. 639-642. R. Ast thanks Alan Johnston for advice on this subject.

16 T. Fournet – B. Redon, Heating Systems of Greek Baths. New Evidence from Egypt, in: S.K. Lucore – M. Trümper (eds), *Greek Baths and Bathing Culture. New Discoveries and Approaches* (Leuven 2013) 241.

17 Fournet – Redon 2013 loc. cit. (n. 16) 245, 247; M. Boraik – S. el-Masekh – A.M. Guimier-Sorbets – B. Redon, Ptolemaic Baths in front of Karnak Temples. *Recent Discoveries* (Season 2009-2010), *Cahiers de Karnak* 14, 2013, 48-57.

18 S.E. Sidebotham, The Excavations, in: S. E. Sidebotham – W. Z. Wendrich (eds), *Berenike 1996: Report of the 1996 excavations*

Excavations in the furnace chamber recorded even more potsherds from the layers of its backfill than from the service room, including more than a dozen sherds of extremely thick-walled vessels that may be the remains of additional water tanks or even terracotta baths similar to those discovered at Karnak.¹⁹

Trenches 166, 169-170 (Northern Complex)

Berenike is one of few sites in Egypt that has a geophysical map covering virtually the entire area of the ancient city. This provides a convenient tool for analyzing the urban grid, especially for late antiquity (4th-6th centuries AD) as those strata are the most visible. Very evident are the rather dense residential buildings, the main streets of the *cardo* and *decumanus*, and several landmarks. First and foremost is the intersection of the two main streets marked by a tetrastyle structure that has been recently researched and published.²⁰ Another landmark on the map of Berenike is the vast Northern Complex consisting of a central building flanked by courtyards on the north and south with a series of smaller rooms surrounding the southern courtyard. It closes off the *cardo* to the north and, together with the tetrastyle and the main temple of Isis, forms a well-designed element of ancient Berenike (Pl. XXV 3; XXVII 2-XXXI 3).

Excavations in the Northern Complex have been ongoing since 2015 and have included both the main building of the large compound, the southern courtyard and the side chapels.²¹ The main building, visible on the geophysical map as a compound consisting of numerous small rooms with very thick walls dividing them, comprises a series of separate structures, erected at different periods. The first interpretation of the compound as a building, perhaps of an administrative nature (archive or treasury), had to be completely rejected as a result of evidence documented during subsequent excavations.

Trenches 166 and 169 abutted one another with 166 located north of 169 (Pl. XVII 2 and XXVIII 1-2). These trenches revealed a large shrine or cult center which excavations in 2018 had first documented. The shrine clearly had rooms added to it over the centuries,²² and

this season excavations documented the inner part of the shrine, which was its sanctuary. Its eastern side wall and extant portions of the eastern end of the northern wall were decorated at the bottom with Egyptian Pharaonic style reliefs depicting a row of six protective seated lions holding knives (Pl. XXV 3 and XXIX 1-2). Although fragmentary, Olaf Kaper identified the scanty wall decorations and indicated parallels with the temples on Philae Island near Aswan dated to the reign of Ptolemy VIII (170-163 BC, 145-116 BC).²³ The sketch in Pl. XXV 3 renders the extant remains of one of the six lions on the eastern side wall of the sanctuary (see Kaper's report below).

In addition, there was a door jamb (1.51 m long × 0.24-0.27 m wide × 0.20 m deep) decorated with a closed papyrus plant with a cobra wrapped around it (Pl. XXVII 4). The cobra represents one of the titulary goddesses of Upper and Lower Egypt, Nekhbet and Wadjet, protecting the temple. This feature has close parallels with door jambs from the Augustan-era temple of Dendur, now in the Metropolitan Museum of Art in New York City.²⁴

Inside the room was the upper part of a naos shrine (0.35 m high × 0.93 m upper part wide/0.86 m lower part wide × 0.17 m deep) decorated with a small sun disk and a pair of flanking uraeus cobras (Pl. XXX 1). This naos was apparently built of separate blocks and it may have stood against the rear wall of the room, which seems not to carry any relief decoration in its central part. Dating the naos was not possible on the basis of this block alone.²⁵

Of interest was the recovery of a Greek ostrakon that recorded a list of terms related to ships and sailing (Pl. XXXI 2). It is written on the concave side and the detached script is difficult to date. Comparison with dated documents from Egypt and elsewhere suggests that the ostrakon comes from the second half of the 2nd or the 3rd century AD.²⁶

Popławski – J. Rądkowska, A Building Inscription for the Blemmyan King Kabantia, *Chiron* 52, 2022, 201-216.

at Berenike (Egyptian Red Sea Coast) and the survey of the Eastern Desert (Leiden 1998) 101-108 on trench BE96-11.

19 Boraik et al. 2013 loc. cit. (n. 17) 58 Figs. 7-8.

20 M. Bajtler – S. Popławski, Where the roads cross. The tetrastylon in Berenike, *Ägypten und Levante* XXXII, 2022 15-40.

21 For some previously published reports on excavations in this area (not exhaustive) see Sidebotham et al. 2019 loc. cit. (n. 10) 11; Sidebotham et al. 2020 loc. cit. (n. 10): 14-15; Sidebotham, et al. 2021 loc. cit. (n. 10) 15-16; Sidebotham et al. 2024 loc. cit. (n. 4) 11-12.

22 Excavations in 2019 and 2020 recovered two inscriptions in Greek recording the names of two Blemmye kings: Isemne and Kabantia, whose reigns are not precisely dated, but were likely sometime in the late 4th or early 5th century; see R. Ast – J. Rądkowska, Dedication of the Blemmyan Interpreter Mochosak on Behalf of King Isemne, *ZPE* 215, 2020, 147-158; R. Ast – S.

23 Cf. S. Cauville – M. Ibrahim Ali, *Philae Itinéraire du visiteur* (Leuven, Paris 2013) 97, 311. This guardian lion bears the name Mahes in the temple's pronaos, *ibid.*, 200. Similar lions with knives appear on an inner doorway in the temple of Dendur: A.M. Blackman, *The Temple of Dendûr, Les temples immergés de la Nubie*, Cairo, Service des antiquités de l'Égypte 1911, Pls. 60, 64.2, 66.2. The Ptolemaic period is less well documented in Berenike than the Roman, but among the few inscriptions surviving from that time is a dedication from the reign of Ptolemy VIII; see R. Ast, *I.Pan* 70, a Dedication from the Year 133 BC, *ZPE* 213, 2020, 108-110.

24 Blackman 1911 loc. cit. (n. 23) Pl. 88.

25 A list of surviving naos shrines has been assembled by Heimo Hohnneck in his PhD dissertation: *Naos: Königliche Steindenkmäler in den Tempeln Ägyptens vom Alten Reich bis zum Ende der pharaonischen Ära* (Mainz University 2020) DOI: <http://doi.org/10.25358/openscience-5369>.

26 The most distinctive letter forms in the list are nu and upsilon. These find parallels in documents from Dura Europos; see e.g., C.B. Welles – R.O. Fink – J.F. Gilliam, *The Parchments and Papyri* (New Haven 1959) 403 (= P.Dura 129) from 225 AD, which exhibits a very similar upsilon in *ιπτεύς* in line 2

During the cleaning of trenches 166 and 169 for final photography two sculptural fragments emerged. One (from trench 166) is a relief of two unidentified figures the top parts of which were broken and missing (Pl. XXVII 2). The figure on the left is clearly some animal or bird; that on the right depicted a human male or anthropomorphic deity wearing military-style sandals and, possibly, a chlamys. A more detailed description by M. Bergmann appears below.

The other stone sculpture (from trench 169) is a larger than life-size male portrait head carved from local anhydritic gypsum, which represents either a Roman emperor or, more likely, an important local personality (Pl. XXX 2).

Trench 170 (4 m N-S × 4 m E-W), which lay south of trenches 166 and 169 (Pl. XVII 2; XXX 3; XXXI 1 and 3), recorded additional large paving stones made of anhydritic gypsum (ranging in size from 1.42 m × 0.60 m to 0.56 m × 0.54 m) which had first been documented in trench 143 in 2020.²⁷ On the southeastern side of trench 170 a slightly raised stone curb (Pl. XXX 3, arrow at bottom left) delineated the paving stones. A narrow extension (1.5 m N-S × 5 m E-W) of the trench to the northwest revealed some of the curb stones that defined the western limits of the paving (Pl. XXX 3, arrow at top right).

In the central part of trench 170, towards the northern end, a thin line of copper or bronze imbedded in the paving stones seemed to outline a special area, the function of which could not be determined. Trash lay immediately atop this. In turn, a decomposed layer of white anhydritic gypsum blocks lay atop the trash (Pl. XXXI 1).

Excavations to the west along a narrow 1.5 m N-S × 5 m E-W trench (the NW extension “pipeline”) (Pl. XXX 3, top right and XXXI 3) did not identify any definitive architectural connection between the large paving stones and the entrance to the Falcon Shrine located to the west in trenches 130-131. The “pipeline” extension did, however, reveal part of the western edge and curb of the flagstone paving (Pl. XXX 3, arrow at top right) and most of a large, dark colored, rectilinear-shaped stone with an oval hole carved in it (Pl. XXXI 3, left of scale).

(image available here <https://findit.library.yale.edu/bookreader/BookReaderDemo/index.html?oid=15530353#page/1/mode/1up>); the nu is paralleled in lines 11-13 of P.Dura 126 (p. 396-397) from 235 AD (<https://findit.library.yale.edu/bookreader/BookReaderDemo/index.html?oid=15530031#page/1/mode/1up>). Cf, too, from Hermopolis in Egypt the unskilled hand of Aurelius Achilles in lines 26-30 (esp. nu in συν- at the beginning of line 30) of M.Ch. 211 from year 233 (https://www.papyrusportal.de/receive/UBLPapyri_schrift_00000090).

²⁷ For Trench BE20-143 see Sidebotham, et al. 2021 loc. cit. (n. 10) 15. 16 (incorrectly citing Tafeln VI 1 bottom and VIII 1) and Pl. X.2 (foreground) XII 1-2.

Specialists' reports

Synopsis of the ceramic evidence (R.C.A. Geerts and N. Bartos)

Trench 135 (robber hole at the southern end of the Isis Temple portico):

Given the small size of this excavation area, it was more difficult to assign clear chronological phases. Nevertheless, the topmost loci contained primarily Late Roman body sherds, especially AE3 (Egyptian) (Pl. XXXI 5) and LR1 (Cypriot/Cilician) amphoras. Deeper layers of the fill, however, revealed fairly consistent Early Roman ceramics, including AE2 (Egyptian) amphoras, Dressel 2-4 Campanian amphoras and Italian sigillata datable to the first three quarters of the 1st century AD. Based on this, it seems that the robber hole likely cut through Early Roman layers below the temple portico, and was subsequently filled, in part, when those same layers collapsed into the hole.

Trench 168 (Isis Temple Entrance):

The majority of the pottery from this trench was Late Roman, especially from the 5th-6th centuries AD. Many loci were consistent with other trash layers in nearby trench 152. These included primarily LR1 (Cypriot/Cilician), AE3 (Egyptian), and LR3 (Asia Minor) amphoras, Aswan white-slipped bowls and other vessels in Nile and marl fabrics.

Trench 170 (Paved area in the Northern Complex)

This trench produced a substantial amount of material. The uppermost layers were Late Roman or chronologically mixed. The majority of the pottery from trench 170 came from a large trash deposit (locus 007) which contained primarily Early Roman material, but with numerous Late Roman intrusions. The Early Roman pottery in this locus included AE2 (Egyptian) amphoras, Dressel 2-4 Campanian amphoras, an Early Roman lamp, marl cups, and imported amphoras from the central Mediterranean (Tunisia), and the Aegean (Koan, Knidian, and Rhodian) amphoras. Late Roman intrusions included LR1 (Cypriot/Cilician) amphoras and an African red-slipped dish (datable to the late 4th-5th century AD). In addition, this trash layer included small amounts of material from South Arabia and the Persian Gulf. The lowest/earliest loci of trench 170 were consistently Early Roman and contained AE2 (Egyptian) amphoras, Dressel 2-4 Campanian amphoras and a small amount of Italian sigillata (Pl. XXXI 4).

Trenches 169 and 166 (Northern Complex)

The majority of the pottery from Trench 169 was Late Roman, though many of the loci were poorly dated owing to the lack of diagnostic fragments. The trench primarily contained AE3 (Egyptian) amphoras, LR1

(Cypriot/Cilician) amphoras and various vessels made in Aswan. The topmost loci in trench 166 were similar to those in 169 (Late Roman), but many of the lower loci were, likely, Early Roman or mixed Early Roman/Late Roman. One key find was a largely intact handmade vessel in an Early Roman layer. The form was unusual, and the fabric appeared to be from either the Eastern Desert or Sudan (Pl. XXXII 1 on the right).

Trench 167 (Hellenistic Hydraulic Complex)

The pottery from Trench 167 was unique compared to all other trenches in terms of its completeness. Most loci contained largely intact vessels (fragments that joined) and most dated to the 3rd through 2nd century BC, though some could be refined specifically to the 2nd century BC. AE1 (Egyptian) amphoras constituted the vast majority of finds; however, imports from the eastern and central Mediterranean (e.g., Rhodian, Knidian, Lamboglia 2) amphoras were common. Small amounts of handmade vessel fragments were present in most loci as well. Although few diagnostic fragments were recovered, preliminarily, these handmade vessels appeared to be similar to the complete example from the Hellenistic/Ptolemaic hydraulic complex found during the 2023 excavation season. Jennifer Gates-Foster offered a parallel to this pot from Bir Samut and suggested that it came from the Ethiopian highlands.²⁸ Although more study is required to be certain, it is possible that the handmade vessels from 2024 in trench 167 are similar (Pl. XXXI 6 on the right).

Synopsis of the Greek ostraka and papyri (R. Ast and J. Lougovaya)

Excavations recorded about 100 ostraka and plaster jar stamps from the Early Roman trash dump/animal cemetery (trenches 161 and 171); they were all in Greek except for one Demotic piece. Most of the texts were partially and poorly preserved. They included half a dozen water receipts similar to those published previously, which document camel loads of water delivered to the port by Egyptian camel drivers operating in groups of ten (*dekaniai*).²⁹ The deliveries were often made to Roman soldiers at the port and, thus, offer some insight into military presence in Berenike in the 1st century AD. In addition, the ostraka comprised approximately fifteen customs passes for goods, mainly wine, intended to be loaded aboard departing ships.

28 J. Gates-Foster, New archaeological evidence for the indigenous peoples of the Eastern Desert in the Ptolemaic and Roman eras, in: H. Cuvigny (ed.), *Blemmyes. New Documents and New Perspectives* (Cairo 2022) 61-73. For parallels from earlier seasons at Berenike, see J. Gates-Foster – R. Tomber, *Carried Over Desert and Sea: East African Pottery in Early Ptolemaic Egypt*, *Journal of Ancient Egyptian Interconnections*, forthcoming.

29 R. Ast – R.S. Bagnall, *Greek and Latin Texts from the 2009-2013 Seasons. O.Berenike 3* (Brussels 2016).

These texts added to the relatively large body of such passes previously excavated in Berenike.³⁰ Most of the 2024 ostraka bore no date, but those that did were clustered in and around the thirteenth year of Emperor Nero (66/67 AD).

Private correspondence constituted another group of ostraka excavated this season. The best example was a letter written by a soldier named Petronios to the centurion Likinnios, who was in Berenike. Petronios asks about the price of wheat and the status of a wooden chest that was being made for him. He says that he was not permitted by his superior to come to the port.

In addition to ostraka, excavations in trenches 161 and 171 documented Greek papyri. Most of these were small fragments, several found stuck to a reed pen and lumped together with remnants of textiles and basketry. Some of the fragments preserved enough information to be of interest, such as two scraps with dating clauses, one likely referring to Emperor Claudius (ruled 41-54 AD). Another small fragment written in a striking chancery script was part of a document addressed to clerks in the office of the *paralempetes*.³¹ The most remarkable papyrus find was, however, an extremely thin and well-made roll containing at least three columns of correspondence between individuals whose names do not survive because of damage to the beginning of the roll (Pl. XXIII 5). The extant text comprises requests, mostly for money, food and supplies. Reference to wood of the *Dalbergia sissoo* (Indian rosewood) tree, which is native to India, suggests that timber species from India in addition to teak, which is well attested in Berenike, could be found at the port. Indeed, excavations had documented a few fragments of Indian rosewood during previous seasons.

Another roll excavated in trench 161 was of poor quality. Before being unrolled, it measured 8 cm in length × 1.0-1.8 cm in diameter. It was uninscribed. Whether it was intended to be written on or was for packing is impossible to say (Pl. XXXII 2 at top).³²

Synopsis of the Hieroglyphic epigraphic evidence (O.E. Kaper)

Epigraphic work in January 2024 concentrated on two areas. In the Isis Temple, the robber hole in the floor of the portico (trench 135: Pl. XXI 1) still preserved

30 Examples of this text type are found in all collections of Berenike ostraka published thus far: R.S. Bagnall et al., *Greek Ostraka from the 1996-1998 Seasons* (Brussels 2000); R.S. Bagnall et al., *Documents from Berenike Vol. II. Texts from the 1999-2001 Seasons* (Brussels 2005); Ast – Bagnall 2016 loc. cit. (n. 27); R. Ast – R.S. Bagnall, *O.Berenike 4. Ostraka from the Port of Berenike Pylon 1* (2022), <https://doi.org/10.48631/pylon.2022.1.89358>.

31 For further evidence from Berenike for this office, see R. Ast – R.S. Bagnall, *The Receivers of Berenike. New Inscriptions from the 2015 Season*, *Chiron* 45 (2015) 171-185.

32 It seems to correspond to the low-grade papyrus used for packing rather than for writing that Pliny the Elder (N.H. 13.23) calls *charta emporitica* – “the paper of merchants.”

some decorated blocks which, due to lack of time, the project was unable to excavate during the previous season. This year, examination of robber trench 135, at the southern end of the Isis temple portico, yielded four decorated blocks (one had broken into six fragments) and one loose fragment. After study, the blocks all appeared to join together and could be added to the previously established decoration of the façade wall of the courtyard, which is also the rear (western) wall of the portico. The original location on the wall was not far from the pit into which they fell, but the project could not determine when they may have collapsed. The content of the blocks depicted the head of a king, presumably Trajan (ruled 98-117 AD) (Pl. XXIII 1), as well as the feet of a seated figure of Osiris and the head and crown of Min. The blocks and fragments were drawn and photographed for eventual publication in the final volume about the epigraphy of the Isis Temple.

The second epigraphic element emerged from the excavations of the small temple at the northern end of the Northern Complex. This temple was already known to have an Egyptian architectural form, but the sanctuary was excavated this year and it proved to have Egyptian Pharaonic relief-style decoration as well. The temple was dedicated to Isis and Serapis, according to a building inscription belonging to the latest phase of its use under the Blemmye king Isemne (late 4th to early 5th century AD), and this dedication probably applied also earlier. The sanctuary room of this small temple, which measured 2.88 m long × 2.69 wide, had raised relief decoration in Egyptian style. On the rear (northern) wall and on the eastern side wall (Pl. XXIX 1-2), enough of this decoration remained to identify a series of seated lions each wielding a knife in the bottom register (Pl. XXV 3). The western face of the eastern side wall had a total of six identical lions and the southern face of the northern rear wall had two of the same, though larger in scale than those on the eastern side wall. The lions represent a demon-like protector, because of the knife at their front paws, whose name may be Mahes (“the wild lion”), but there are also other names for this creature. The significance of this motif is protective, and it is surprising to find this inside the sanctuary of a temple (Pl. XXV 3 and XXIX 1-2). Normally such protective imagery occurs on doorways or on the outside walls of temple buildings, for which see the references in note 23 above.

Finally, a third task involved studying and copying an earlier find, a stela dated to Cleopatra VII (died 30 BC) that had been excavated in 2023 in trench 155 in one of the smaller shrines in the Northern Complex.³³ The stela had been badly affected by salts so that its upper part had swollen and cracked. The salt crust, however, still preserved details of the former decoration, and it was, therefore, decided to keep the accretion layer in place. The stela was drawn with the inclusion of the details on the salt crust, and photographed. The text on the stela

appears twice, in two languages, in Demotic Egyptian and Greek, in which the donor declares that he had dedicated a shrine to Hermes. The central figure on the stela is the Egyptian god Thoth, who is obviously the deity intended, because he was called Hermes in Greek. To the right of him is a male king, as identified by his clothing, who must represent Cleopatra VII.

Synopsis of the sculptural remains (M. Bergmann)

Excavations in trench 166 documented two pieces of sculpture. One is the lower half of a small stela (BE24-166/032/001; 0.27 m high × 0.24 m wide) made of anhydritic gypsum (Pl. XXVII 2). It stuck vertically in the floor of the corridor running along the front of the small temple at the northern end of the Northern Complex, which had been dedicated to Isis and Serapis. It depicts the remains of two frontal figures: on the left (from the viewer’s perspective) the front part of a hitherto unidentified animal/bird with a massive body and legs tapering downwards, the feet ending in claws; on the right, on a higher level, are the legs of a human male figure, preserved from the feet to half the height of the thighs and standing frontally and in contrapposto. The figure wears calf-high laced sandals (Greek *krepides*), as were once worn by the Macedonian army.³⁴ The rest of the preserved part of the legs is bare. Behind the legs appears a kind of *chlamys* of a nearly round contour and with a wide border, covering the figure’s back and reaching down to the middle of the lower leg. With *krepides* and *chlamys* the figure likely wore a short *chiton* or tunic with or without a *cuirass*. It probably depicts a soldier god similar to those, who were worshipped – sometimes under the name of ‘Heron’ – particularly in the Fayum and are known from panel and wall paintings.³⁵ The images of these gods also include examples of the unrealistic oval outline and the border strip of the *chlamys* which is hanging down behind the body and usually is held together in front of the center of the neck by a *fibula*.³⁶ However, it may also refer to an Egyptian deity whose protecting character is emphasized by the costume. Both may point to a votive of a member of the military, which was well represented in Berenike.

The second sculpture is a male portrait head from trench 169 (BE24-169/034/001), also made of anhydritic gypsum (Pl. XXX 2), found embedded in

34 The type: N. Kaltsas et al. (eds), *The Antikythera Shipwreck – the ship, the treasures, the mechanism*, Cat. Exhibition Athens, National Archaeological Museum April 2012–April 2013 (Athens 2012) 91 no. 34; 109 no. 55 (E. Vlachogianni). Macedonian/Hellenistic soldiers wearing *krepides*: Theocritus, *Idyll XV* 6; M. Tsimpidou-Aulonite, *Makedonikoi taphoi ston Phoinika kai ston Agio Athanasio Thessalonikes* (Athens 2005) cover, Pl. 35-39; cf. the painting of a *Dioscurus* from the Fayum in Cairo (V. Rondot, *Derniers visages des dieux d’Égypte* (Paris 2013) illustrations p. 114.

35 Rondot 2013 loc. cit. (n. 34).

36 Rondot 2013 loc. cit. (n. 34) 208-212, Providence; 170-173, Oxford; 141-145, Bruxelles.

33 A description of the find context and a photo of the stela appears in: Sidebotham, et al., 2024 loc. cit. (n. 4) 11. 14 Pl. XIV 1.

the late antique wall of the corridor leading southward from the temple of Isis and Serapis in the Northern Complex. The head is missing part of its top, which had been added on a worked surface, perhaps in stucco. Including this addition, but without the short, preserved neck piece, the head is 0.29-30 m high, i.e., larger than life-size. This indicates a portrait of a ruler, as do the strikingly large round eyes with bulging eyeballs that seem to imitate the expressive eyes of the portraits in the round and on coins of the early Ptolemies and Ptolemy VIII, which are only rarely found in various contexts and in later periods.³⁷ Rows and groups of sickle-shaped strands of hair at the back of the head, and the division of short strands in the center of the forehead, point to an origin in the 1st century AD. However, none of the Roman emperors seems to be depicted. Possibly it is a portrait of some politically or financially important individual involved in the Eastern trade.

The bronze pieces documented from trench 168, at the entrance to the Isis temple, comprised mainly fragments of objects which had been hacked into small pieces and cannot be reconstructed (see discussion by I. Zych and M.S. Hussein below). However, two bronze fingers testify the existence of life-size bronze statues of different quality and size in the Isis Temple courtyard. One is a curved and delicately formed finger, which is hollow and was probably cast separately (Pl. XXXII 3 left). An only slightly bent and more simply worked finger is massive and its front phalanx failed during casting and had to be set separately (Pl. XXXII 3 right).

Synopsis of basketry, matting and cordage (S. Rice)

65 basketry, cordage, and matting artifacts were studied in-depth. Most had been previously excavated during the 2014, 2015, 2019, 2020, 2022, and 2023 field seasons and three were excavated this season. The size, shape, special features, and condition of the objects in their entirety as well as their individual components were recorded. Microscopic examination identified the raw materials where possible, and reconstructions were made to determine their technique of manufacture. Photographs were taken of all objects, and some had additional photos and videos taken for photogrammetry.

34 of the objects analyzed were from trenches around the Isis Temple excavated in 2019 (trenches 120 and 128), 2020 (trenches 137, 139, and 140), and 2022 (trench 136). The assemblage comprised mostly matting and cordage fragments with few basketry fragments. Materials used in their manufacture included two distinct types of animal hair of uncertain origin, doum palm (*Hyphaene thebaica*), date palm (*Phoenix dactylifera*), two species of halfa grass (*Desmostachya bipinnata* and *Imperata cylindrica*), flax (*Linum usitatissimum*), and

several examples of highly processed flax-like bast fibers that were unidentifiable due to their epidermis missing. These fibers could potentially be jute (*Corchorus olitorius* or *C. capsularis*) from India, but this cannot be confirmed without chemical analysis. Some objects of note were a fragment of basketry with decorative coiling made of fibers that were dyed red (BE19-120 SR036), a fragment of finely woven matting made of animal hair (BE19-120 SR048), and matting fragments that were bound in a way consistent with screen walls (BE19-120 SR042 and SR065).

21 of the objects analyzed were from Early Roman trash dump/pet cemetery trenches that had been excavated in 2001 (trench 48), 2014 (trench 96), 2015 (trench 107), 2023 (trench 161), and 2024 (trench 161). The assemblage mainly included fragments of cordage and matting that had been used for pet burials. The materials found here were date palm, doum palm, halfa grass, and flax. Some notable objects included a fragment of well-crafted netting with sheet bend knots and regular 4 mm mesh (BE23-161 SR025) and a large fragment of knotless netting with irregular mesh sizing that formed a tapered cylindrical shape (BE23-161 SR026), both found together in the trash layer. Additionally, several iron collars were found with very faint remnants of cordage attached, however the corrosion from the metal made detailed documentation difficult and the materials unidentifiable.

10 objects were from trenches excavated in the southwestern harbor in 2014 and 2015 (trenches 98 and 109). The materials found here were date palm, doum palm, and halfa grass. Some notable objects included fragments of thick, plaited matting and woven basketry that had been excavated together. Several similar fragments had been recorded in different locations within the same trench, but it was unclear if all were fragments of the same object or of several similar objects. One of the larger fragments, with both the matting and basketry (SR002 and SR003), had a section where the matting plait wound around the passive system of the basket, indicating that they may have been intentionally attached instead of becoming that way due to deterioration.

Glass (R. Kucharczyk)

Trench 166

Glass finds, retrieved from trench 166, included 45 small fragments, of which 12 were diagnostic. The assemblage ranged in date from the 1st to the 3rd century AD. All vessels, except for one mold-blown beaker/or bowl, were free-blown. There were limited varieties of vessel forms. The majority of sherds represented drinking specimens, all manufactured of colorless glass with yellowish or greenish tinges, often exhibiting milky-white weathering and layers of silver iridescence: delicate truncated conical beakers with rounded thickened or cracked-off ground rims,

37 H. Kyrieleis, *Bildnisse der Ptolemäer* (Berlin 1975) Pl. 2. 4. 8. 10,4-7; 12,1; 28,1;52, 1.3; 53; 100,1; 102,1; later examples for the formula in Rondot 2013 loc. cit. (n. 34) 96-102, Oxford/Cairo; cf. Rondot 2013 loc. cit. (n. 34) 335-336.

beakers with an applied horizontal trail below the rim, indented beakers, beakers with a slightly flaring, rounded thickened rim, and thin-walled hemispherical bowls with a cracked-off rim, some with simple wheel-cut horizontal grooves or ridges below it. There were only a few concave containers, plain bases, one made of emerald-green glass, and colorless body sherds, one of them, apparently from a bottle, was decorated with pinched nipples. There was also evidence of a possible plate made of cobalt blue glass, a thick-walled unguent bottle and a yellowish-green mold-blown bowl with deep circular indentations.

A thick, colorless flat fragment, formed in a mold should also be mentioned. It featured an original rounded edge and well-executed thin, densely set ribs on its top. Most probably it was part of a plaque, used in architectural settings, apparently in a wall decoration possibly of a shrine or as inlay on a sculpture (perhaps deity garments) (Pl. XXXII 4). In addition to vessel fragments, excavations also recorded a small flake of raw cobalt blue glass. This single piece may be added to many raw glass chunks of the same color of glass, already known from the site, but they were still insufficient evidence to suggest any glass working activities in or around Berenike.

Trench 168

Trench 168 produced more than 140 glass vessel sherds. Most were non-diagnostic, as they consist of very small fragments; only very few were diagnostic, mostly rims and bases from uncertain forms. Such a high degree of fragmentation clearly indicates that the material was transported from elsewhere. This, in turn, raises the question to what extent it reflects the depositional history within the trench.

The assemblage ranges in date from the 1st to the 5th centuries AD. Most vessels were used during the 1st through 3rd centuries AD. Identifiable specimens include the “pillar-molded” bowls, thin-walled beakers with a thick, rounded rim, indented beakers, and beakers with a facet-cut decoration, all made of colorless glass. Strong colors, usually characterizing Roman imperial workshops, are represented by deep purple body-sherds of a beaker with horizontally applied trails of the same color as the body.

Late Roman specimens belong to beakers or lamps with a cracked-off rim, sherds with applied blue blobs, colorless bowls with slanting walls, adorned with applied thin blue threads, horizontally fused-in on the rim, and a pale green bottle or flagon with a single horizontal thick trail of the same color as the body, applied beneath a thick, rounded rim.

Very few, tiny fragments of polychrome mosaic glass vessels of this period were recorded. Objects of adornment were also found. They included two fragments of semicircular bangles in cross section, characteristic of the Late Roman period: a plain specimen and another

decorated with somewhat uneven, diagonally tooled protruding ribs (Pl. XXXII 5). Their colors could not be determined due to black and brownish patina.

Finally, a blank onyx cameo should also be mentioned. It is a roughly formed oval disc with the surface prepared for cutting a raised image in relief (Pl. XXXII 6). This category of finds is relatively well represented at Berenike.³⁸

Trench 169

Excavations in trench 169 recorded only six fragmentary glass finds. This very tiny assemblage represented vessels typical of the 2nd-3rd century AD. It included bowls made of bluish-green glass with an in-turned rim and a small opening, a thick colorless base of an indented beaker, and a thick-walled, narrow-necked unguent bottle made of green glass with a thick, inward folded rim. This trench also produced another colorless fragment with thin ribs on the top. It was very similar to the object found in trench 166. These two fragments most probably once adorned the same piece. All sherds had black and golden enamel-like weathering and some also preserved black patches.

Trench 170

The most noteworthy feature of the glass assemblage from trench 170, which contained approximately 150 sherds, was its fragmentation. The recovered finds included fragments of cast, blown and mold-blown vessels, of which those of blown vessels constituted the largest group.

The material encompasses a rather wide timespan, ranging from the 1st through the 5th centuries AD. Most of it, however, could be attributed to the first three centuries AD. The identifiable specimens from this period included shallow yellowish-green and green ribbed bowls, the so-called “pillar-molded” type, with long, widely spaced ribs (Pl. XXXII 7). This type of drinking vessel, characteristic of the 1st century AD, belongs to one of the most common types of tableware at Berenike.³⁹ There were also thin-walled, truncated conical beakers with a cracked-off ground rim, decorated with cut horizontal grooves or abraded lines, or wide vertical indentations.

A few fragments represent colorless luxury tableware characteristic of the 1st-3rd centuries AD. There is a

38 Banded agates (agate with two-colored bands of white and black or gray is known as onyx, and agate with white combined with red or brown is known as sardonyx) were imported from India, particularly from Barygaza, via Arikamedu or Pattanam (Periplus Maris Erythraei 49, 56). Sidebotham 2011 loc. cit. (n. 2) 238. See relevant chapters on geology by J.A. Harrell in the Berenike volumes listed above in note 2.

39 R. Kucharczyk, Glass, in: S.E. Sidebotham – I. Zych (eds), Berenike 2008-2009. Report on the Excavations at Berenike, Including a Survey in the Eastern Desert (Warsaw 2011) 63-64 Figs. 9-28 and 9-30.

small body fragment, decorated on the exterior with rows of concave elongated facets. This fragment is too small to reconstruct the shape of the vessel, but probably it belongs to a facet-cut beaker, either tall or squat with a low foot ring, made in the eastern part of the Roman Empire in the last third of the 1st to the beginning of the 2nd century AD. Many comparable fragments of fine quality and workmanship have been previously documented at Berenike.⁴⁰ Another fragment belongs to a cast bowl with a broad outplayed rim and an overhanging edge, one of the most common fine, colorless tablewares from the Flavian and Trajanic periods. Such vessels, plain or with elaborate facet-cutting, either covering the entire vessel or confined to the edge of the rim and base, in a variety of sizes, have also been recorded at Berenike.⁴¹ There is a small fragment of colorless glass, decorated with tiny, short rice-grain cut facets. It could not be securely attributed to a specific type of vessel, though the color and decoration placed it in the 2nd or 3rd century AD. Likely, it is from an open vessel, such as a cylindrical cup – the preferable vehicle for decoration – consisting of bands of rice-grain facets. Vessels with this kind of design are very rare at Berenike.

Decorated mold-blown vessels, characteristic of the 3rd century AD, have also been recorded. A green fragment with two fragmentarily preserved rows of circular bulges attest their presence. It may be from a toilet flask shaped like a bunch of grapes. This type of decoration, however, common throughout the Roman Empire mostly in the 3rd century AD, rarely appears at Berenike.⁴²

Only very few fragments ascribed to the 4th-5th centuries AD came to light. A solid, knobbed base and a body sherd with a large, applied, deep blue glass blob belong to conical lamps or beakers. This type of vessel is quite frequent at Berenike.

Coins from the 2024 and earlier seasons (S.E. Sidebotham)

Metal conservator Mr. Mahmoud Samir Hussein cleaned coins from 2024 and previous excavation seasons, which allowed for their examination. Approximately 76

coins were studied from 2024 and some from previous seasons ranging in date from early Ptolemaic to late Roman (possibly late 4th/early 3rd century BC into the early 5th century AD). Many were surface finds and not from excavated contexts. Most were in very poor condition due to a combination of wear resulting from extensive circulation prior to their loss and from the very corrosive effects of the highly saline soil in which they had been found. Two of the better preserved examples were Roman-era billon tetradrachms minted at Alexandria. One issued under Hadrian (ruled 117-138 AD) was a surface find that dated to his 19th regnal year (134-135 AD) (Pl. XXXII 8-9).⁴³

The other, excavated in 2020 in trench 138, was a tetradrachm minted during the 4th regnal year (246-247 AD) of the emperor Philip I (the Arab) (ruled 244-249 AD) (Pl. XXXII 10-11).⁴⁴

Metal (I. Zych and M.S. Hussein)

Trenches 152 and 168, located on and above the steps leading to the Isis Temple, yielded bronze fragments recorded from a stratum of loose sand that obscured the architectural space.⁴⁵ Metal conservation treatment during the 2024 season identified similar assemblages among the finds from earlier trenches: 139/009 on the southern side outside the temple entrance where evidence of metalworking (copper alloy remelting) on a small scale had been documented, and 141/009 located inside the southwestern corner room in the temple cella about 40 m further to the west.

These assemblages include irregular pieces of cut bronze. Individual fragments vary in size, many are no larger than the palm of an adult's hand, roughly trapezoidal or triangular, sometimes narrow and long, but not exceeding about 18 cm. They were covered with a layer of corrosive compounds between 1 mm and 2 mm thick; in a few cases, the products of corrosion completely obscured the shape of the object. The total weight of the fragments was approximately 3 kg, including the products of corrosion which added somewhat to the overall heft.

The pieces were first examined under a digital microscope to document possible cracks or fissuring as well as the presence of active corrosion. Standard restoration procedure in the field lab consisted of the following steps: 1) cleaning, mechanical and chemical; 2) neutralization; and 3) inhibition. The pieces were

40 R. Kucharczyk, Come and dine with me. Early Roman luxury glass tableware from Berenike – New evidence from the harbor area and trash dumps, PAM 26/2, 2018, 152. 154-157 Figs. 4,3-5; 5,7-9, and see further discussion and references to additional sites in Egypt, including Kom el-Dikka, Karanis, Quseir al-Qadim, Tebtynis, Douch, and stations and small praesidia in the Eastern Desert.

41 Kucharczyk 2011 loc. cit. (n. 39) Fig. 9-6:4. 9-8. 9-9:15. 9-12:47; R. Kucharczyk – I. Zych, Traps of residuality: What is early Roman glass doing in a late Roman household rubbish dump? The case of trench BE10-59 from Berenike on the Red Sea (Egypt), in: P. Ballet – S. Lemaître – I. Bertrand (eds), De la Gaule à l'Orient méditerranéen. Fonctions et statuts des mobiliers archéologiques dans leur contexte (Rennes 2019) Fig. 3:1-3.

42 E.M. Stern, Roman Mold-blown Glass. The First Through Sixth Centuries (Rome 1995) 180. 187. 190-195. nos. 109-111. 119-128 and see full discussion therein.

43 For parallels see G. Förchner, Die Münzen der römischen Kaiser in Alexandrien. Die Bestände des Münzkabinetts. Historisches Museum Frankfurt am Main (Frankfurt am Main 1987) 168 no. 505; A. Geißen, Katalog Alexandrinischer Kaisermünzen der Sammlung des Instituts für Altertumskunde der Universität zu Köln. Vol. 2 Hadrian-Antoninus Pius (Nr. 741-1994) (Opladen 1982) 140 no. 1150.

44 For parallels see Förchner 1987 loc. cit. (n. 43) 311 (no. 980) and A. Geißen loc. cit. 1982 (n. 43) 258 (no. 2729).

45 The loci containing these characteristic pieces are: BE23-152/011, 012, 017, 019, 024, 025; BE24-168/013, 015, 018.

immersed for an hour in a solution composed of 5 % formic acid dissolved in water. The color of the bath was monitored to see whether it changed to blue or green. The solution was changed until the required degree of cleaning was reached without damaging the patina layer. Hard clumps of corrosion were removed with a corundum brush powered by a rotary machine. Hard corrosion stuck locally to weak surfaces or between the folds of embossed patterns on the surface was removed with an ultrasonic cleaning pen. After initial cleaning, the pH and alkalinity levels were neutralized by immersing objects in a sodium bicarbonate solution for four days. Following final cleaning with felt brushes the fragments were immersed in a bath of benzotriazole in 3% ethyl alcohol in order to inhibit future corrosion. Lastly, a 5% solution of Paraloid B-72 dissolved in 99.9% acetone was applied to protect the treated fragments.

Cleaning revealed a predominance of flat pieces of bronze, mechanically cut to irregular shapes – approximately 30-40% – and cut from bronze objects with articulated surfaces, including curved elements, dips, flat or raised edges, V-shaped rolling or overhanging folds, etc. A couple of pieces preserved evidence of soldering on the back. Significantly, three of the nondescript “lumps” of corroded copper alloy turned out to be the index and middle fingers of life-size or larger bronze statues (Pl. XXXII 3) plus the nail part of the small finger.⁴⁶ One piece, twisted into a screw-like shape, resembled a lock of hair – it has yet to be cleaned. A larger fragment seems to have been “weighed down” with mortar. Among the accompanying finds, apart from some lumps of shapeless lead, was one larger fragment of this metal, weighing half a kilo; its curve indicates an originally large circular object.

Initial examination noted only one join between pieces. However, the other pieces were too fragmented to estimate the size of the statues from which they came. From the appearance of these pieces, they would have been part of one or more hollow cast statues in the round. These were sometimes partly filled with lead or, as in this case, mortar; examples with lead have been found previously in Berenike (trench 70). Of interest was evidence of mending noted in this assemblage. Another example discovered this season in the Northern Complex (trench 169) was the front part of the upper arm of a human figure about half life-size, which, after conservation treatment, turned out to join with another fragment. Examination of the cleaned piece revealed three small holes and a cut in the thickness of the bronze sheet. These were repaired in antiquity by

inserting a strip of bronze sheet and soldering it with tin. One possible reason for this is that the holes, perhaps intended to attach something to the arm, were no longer needed at some point. There was also a countermark on the front surface of this statuary fragment.

The assemblage from the temple trenches – the weight of the recovered finds amounts to about 4.5 % of a full-size bronze statue from the Roman period; surviving examples weigh about 60 kg – suggests that the statuary decorating the Isis Temple and its courtyard included figures of bronze in various sizes, probably in draped robes, perhaps with hair-dos of corkscrew curls. The circumstances of the discovery led to the conclusion that in late antiquity the ruined parts of the temple were mined for, among other items, destroyed or damaged bronze statuary. The pieces were too fragmentary to be dated, but it is reasonable to assign them to the floruit of the Isis Temple in the Early Roman period. It is likely that the destroyed or damaged figures were cut into smaller pieces, which could then be remelted, possibly in the small workshops that appear to have functioned outside the temple in the late period.⁴⁷

Conclusion

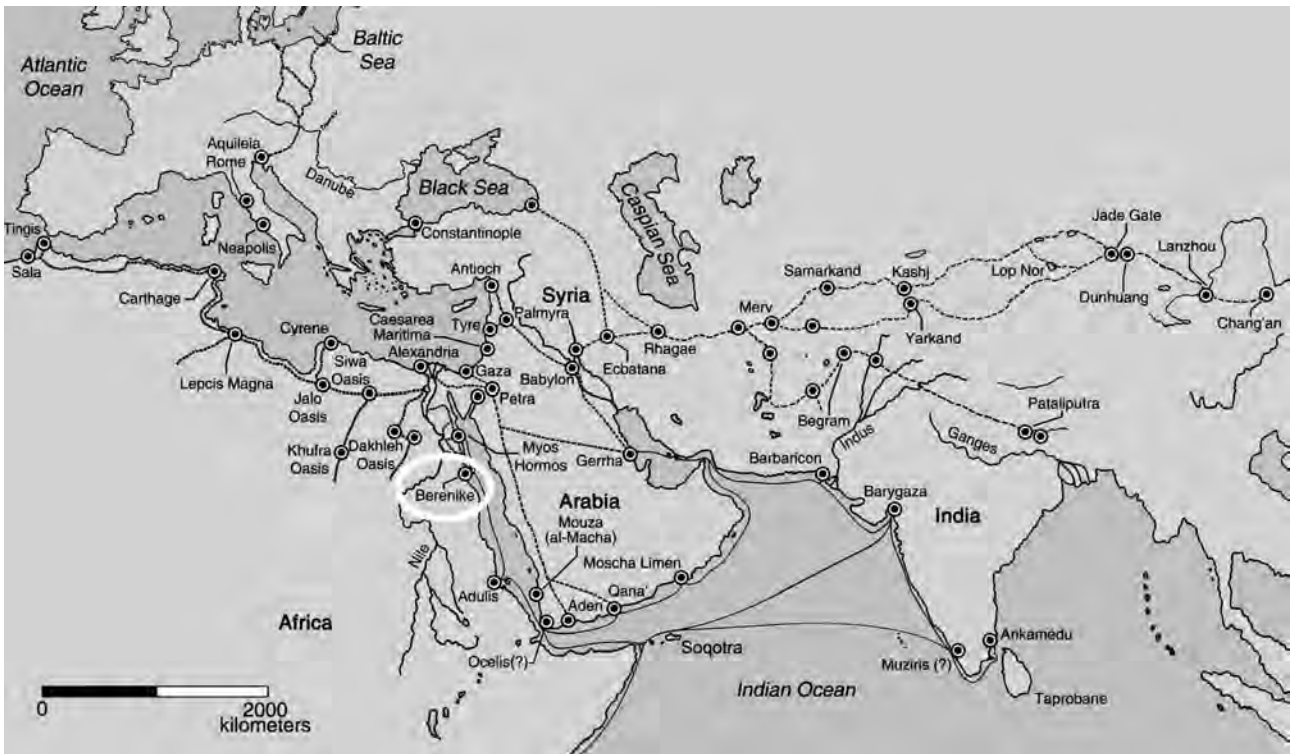
The December 2023-January 2024 Delaware-Heidelberg-Leiden excavations documented activities in four distinct locations: The Isis Temple, the Early Roman trash dump/animal cemetery, the Hellenistic/Ptolemaic bath/hydraulic area and the Northern Complex. Some of the trenches excavated this season were continuations of those begun in previous years (135, 152) while the others (161, 166-171) were new in winter 2023-2024.

Results further documented details of the entrance of the Isis Temple, added significantly to the number of Early Roman pet burials, recorded details of the furnace that heated the 3rd-2nd century BC baths and further clarified the plan and dates of construction of a major building – likely yet another temple/shrine dedicated to Isis and Serapis – in the Northern Complex. For the latter, it is now clear that the large structure where excavations continued this season dated at least as early as the 2nd century BC and continued to function into the 4th-5th centuries AD.

The Delaware-Heidelberg-Leiden team hopes to continue excavations at Berenike in winter 2024-2025.

46 In his notebook, J.G. Wilkinson reports the discovery of a bronze arm in the temple, but does not note its size; see D. Meredith, *Berenice Troglodytica*, JRA 43, 1957, 70.

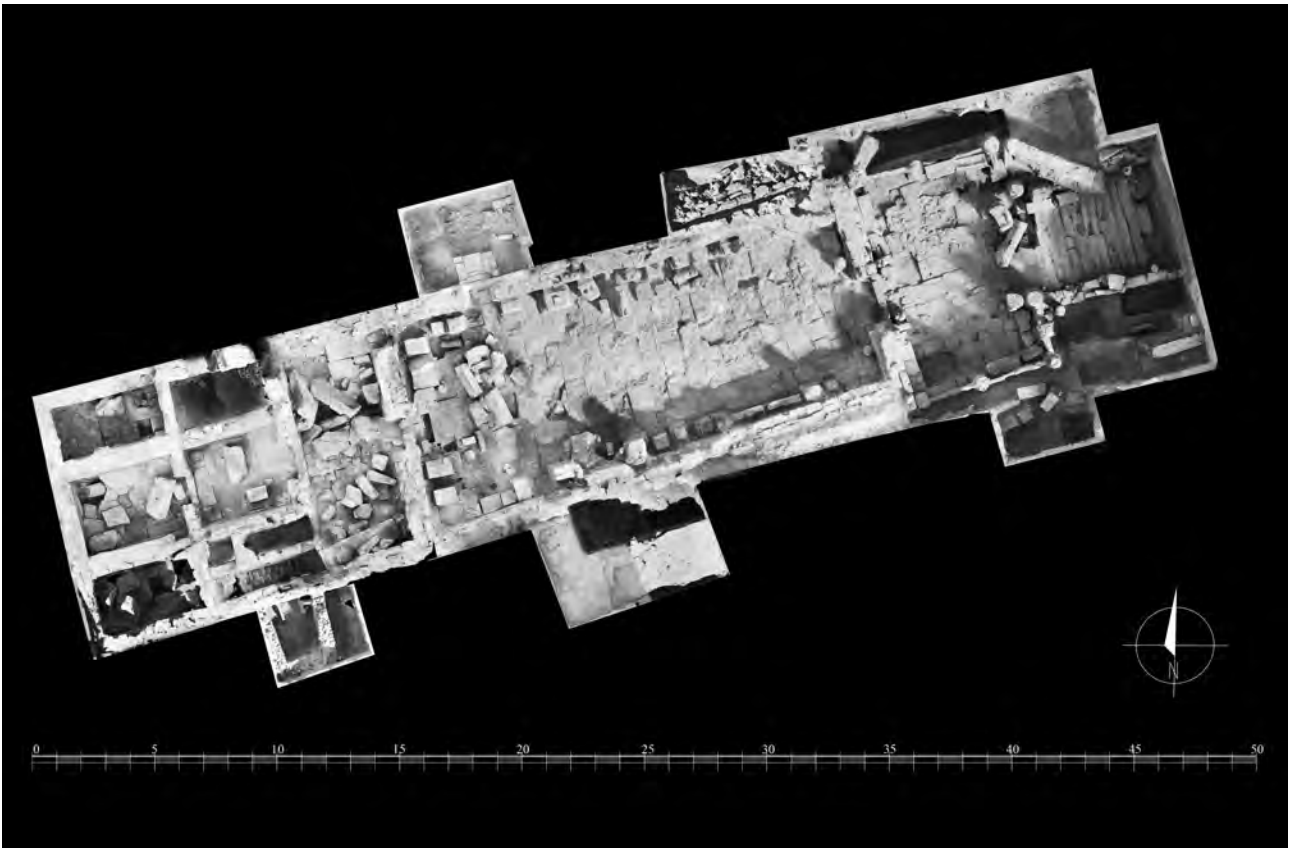
47 One of the cut statue pieces came from the same southwestern corner room of the temple building proper that yielded a donkey skeleton; see Sidebotham et al. 2021 loc. cit. (n. 10) 18. It might suggest a parallel with the cult practices of the association of siderourgoi from Hermonthis, evidenced by inscriptions left in the ruins of the Hatshepsut Temple at Deir el-Bahari in Western Thebes (A. Łajtar, *Deir el-Bahari in the Hellenistic and Roman Periods. A Study of an Egyptian Temple Based on Greek Sources* (Warsaw 2006) 96-102). According to these texts, donkeys as animals connected with Seth were sacrificed in Egypt to restore the cosmic order, neutralizing the evil powers of the underworld. Perhaps there is a connection between the donkey sacrifice made in a back room of the temple in Berenike and the workers salvaging bronze from the temple for remelting.



1: Map location of Berenike and prominent trade routes in Europe, North and East Africa, and Asia (drawing by M. Hense)



2: Plan of Berenike locating trenches excavated during the 2024 season (drawing by S. Poplawski)



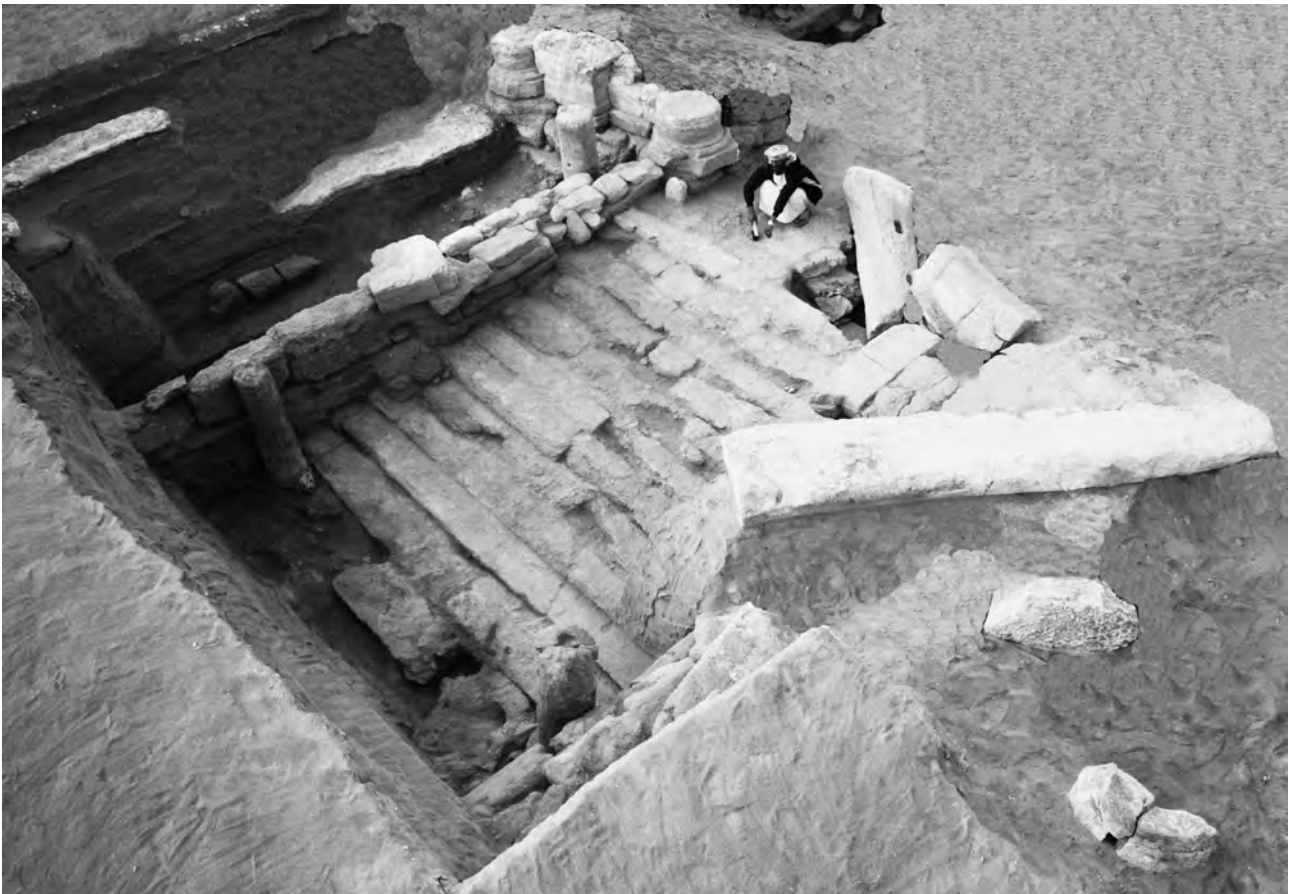
1: Orthophoto of the Isis temple at the end of the 2024 season (compiled by S. Popławski)



2: Orthophoto of trenches 152 and 168 at the end of the 2024 season (compiled by S. Popławski)



1: Trenches 152 and 168 (entrance to Isis Temple). View looking north (photo by S.E. Sidebotham)



2: : Trenches 152 and 168 (entrance to Isis Temple). View looking southwest (photo by S.E. Sidebotham)



1: Northern column (indicated by arrow at top) at bottom of staircase/entrance to the Isis Temple. The arrow at the bottom of the photo indicates a late antique walking surface. View looking north. Scale = 50 cm (photo by S.E. Sidebotham)



2: Trench 168: bottom of staircase/entrance to the Isis Temple on the southern side with recycled column and latest walking surface (indicated by arrow). View looking south southeast. Scale = 50 cm (photo by S.E. Sidebotham)



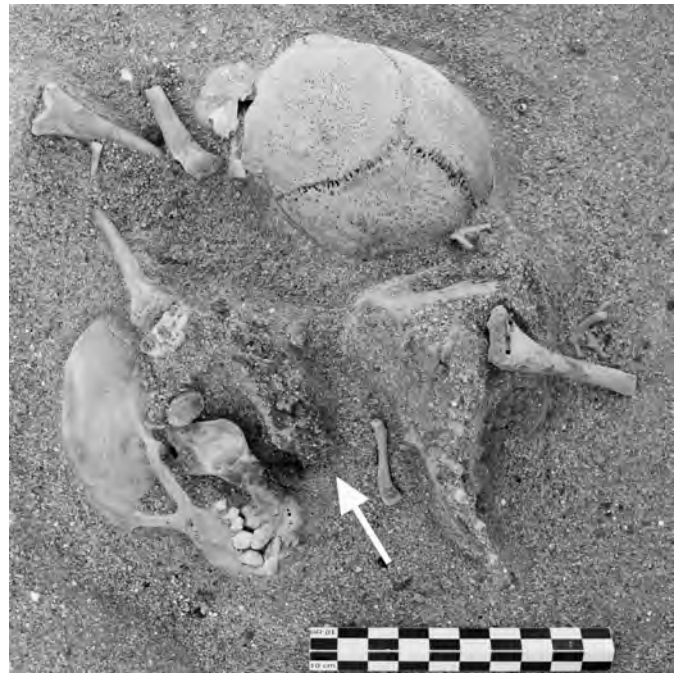
1: Trench 135: robber hole. View facing south. Scale = 50 cm (photo by S.E. Sidebotham)



2: Trench 161 (in Early Roman trash dump/animal cemetery) showing some of the animal burials. Piotr Osypiński sketching the locations of some of the burials. View looking east-northeast (photo by S.E. Sidebotham)



1: Trench 161. Skeletons of two calves. View looking south. Scale = 10 cm (photo by P. Osypiński)



2: Skulls of two monkeys with one at bottom wearing an iron collar (indicated by arrow) in the Early Roman trash dump/animal cemetery in trench 161. Scale = 10 cm (photo by S.E. Sidebotham)



3: Skeletons of a baby monkey hugging a kitten in the Early Roman trash dump/animal cemetery in trench 161. View looking south. Scale = 10 cm (photo by S.E. Sidebotham)



1: Trench 135: fragment of block from a wall relief depicting the Roman emperor Trajan (ruled 98-117 AD) from the eastern face of the wall south of the portal connecting the portico and the courtyard of the Isis Temple. Full black and white increments on the scale = 10 cm (photo by S.E. Sidebotham)



2: Early Roman-era amphora stopper made of plaster from trench 161 (Early Roman trash dump/animal cemetery). It is unusual with the four oval-shaped stamps. Scale = 5 cm (photo by S.E. Sidebotham)



3: Wooden animal tag or restraining device from Early Roman trash dump/animal cemetery in trench 161. Scale = 5 cm (photo by S.E. Sidebotham)



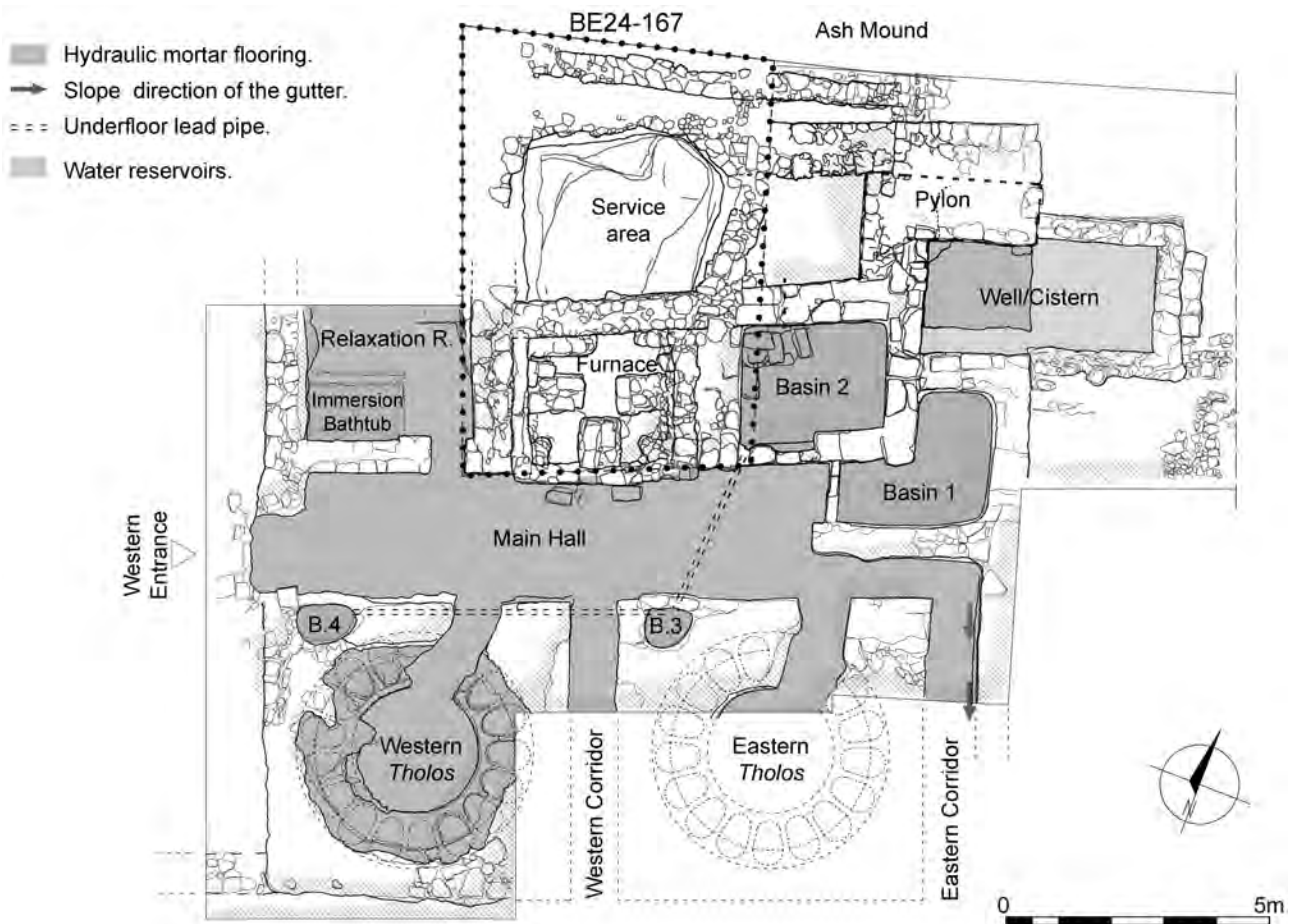
4: Copper-alloy animal collar from the Early Roman trash dump/animal cemetery in trench 161. Scale = 5 cm (photo by S.E. Sidebotham)



5: Fragments of a papyrus roll of the late first/early second century AD from Early Roman trash dump/animal cemetery in trench 161. Scale = 15 cm (photo by S. Popławski)



1: Two sides of a fragment of a wooden writing tablet from Early Roman trash dump/animal cemetery in trench 161. Scales = 10 cm (photos by S.E. Sidebotham)



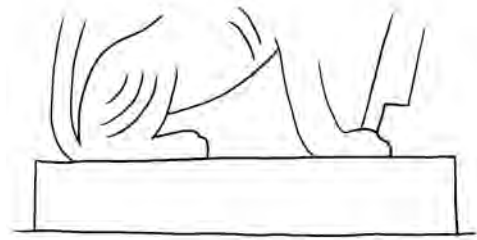
2: Plan of excavated areas of Hellenistic/Ptolemaic bath area with trench 167 indicated by broken line (drawing by S. Popławski)



1: Orthophoto of trench 167 (compiled by S. Popławski)



2: Stamped Pamphylian amphora handle (FAPAP) dating from the second quarter of the second to the end of the first century BC from north/outside the stoke hole of the Hellenistic/Ptolemaic bath furnace in trench 167 (photo by S.E. Sidebotham)



3: Trench 166: Sketch of one of the seated lions holding a knife appearing on the lower part of the walls of the sanctuary (drawn by O.E. Kaper on the basis of six extant figures on the eastern side wall)



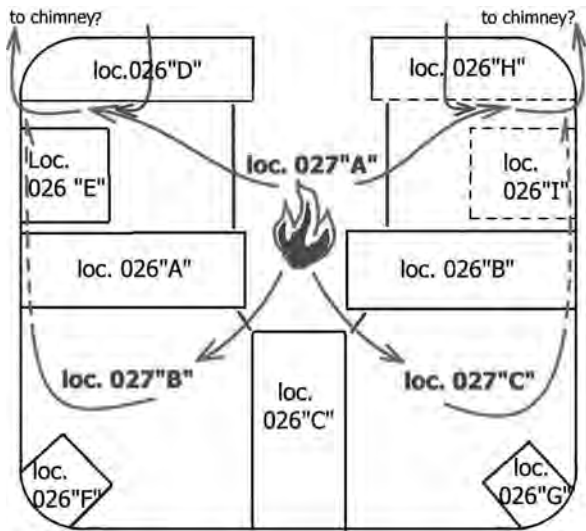
4: Trench 167: Hellenistic/Ptolemaic furnace for hot bath. Note arched entrance to the furnace. View looking south (photo by S.E. Sidebotham)



1: Detail of Pl. XXV 4 above: Trench 167. Northern (outside) face of wall with stoke hole for the furnace for the Hellenistic/Ptolemaic bath. Note arched entrance to the furnace. View looking south. Scale = 50 cm (photo by S.E. Sidebotham)



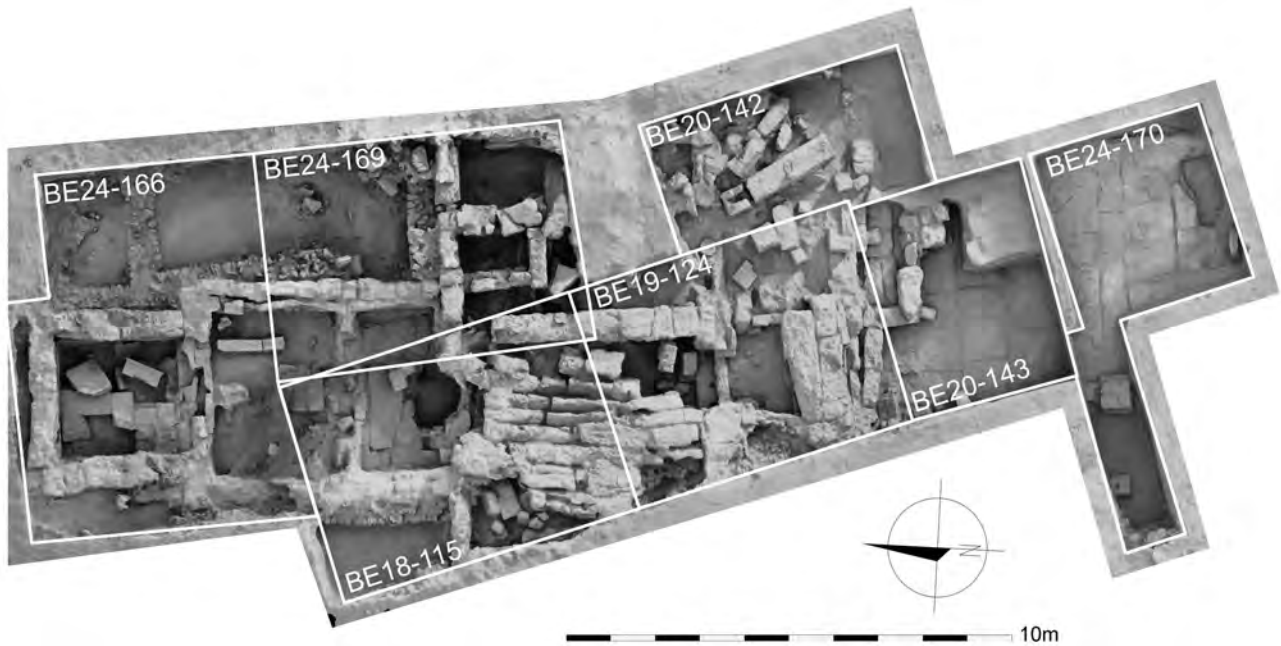
2: Trench 167: Hellenistic/Ptolemaic furnace for hot bath. View looking north (photo by S.E. Sidebotham)



1: Sketch of how the bath furnace in trench 167 functioned (drawing by M.A. Woźniak)



2: Broken relief depicting an unidentified animal/bird (left) and the feet of a human figure (or anthropomorphic deity) from trench 166. Scale = 20 cm. Photo by S.E. Sidebotham



3: Orthophoto of trenches 166, 169 and 170 excavated this season and adjacent trenches excavated in previous seasons (compiled by S. Popławski)



4: Trenches 169 & 166. Door jamb decorated with closed papyrus plant with a cobra wrapped around it. View looking west. Scale = 50 cm (photo by S.E. Sidebotham)



1: Trenches 169 (in foreground) and 166 (background). View looking north-northeast (photo by S.E. Sidebotham)



2: Trenches 166 (in foreground) and 169 (background). View looking south-southeast (photo by S.E. Sidebotham)



1: Trench 166. Western face of wall of Ptolemaic-era shrine decorated with remains (lower portions) of seated lions holding knives (see Pl. XXV 3). View looking east. Scale = 50 cm (photo by S.E. Sidebotham)



2: Trench 166. Northeastern corner of walls of Ptolemaic-era shrine decorated with remains (lower portions) of seated lions holding knives (see Pl. XXV 3). View looking northeast. Scale = 20 cm (photo by S.E. Sidebotham)



1: Trench 166. Upper part of a naos shrine decorated with a small sun disk and a pair of uraeus cobras. View looking south. Scale = 20 cm (photo by S.E. Sidebotham)



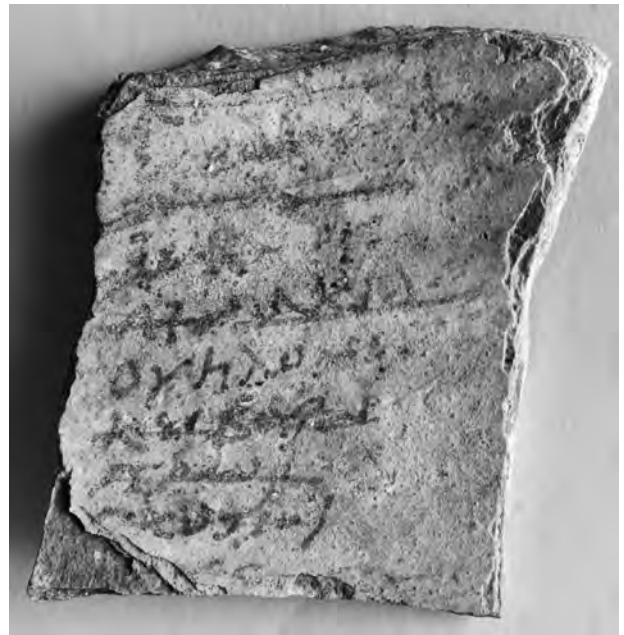
2: Larger than life-size stone head of the first century AD from Trench 169. Scale = 20 cm (photo by S.E. Sidebotham)



3: Trench 170. Flagstone pavement and "pipeline" extension towards the west (top right of photo). Eastern (bottom left arrow) and western (top right arrow) curbing defines the limits of the flagstone pavement. View looking southwest (photo by S.E. Sidebotham)



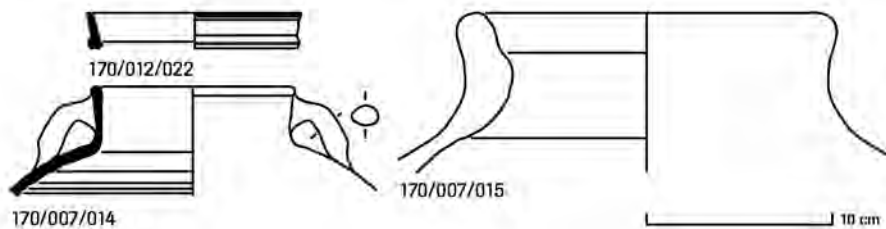
1: Trench 170 with fire pit at the bottom of the photo (beneath scale) and the decomposed white anhydritic gypsum layer atop a trash deposit (above scale). View looking north. Scale = 50 cm (photo by S.E. Sidebotham)



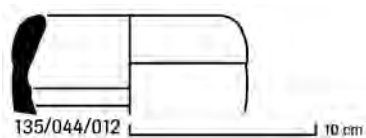
2: Ostrakon probably of the second half of the second or third century AD from trench 166 recording a list of terms related to ships and sailing (photo by S.E. Sidebotham)



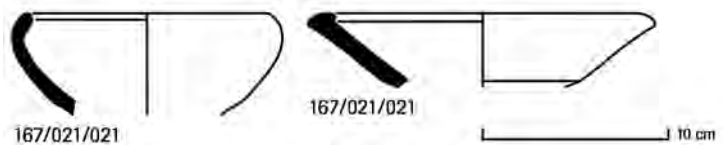
3: Trench 170 (western extension/'pipeline'). View looking north. Scale = 50 cm (photo by S.E. Sidebotham)



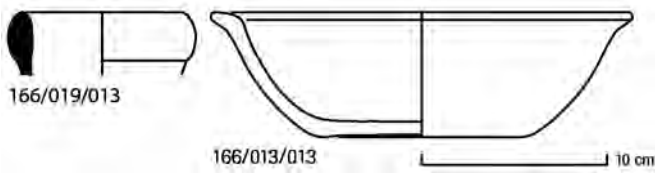
4: Trench 170: Eastern Sigillata A plate Atlante 34 (170/012/022) (top left); Nile silt cooking pot (170/007/014) (bottom left) and South Arabian transport jar (170/007/015) (right) (Drawing by R.C.A. Geerts)



5: Trench 135: Nile silt amphora type AE3a (drawing by R.C.A. Geerts)



6: Trench 167: reduced fired Ptolemaic fine wares (drawing by R.C.A. Geerts)



1: Trench 166: Nile silt amphorae EA3a (left) and Eastern Desert ware bowl (right) (drawing by R.C.A. Geerts)

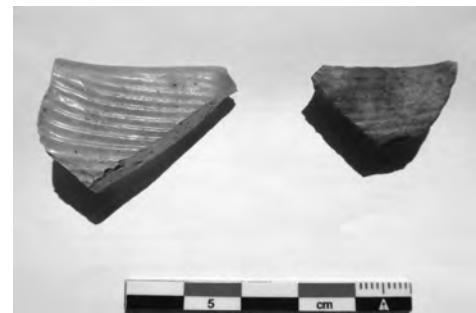


3: Fingers from two bronze statues from trench 168 (entrance to Isis Temple). Scale = 8 cm (photo by M. Bergmann)

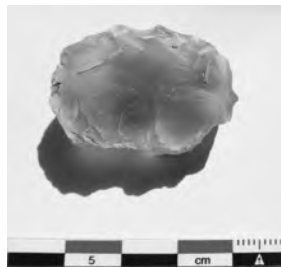
2: Papyrus rolls before unrolling from trench 161. The papyrus on the top was blank; the two rolls on the bottom (beneath scale) constituted parts of a single document in at least three columns (depicted in Pl. XXIII 5). Scale = 5 cm (photo by S.E. Sidebotham and M.A. Sidebotham)



4: Fragment of a plaque used in architectural settings: maybe a wall decoration of a shrine, or an inlay on a sculpture (perhaps deity garments). Scale = 5 cm (photo by R. Kucharczyk)



5: Fragment of a glass bangle. Scale = 5 cm (photo by R. Kucharczyk)



6: A cameo blank. Scale = 5 cm (photo by R. Kucharczyk)



7: Pillar moulded glass bowl fragments. Scale = 10 cm (photo by R. Kucharczyk)



8: Obverse of billon tetradrachm of regnal year 19 (134-135 AD) of the Roman emperor Hadrian (ruled AD 117-138 AD). Minted at Alexandria. Surface find. Scale = 3 cm (photo by S.E. Sidebotham)



9: Reverse of billon tetradrachm of regnal year 19 (134-135 AD) of the Roman emperor Hadrian (ruled 117-138 AD) minted at Alexandria. Depicts personification of the Nile River. Minted at Alexandria. Surface find. Scale = 2 cm (photo by S.E. Sidebotham)



10: Obverse of billon tetradrachm of regnal year four (246-247 AD) of the Roman emperor Philip I (the Arab) (ruled 244-249 AD) minted at Alexandria. From trench 138. Scale = 2 cm (photo by S.E. Sidebotham)



11: Reverse of billon tetradrachm of regnal year four (246-247 AD) of Philip I (the Arab) (ruled 244-249 AD) depicts Nike. Minted at Alexandria. From trench 138. Scale = 2 cm (photo by S.E. Sidebotham)