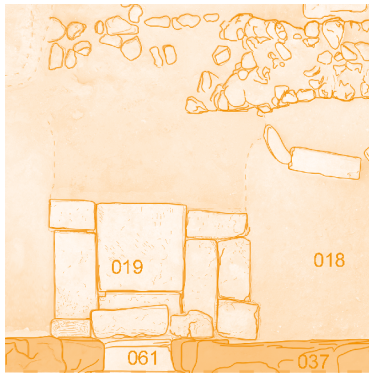
Trash from a temple: a deposit next to the Isis Temple at Berenike (Egypt)



Abstract: The article discusses the stratigraphy and chronological phasing of a late antique trash deposit discovered just outside the north wall of the Isis Temple courtyard. It appears to be consumption waste collected from a large-scale event taking place in the immediate vicinity over a short period of time.
Several elements of architectural decoration were found among the rubble, including three fragments of 'Ionic' cornice blocks that are an indication of the presence of at least one building with a classical-style architecture in the urban landscape.
The fragments are quite unusual in the southern part of the Eastern Desert of Egypt and the first and somewhat unexpected attestation of this style recorded from Berenike.

Keywords: Graeco-Roman Egypt, Berenike, classical architecture, cornice, architectural decoration

Szymon Popławski[1]
Urszula Kraśniewska[2]
Filippo Mi[3]
Jerzy Oleksiak[4]

[1,2] Wrocław University of Science and Technology
[3] Université de Strasbourg
[4] University of Warsaw

The Isis Temple is Berenike's largest and probably oldest urban sanctuary, located practically in the center of the town, at the western end of the main east–west thoroughfare running to the seashore, at the highest point of the urban mound [*Fig. 1*]. Excavations have been concentrated (since 2015) in the walled courtyard and around the main gateway; recently they have also moved into the sanctuary, which is known to have been disturbed

Polish Archaeology in the Mediterranean 30/2
Popławski, Kraśniewska, Mi, and Oleksiak 2021: 387–418
https://doi.org/10.31338/uw.2083-537X.pam30.2.18

Acknowledgments
The Isis Temple Project is an initiative to excavate the Berenike central temple, led by Rodney Ast, Olaf Kaper and Martin Hense, within the framework of the Berenike Project, a University of Delaware and Polish Centre of Mediterranean Archaeology University of Warsaw expedition, co-directed by Steven E. Sidebotham and Iwona Zych (until 2020). The research in 2019 and 2020 was supported by a grant awarded to Ast and Kaper by the Thyssen Foundation. In the 2019 and 2020 seasons, Urszula Kraśniewska and Jerzy Oleksiak participated in the work of the Berenike Project on a PCMA scholarship, financed by the Polish National Agency for Academic Exchange (NAWA).
The authors express their thanks to Iwona Zych and Rodney Ast for comments on an early draft of this paper, as well as to Clementina Caputo for her help with the ceramological analysis.

to some extent by 19th-century digging. In 2019, the northern side entrance to the courtyard was explored also from the outside [*Fig. 1* inset]. Even without contextualizing the finds from Trench BE19-122 in the broader picture of fieldwork carried out inside the temple, the deposits—a multistratified rubbish dump from the late 4th through early 6th century AD—have somewhat unexpectedly encapsulated the complete history of the Ptolemaic Red Sea port and Roman and post-Roman emporium from its founding in the mid-3rd century BC through its decline in the mid-6th century AD.

The location of the city, about 300 km south of Quseir (ancient Myos Hormos), was connected with the development of the road and port infrastructure, turning Berenike into a gateway to the distant regions of Africa and the Indian Ocean [*Fig. 2*]. After almost 20 years of fieldwork, the history of the ups and downs of the harbor and its role as a hub in the regional and supraregional trade networks have been discussed repeatedly and in-depth.[1] It has been demonstrated that after a decline in the late 2nd century BC (reflecting the general situation in Ptolemaic

Fig. 1. Plan of the Isis Temple, above, and its location (A) on a plan of Berenike, based on the geophysical map; location of trench BE19-122 (The Berenike Project: PCMA UW and University of Delaware | drawing and processing S. Popławski)

1 Selected subject-related literature: Sidebotham 2002; 2011; Woźniak and Rądkowska 2014; Zych et al. 2016; Sidebotham et al. 2019; 2020; Woźniak and Harrell 2021; Woźniak at el. 2021.

Egypt), the harbor picked up after the Roman domination of Egypt in 30 BC. This period of prosperity witnessed the construction of the Isis Temple in its Greco-Egyptian form, remnants of which turned up unexpectedly in the late trash deposits excavated outside the northern temple gate. Its central location in the town predestined it to be a place for community feasting on the occasion of multiple religious festivals. The pottery assemblage from the studied trash deposits, which included packaging of various foodstuffs, also luxury and exotic in nature, in the form of amphorae and storage containers, and the cooking and table wares used for food preparation and consumption, illustrates the fact that in the late 4th century events of this kind were still taking place either inside the temple or in its direct vicinity.

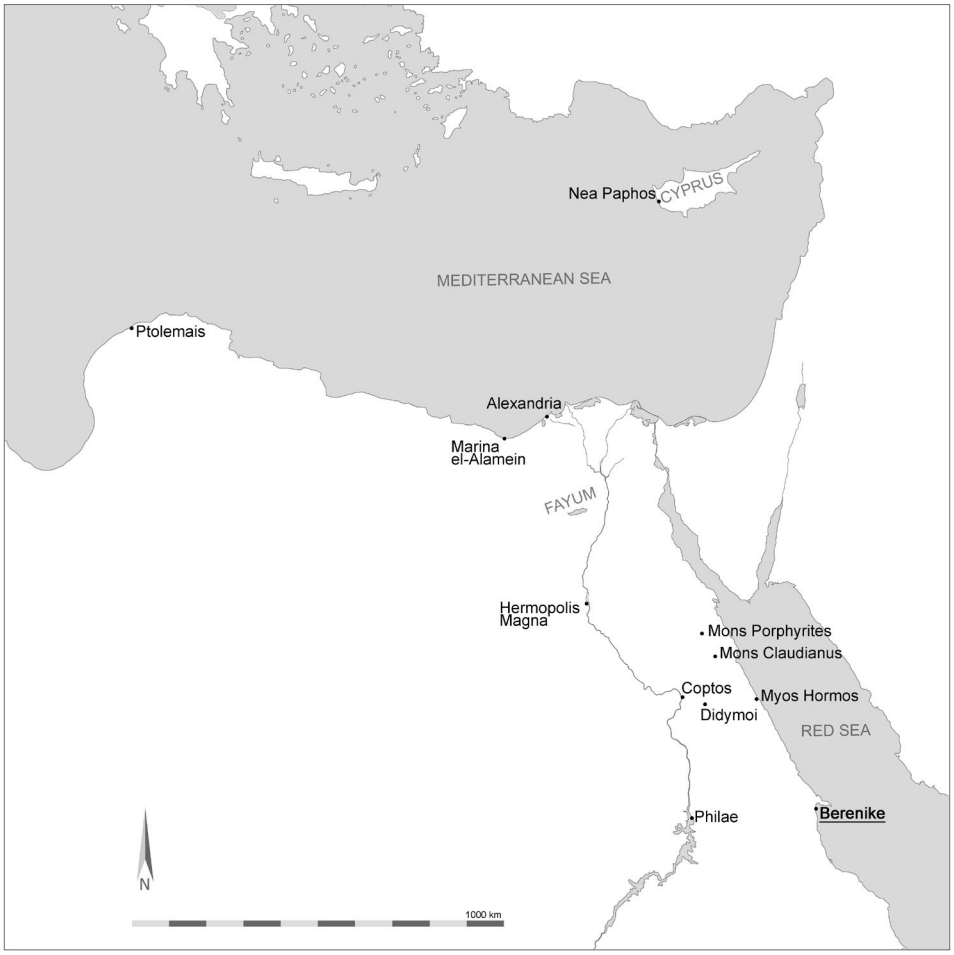


Fig. 2. Location of Berenike in a regional and supraregional context (Drawing and editing S. Popławski)

TRENCH BE19-122

The trench, which measured 5.00 m E–W by 4.30 m N–S, was located north of the Isis Temple, outside the northern entrance of the temple courtyard [see *Fig. 1*]. The central north–south axis of the trench passed through the center of this courtyard door. The location, directly east of the southeastern part of the deep stratigraphic trench BE-10 (excavated from 1996 to 2001), meant that the results could potentially be correlated with the strata identified there (Sidebotham 1998: 97–100; 1999: 13–28; 2000: 3–25; 2007: 54–76).

The trench was excavated down to the level of the original entrance to the temple courtyard, at more or less 4.43 m asl. The earliest excavated level in the trench was dated to the late antique period, the 4th–5th centuries AD. The strata illustrate a number of rubbish-dumping episodes, during which roughly 2 m of accumulations were deposited outside the side entrance to the temple courtyard, obviously leaving a path leading north between the rubbish for at least as long as the temple courtyard was still in use. Nine phases of different duration were distinguished [see below, *Fig. 4*]. All of the phases will be described here briefly with particular attention paid to the trash-depositing episodes.

Earliest phase (Phase I)

The earliest architectural remains in the trench—the part that was excavated because culturally sterile layers were not reached during the season—were located in the northeastern corner. A wall (*015*) was only partly visible in the east baulk [*Fig. 3*; *5:B*]. The position and elevation of these remains indicate that they were at least contemporaneous to the Isis Temple. Blocks of gypsum and coral heads were used as building material, with regular quadrangular blocks as cornerstones. Observations of the masonry and the elevation of the visible part of the wall suggested that this was the exterior. The top of the highest preserved course of ashlars was crusted with salt, suggesting that it could have remained uncovered for a longer period of time.

Fig. 3. Unexcavated structures in the northeastern corner of trench BE19-122: wall *015* in the east baulk (The Berenike Project: PCMA UW and University of Delaware | photo S.E. Sidebotham)

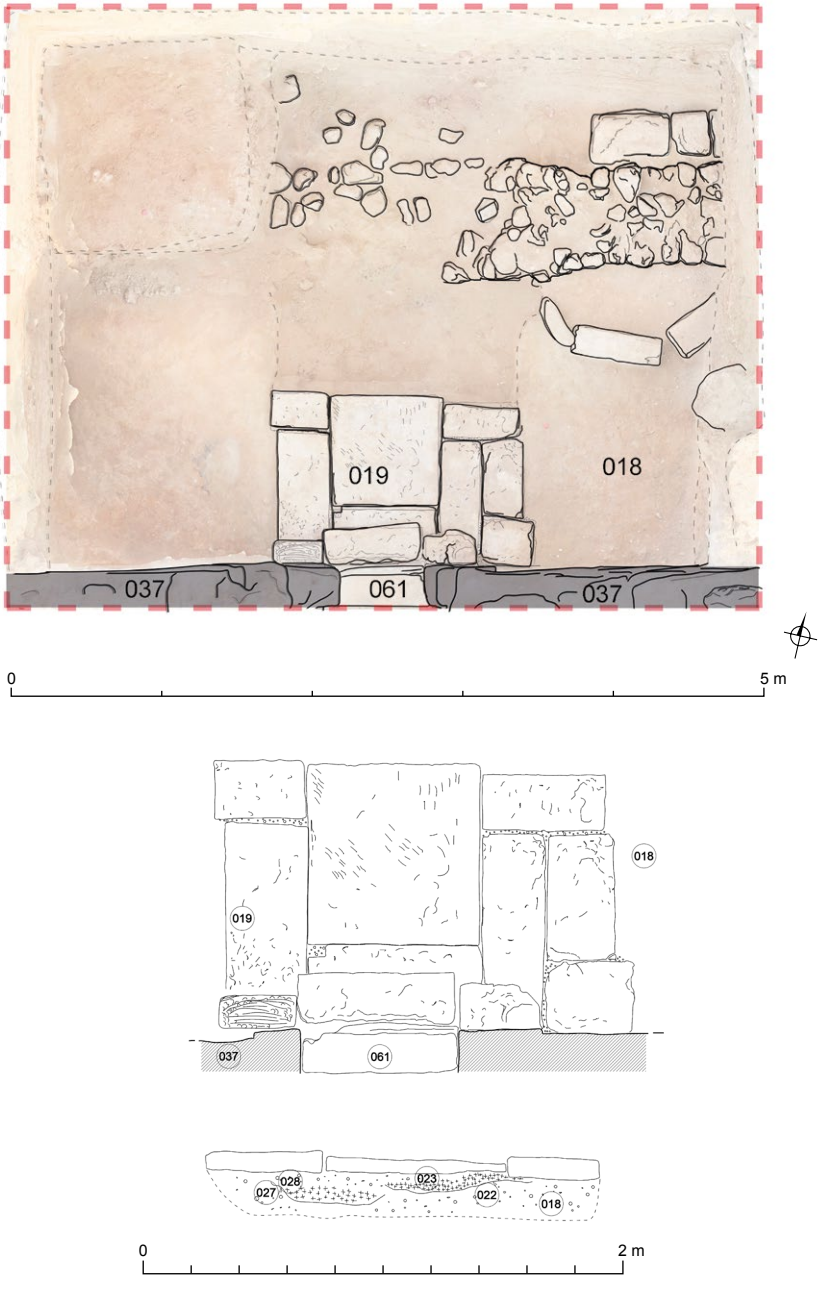


Fig. 4. Plan of Phase I with the pavement in front of the northern courtyard door of the Isis Temple; bottom, plan of the pavement and section through the bedding under it (The Berenike Project: PCMA UW and University of Delaware | drawing and processing F. Mi, S. Popławski)

The space between these building remains and the north courtyard wall of the temple (*037*), which constitutes the southern limit of trench BE19-122 [see *Fig. 5:D*], appears to have served as a passage. The walking surface was formed by a thick layer of clayish sand (Locus *018*) [see *Fig. 5:A,B*]. Three fire pits were cut into this surface, the largest of these being Locus *023* (60 cm by 30 cm). Additional proof of accessibility is provided by an almost complete flask sealed with a gypsum stopper still in place and the name Ἥρων (Heron) incised on its surface (see below, *Fig. 11*]. The state of preservation of this vessel indicates that it was left here once it had been emptied. The vessel is dated by parallels to not before the Antonine period (see below).

Phase I is not the earliest one in this area (excavations were stopped on this level at the end of the season), but it is certainly associated with the functioning of architecture located north and northeast of the temple courtyard. The pottery assemblage from Locus *018* turned out to be of late Roman date with early Roman material, both transport and storage wares and fine wares, mixed in [see below, *Table 1* and the ceramic section of this paper].

Side door to the temple (Phases II & III)

Upon detailed examination of the structure, the side entrance in the north courtyard wall of the temple turned out to be secondary. It was opened in a standing wall, giving apparently onto a passage that passed from the east, alongside the north wall of the temple courtyard, toward the structures that were located directly north of the temple proper (investigated previously in trench BE-10; see Sidebotham 1998: 97–100; 1999: 13–28; 2000: 3–25).

A stone pavement (*019*) in front of the door was installed directly on top of the walking surface *018* from the earlier phase. It covered in part the defunct firepit *023* [see *Fig. 3*]. Rectangular stone slabs were laid unmortared, abutting the exterior wall of the temple and the threshold of the northern doorway. The pavement was only slightly wider than the doorway.

Shortly thereafter a new set of steps (Locus *061*) was added in the doorway, directly on the pavement slabs.

Occupational phase (Phase IV)

A rising ground level in the area was the effect of natural and anthropic phenomena. A 30-cm layer of windblown sand (Locus *014*) accumulated on the walking surface *018*, covering also the pavement in front of the doorway (Locus *016* corresponded to it in the northernmost part of the trench) [see *Fig. 4:A,B,C*]. The sand was probably due to prevailing strong northern winds. It contained ceramics that were attributed to Late Roman types and dated to the 4th–5th centuries AD.

The next layer of sand, Locus *011*, covered already the entire surface excavated within the trench [see *Fig. 4:A,B,C*]. It was a reddish-brown sand, richly steeped in ceramic material that yielded a mix of ceramics, both the Late Roman wares and residual early Roman material [see below, *Table 1*]. This layer was most probably a walking surface, but the finds are the kind of rubbish that typically gets discarded in open space in an urban context. Around the temple doorway, these

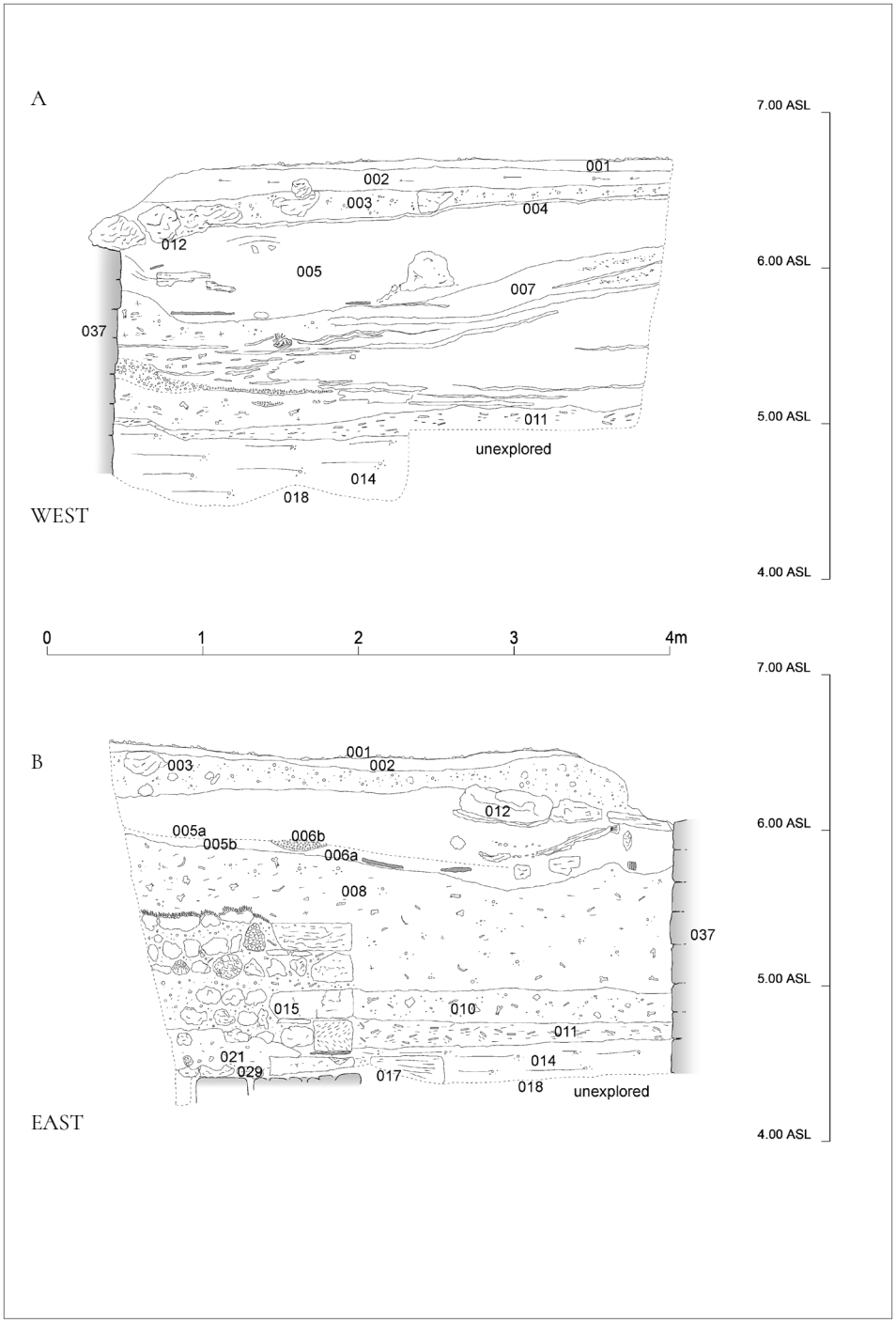
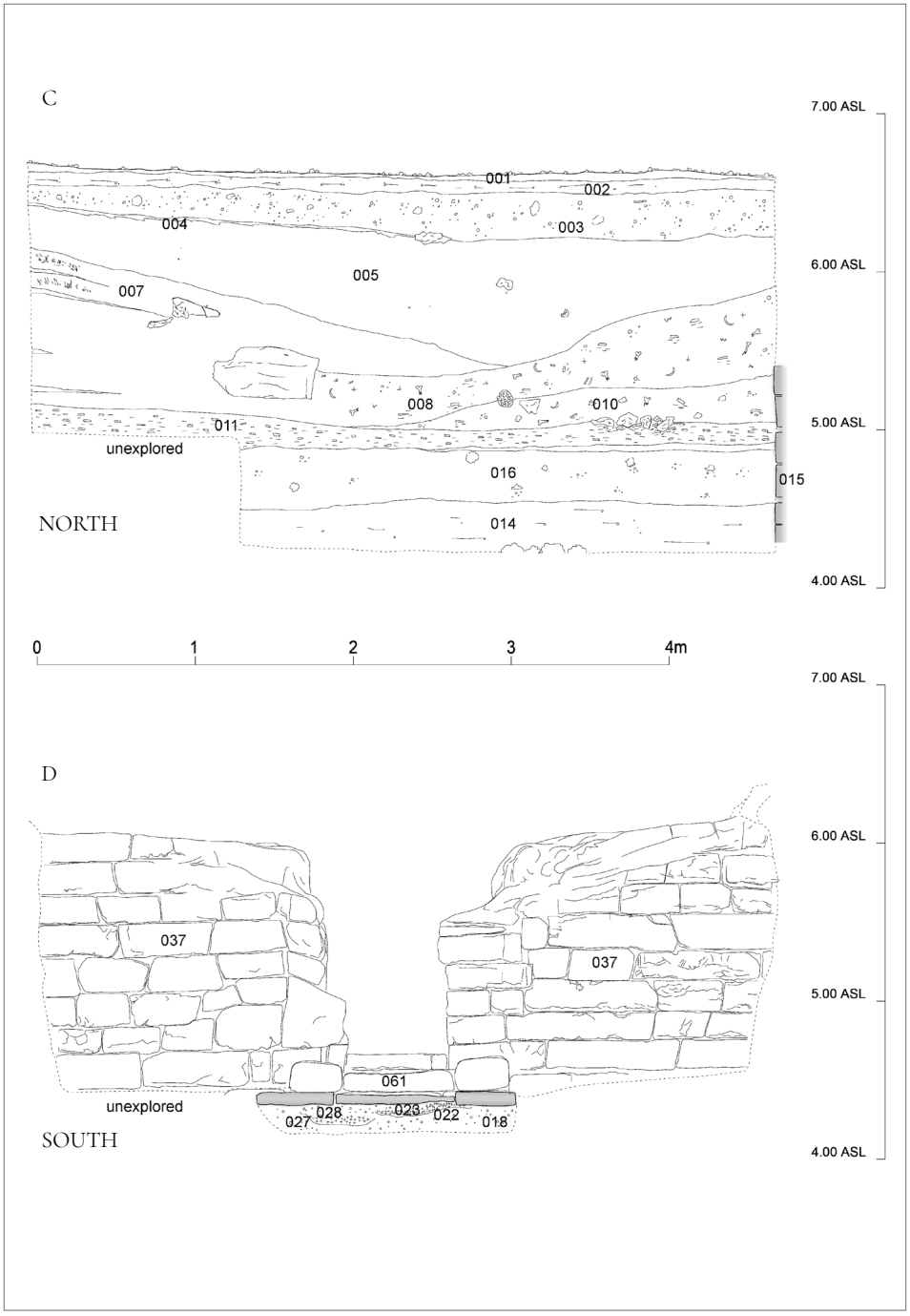


Fig. 5 (this and opposite page). The four sections of trench BE19-122, showing the stratigraphy: A – west wall (left of the courtyard gate); B – east wall (right of the courtyard gate);



[Fig. 5 cont.] C – north wall (opposite the courtyard gate); D – temple courtyard wall with gate in the center, south side of the trench (The Berenike Project: PCMA UW and University of Delaware | drawing and processing F. Mi, S. Popławski)

accumulations tended to be trampled down to ensure passage. However, layer *011* effectively covered from view the steps in the temple doorway.

First episode of dumping rubbish (Phase V)

Rapid accumulation of deposits, rubbish and otherwise, outside the courtyard door of the temple necessitated steps to prevent incursion of the trash into the temple and to facilitate exiting through this doorway into the passage outside. By this time people had to manage a difference in levels at least 0.50 m high. A containment wall (Locus *013*) was built of reused stone ashlars, coral heads, and unworked stone pebbles [*Fig. 6*]. This crude wall, only one-course high, showed some use of a gypsum-based mortar, presumably to make the barrier less permeable. One of the reused stones was a blocked-out capital. In this phase, a layer of trash (context *010*) was building up especially east of the doorway. The physical barrier that was built around the doorway helped to contain this gradually accumulating deposit [see *Fig. 5:B,C*].

Second episode of dumping rubbish (Phase VI)

Trash continued to accumulate in the passage outside the temple courtyard doorway, gradually overruning the stumps of the walls of the structure from the earliest phase in the northeastern corner of the trench. This was the first massive accumulation of trash (Locus *008*) east of the

Fig. 6. Blockage of the northern courtyard door of the temple; arrow indicates a blocked-out capital fragment reused in this wall (The Berenike Project: PCMA UW and University of Delaware | photo S.E. Sidebotham)

doorway. Its considerable thickness is due to the fact that it built up at least half a meter of deposits over wall *015*. This earlier building was quite obviously long abandoned by this time and the evident dip in this layer nearing the north wall of the temple courtyard corresponds to the passage that ran by the temple wall to and beyond the temple side door.

The finds assemblage is well dated to the late period in Berenike (4th–5th centuries AD), corroborated by a bronze coin from the 4th century AD. The large percentage of Late Roman tableware, fine wares, and amphorae in this context indicate a large consumption of food occurring in or near the temple. The rubbish included several fragments of marble revetment, all very small in size (maximum length of 5 cm), which could have come from destroyed decoration inside the temple. Among the other finds are several fragments of green, white, brown glass as well as an example of a gold tile, of which a number of other fragments were found in the fill of the temple rooms and courtyard on the other side of the courtyard wall (R. Kucharczyk, personal communication). Last but not least, the only Ptolemaic stela fragment known from Berenike (I.Pan 70; see Ast 2020), also came from this layer.

Another layer of trash (context *007*) was built up westward from the temple doorway retaining a similar dip in the surface, which could suggest a similar situation, namely earlier architectural remains on this side of the temple. The make-up of this dump was slightly different, containing more decayed organics than *008*. This dump is also intercalated with laminae of practically pure windblown sand, and this multistratified sequence is clearly shown in the section: thin dark brown layers of decayed organic material sandwiched between thin layers of clean sand. The dump slopes down sharply from the northwest to the southwest, building up again against the wall of the temple courtyard. It should be kept in mind that at this point the temple wall was still standing high, at least 3–4 courses of stone blocks more than what survived in the trench.

The two trash depositions appear to have been contemporary with one another. In terms of the pottery assemblage, the finds matched those from the eastern dump [see ***Table 1***]. It deserves note that a passage, on axis with the doorway in the temple courtyard wall, remained open between the two dumps. It is not clear where this path could have led and whether it was still being used at this point in time, but the dip in the ground undoubtedly reflected earlier topography in this area.

Abandonment (Phase VII)

Windblown sand (context *005*) started to cover the rubbish dumps outside the temple courtyard wall. The phase represents a hiatus which lasted long enough for the stumps of the temple walls still rising above ground level to deteriorate and, obviously lacking maintenance, to collapse. The tumble included stone ashlars, mainly of gypsum stone, some very well preserved, others in worse condition, plus several fragments of coral heads, indicating that some of the temple architecture, possibly late structures inside the courtyard space, were either built or repaired with this building material. The rubble

also yielded two fragments of a classical cornice with a flat geison and another large cornice block decorated with dentils [see below, *Figs 12, 13* bottom]. Interestingly, the pottery assemblage from this thick deposit contained only Late Roman material [see below, *Table 1*]

Several fragments of regular, rectangular planks of worked wood, some of large dimensions and in very good condition, were recovered from the area of the collapse [*Fig. 7*]. The longest plank was 1.92 m long and very thin. Teakwood and two kinds of pinewood were identified among the wood (C. Newton, personal communication). It should be kept in mind that a concentration of wooden planks and beams had been recorded in the upper layers associated with the wall of the temple building proper just west of the trench (I. Zych, personal communication).

Final years (Phase VIII and IX)

The wasteland from the previous phase was covered with a layer of compacted sand (context *003*) that extended over the entire trench. The sand contained inclusions of marine salt and decayed gypsum, a variety of natural rocks and coral heads of medium and small size. Among the worked stone there were also fragments of decorated architectural elements, e.g., a ceiling block decorated with stars, which probably came from the nearby temple. A similar dump of architectural members and shattered sculptural and epigraphic pieces was found

Fig. 7. Pine- and teakwood planks in the upper layers of the trench (The Berenike Project: PCMA UW and University of Delaware | photo S.E. Sidebotham)

directly south and southwest, already inside the temple courtyard. The finds from trench BE19-122 (Phase VIII) are most likely to be part of the same collection, especially as the courtyard wall no longer stood as a barrier in this area. The idea is corroborated by the finding of fragments of a very distinctive object: a stele of red quartzite, dated to the reign of Amenemhat IV from the Twelfth Dynasty. Pieces of this Middle Kingdom stele have been found scattered all over the temple courtyard area at different levels of the fill, matching joining fragments already discovered by the explorer Giovanni Belzoni when he first located the site of Berenike in 1818 and tested the temple area (Hense, Kaper, and Geerts 2015; Hense 2019).

Atmospheric events—strong winds and flash floods—contributed to the formation of a sand layer (context *002*), which is heavily mixed with Late Roman pottery and more or less decayed organics: animal bones and hair, animal dung, marine shells, textiles, cordage and basketry fragments. The apparent stationing of sheep/goats near the temple could be linked to a period after the early 19th century, when Berenike was discovered and investigated, first by Belzoni and then by Wilkinson, and even the late 20th century, when the site started to be explored by the American-Dutch team (Phase IX). Excavation in adjacent trenches have brought to light modern materials, which could be traced back to these archaeological episodes in the history of the site.

THE POTTERY ASSEMBLAGE

The amphora assemblage represented the most numerous category among the pottery excavated from the trench. Other categories included storage vessels, kitchen and cooking wares, some plain wares and fine wares, and examples of ceramics identified as the products of workshops outside the Mediterranean area and thus "exotic" in this sense. A closer look at this category, referenced by the more precisely dated fine wares, provides a reliable chronological assessment of the sequence of deposition strata in trench BE19-122.

METHODS AND STATISTICAL APPROACH

A brief explanation of the pottery research methods gives a clearer idea of the statistical approach adopted in this analysis. The ceramic material is collected by sieving all the excavated sediments. It is then washed, dried, and weighed separately for every locus. The next step is a classification of the sherds into the following categories:

1. Fine Ware (**FW**) – imported tableware, including terra sigillata.
2. Plain Ware (**PW**) – primarily undecorated ware, used mainly for preparing and serving meals and liquids, and their storage (forms such as jugs, basins, bowls, table amphorae, etc.).
3. Kitchen and Cooking Wares and Storage Vessels (**KW&SV**) – vessels and other utensils for the thermal processing of food, both imported and of Egyptian origin. Storage vessels/pithoi and other stationary vessels used for storing food products were assigned to this category.

4. Amphorae (**AM**) – vessels for the transport of food products, mainly liquids, made locally in Egypt and outside, at different production centers in the Mediterranean and Red Sea areas.
5. Exotic wares (**ExW**) – vessels produced beyond the Mediterranean, mainly originating from workshops located in the Indian Ocean coastal regions.

Further processing concerned only fragments identifiable to vessel form. These were most often rims, handles, bases, necks, spouts, etc. The minimum number-of-vessels method could not be applied in the short research time available on site in the 2019 season, considering the quantities of sherds collected and the highly fragmented condition of the material.

THE AMPHORA ASSEMBLAGE

The 1118 fragments of amphorae collected from trench BE19-122 represented two chronological horizons: early Roman (1st century BC through the beginning of the 2nd century AD) and late antiquity (end of the 4th century AD through the mid 6th century AD). The bulk of the amphora sherds belonged to the second group (91.2%). This group was dominated by imported containers, reflecting the same pattern as observed to date for other trenches excavated within the Isis Temple.

Late Antique pottery horizon

The following types represent the late horizon in the assemblage:

Late Roman Amphora 1

LRA1 is the most numerous type in the assemblage. It is represented almost exclusively by variants 1A, 1A transitional, and 1B in Pieri's classification (Pieri 2005: 71), dated from the end of the 4th century AD to the 7th century AD [*Fig. 8:A*]. The variety of mica-rich fabrics clearly shows that this type was imported to Berenike from a number of different production sites located on the Cilician coast (Rautman 1995; Pieri 2005: 80–82). Provenance studies are needed for identification of the different LRA1 fabrics. Loci *007* and *008* yielded 169 fragments, the most from any of the contexts in the trench. These amphorae are considered primarily as a wine container (Pieri and Bonifay 1995; Pieri 2005: 83–84), although olive oil need not be entirely excluded.

Late Roman Amphora 3

The type is abundantly present in the assemblage, the identified variants from Pieri's classification including A2 and A3, characterized by double handles and a hollow foot (Pieri 2005: 95–96) [*Fig. 8:B, C*]. The dating of these two forms spans a time from the second half of the 4th through the 5th centuries AD. The type is provenanced in western Asia Minor, with several production sites attested in Ephesus, the Meander valley, Miletos, Pergamon, etc. (Ladstätter 2000). Substantial deposits of these amphorae fragments were found in Locus *011* (225 fragments). It is not known what was transported in these containers.

Late Roman Amphora 4

Only a few fragments could be attributed to this type and only one could be dated more precisely [*Fig. 8:D*]. This fragment represents type 3 in Majcherek's typology (Majcherek 1995: 169, 176) or type B1 in

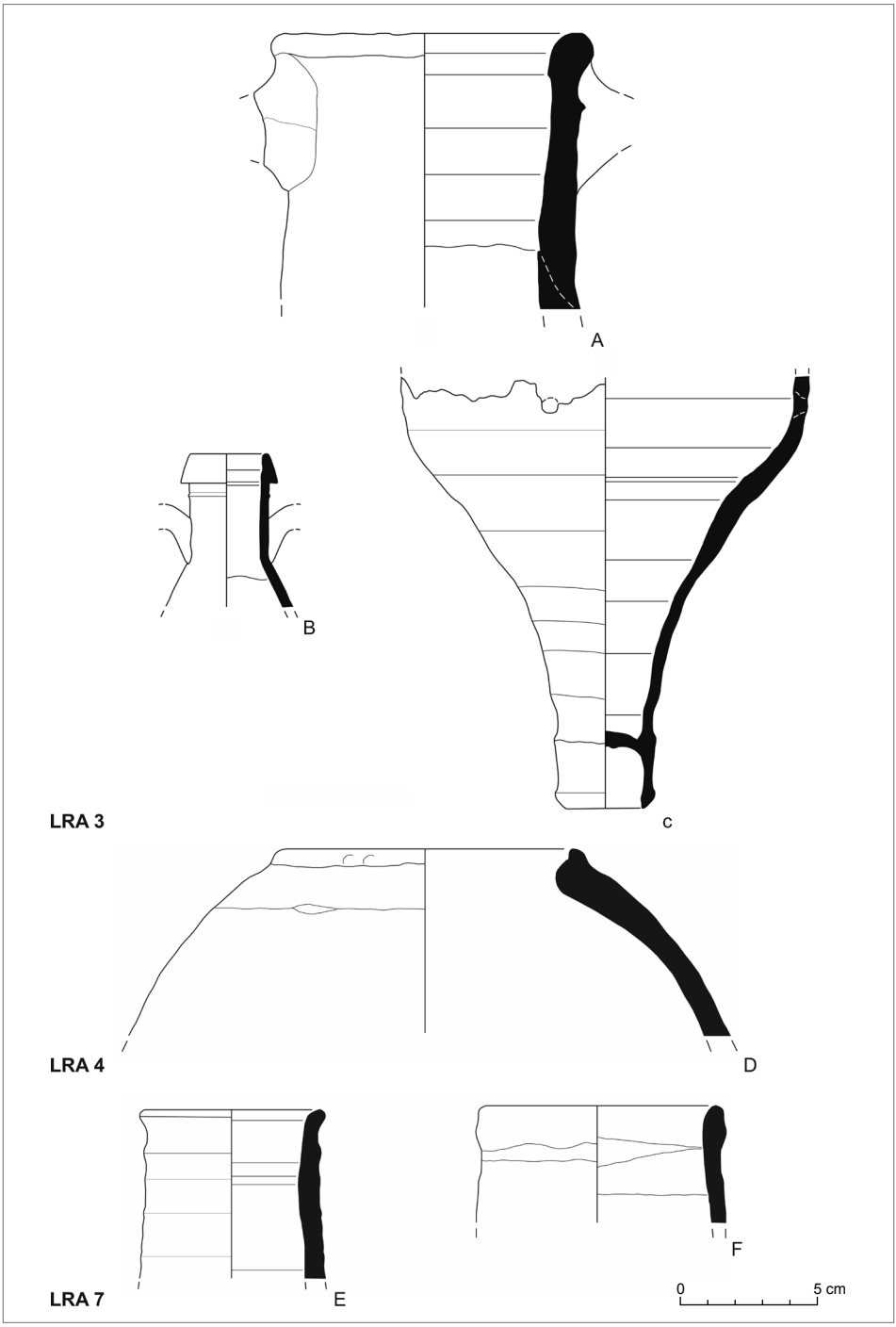


Fig. 8. Late Roman amphorae: A – LRA 1 variant 1B; B – LRA 3, variant A2, rim; C – LRA 3 base; D – LRA 4; E, F – LRA 7 (PCMA UW, Berenike Project | drawing J. Oleksiak)

Pieri's (Pieri 2005: 103), with a thickened and flat rim, and a characteristic irregular accretion of clay just below the rim. This type dates from the late 5th to the 6th centuries AD. John A. Riley (1975) proposed wine as the primary content, most probably from Gaza, which is where this class came from (Pieri 2005: 109–110); the southern Palestinian coast has been suggested based on the medium-hard light-brown fabric with abundant sand temper, fine limestone particles and rare micro-fossils.

Late Roman Amphora 7

This type is the dominant form produced in the Nile Valley, recognized by a distinctive alluvial clay. Handles oval in section and spiked feet, thin and much eroded, were the most frequent finds. A broad dating for the type is from the end of the 4th to the 7th centuries AD. Many of the preserved rims represent types 3 and 4 in Pieri's classification (Pieri 2005: 131) dated between the 5th and 6th centuries AD [*Fig. 8:E,F*]. Wine was proposed as the primary content of these amphorae (Bailey 1998).

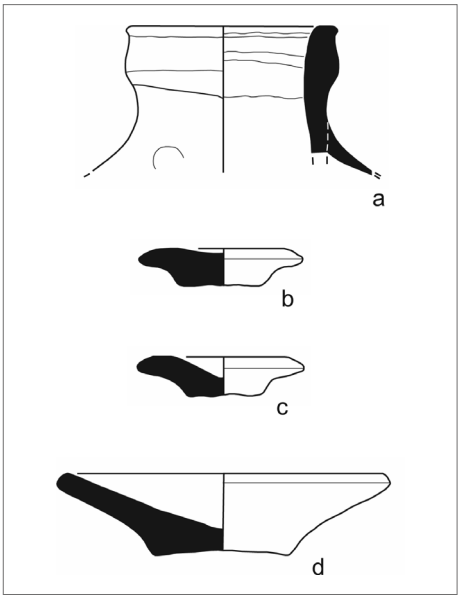


Fig. 9. Kegs (*sigas*): A – rim; B, C, D – lids (PCMA UW, Berenike Project | drawing J. Oleksiak)

Ayla-Axum amphora

Significant quantities of non-diagnostic sherds have been recorded, confirming the presence in the Berenike temple complex of containers produced in the Aqaba Gulf (Melkawi and Whitcomb 1994). The fabric is a characteristic hard greenish-buff to reddish in color, with visible angular quartz grains of fine-to-medium size. Ayla-Axum amphorae are known from multiple sites in the Red Sea and the Western Indian Ocean basin. In Berenike, they are found in contexts from the end of the 4th to the 6th centuries AD. The content of these amphorae is not known.

Keg (*siga*)

Kegs were an important transport and storage vessel in late antiquity, used mainly for drinking water. Many fragments of these characteristic forms with inverse wheeling and separately applied rim were present in the trench [*Fig. 9*], repeating a pattern already established for late antique loci explored inside the temple. Most of the sherds were of a kaolinitic pink clay characteristic of the Aswan workshops. Vessels of the same form and in the same fabric were discovered at Tuna el-Gebel (Lembke et al. 2020: 189–190). Kegs of marl clay are much less frequent. However, the poor state of preservation of the sherds excluded more precise typological observations.

Early Roman pottery horizon

Early Roman amphorae from the trench constituted 9.7% of the assemblage and encompassed vessels produced mainly in the Nile Valley. These containers served as packaging for goods traded from the central Mediterranean. The material is typologically close to assemblages found at comparable Eastern Desert sites, such as Mons Porphyrites (Tomber 2005: 57–58), Mons Claudianus (Tomber 1992; 1996) and Wadi Semna (Sidebotham et al. 2001: 161)

The following types were recognized:

Egyptian Amphora 3

This type (EA3=AE3) was the most numerous form in the assemblage of early vessels. The most frequent diagnostic fragments of this type included characteristic elongated handles, ellipsoid in section, and simply rounded or triangular rims [*Fig. 10*], parallel to types 1.6, 2, 5.2 in Dixneuf's classification (Dixneuf 2011: 110–112, Figs 94, 97) and AE3B in that of Tomber (2007: 530, Fig. 3). These types are dated from the end of the 1st to the beginning of the 3rd century AD. An alluvial organic clay was used for the production of these containers at multiple sites in the Nile Valley (Bailey 1982: 14) and Fayum Oasis (Bailey 1998: 128); a different calcareous fabric used in the Mareotis region (Empereur and Picon 1998) was found in small number in Berenike. Wine was the primary content (Empereur and Picon 1992).

Egyptian Amphora 4

The popular EA4 (=AE4) type is found most often at important trading sites, but was rather rare in the trench discussed here. It corresponds to the Dressel 2–4 type with simple rounded rim and double-barrelled handles. Produced in

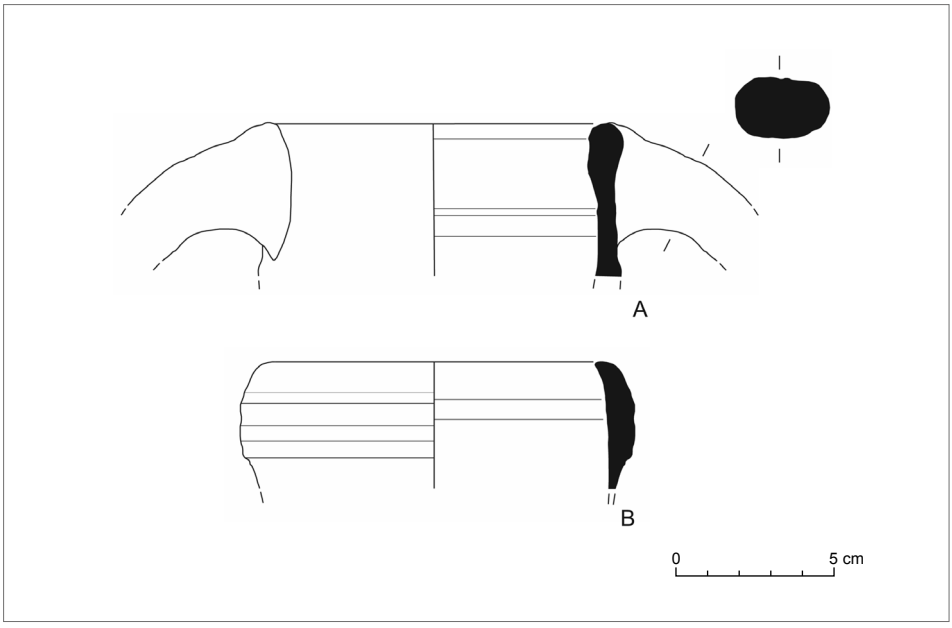


Fig. 10. Early Roman amphorae: AE3 (PCMA UW, Berenike Project | drawing J. Oleksiak)

the Mareotis region, it served as a container for locally produced wine (Dixneuf 2011: 133). The form is dated to the 1st and 2nd centuries AD.

North African amphora

Sporadic finds of non-diagnostic sherds, fired in brick-red lime-rich fabric with characteristic *staccatura* on the surface, could represent different types of early Roman containers of the Punic tradition. Tripolitanian 1 is the only type recognized in Berenike; the same form was documented in Wadi Semna (Sidebotham et al. 2001: 161) and Myos Hormos (Whitcomb and Johnson 1982: 84–85). Only a few diagnostic sherds were found: eroded loop handles and solid spike foot. Early Roman amphorae from Africa Proconsularis, as well as Tripolitania, were packed with olive oil and fish sauce (Bonifay 2004).

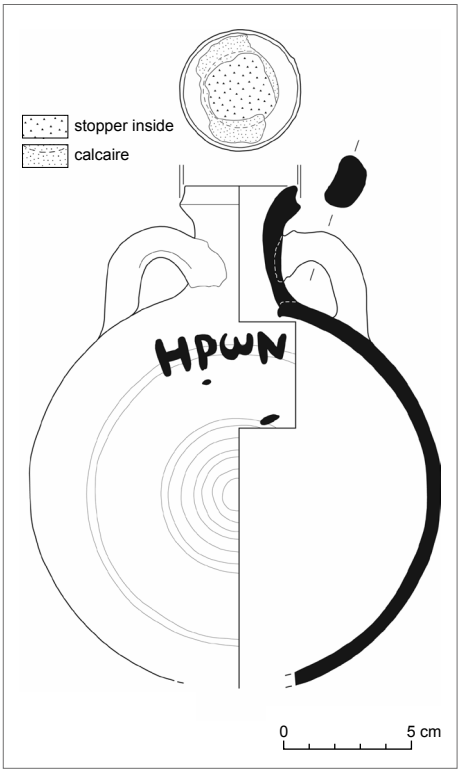


Fig. 11. Pilgrim flask (PCMA UW, Berenike Project | drawing J. Oleksiak after J. Faucher)

Campanian Dressel 2–4

Singular examples of the Campanian black-sand fabric were found in the assemblage from the trench. These vessels are widely distributed, recorded at numerous sites active in the long-distance trade in the Indian Ocean (Tomber 2008: 40, Fig. 3.4). Workshop sites in the Campania region produced this particular type from the second half of the 1st through the 3rd centuries AD. This type served primarily as a container for Italic wine.

Pilgrim flask

Of interest is an almost fully preserved costrel with the original gypsum seal with a sherd as a bung. The vessel was formed of alluvial Nile clay. The form has characteristic inverse wheeling lines on the external and internal surfaces. A flaring rim, externally inverted neck, and simple handles indicate an early Roman date. A black *dipinto* on the external surface, just below the attached neck [*Fig. 11*], finds parallels dated to the early Antonine period at Mons Claudianus (C. Caputo, personal communication) and Myos Hormos (Whitcomb and Johnson 1982: 78–79). However, similar forms were found in late antique contexts within the temple itself and in the 5th-to-7th century AD cemetery contexts in Wadi Sikait (forthcoming).

DATING OF THE ASSEMBLAGE

The entire chronological sequence of the pottery from the trash deposits, from bedrock to the top layer, dates to late antiqui-

ty, between the 4th and 5th centuries AD. It is surprisingly homogeneous [*Table 1*]. However, the presence of intrusive early Roman sherds in such significant quantities, among the amphorae as well as fine wares, is intriguing at the very least. The late fine ware assemblage is dominated by White Slipped bowls made of Aswan clay and Egyptian Red Slipped Ware bowls and plates made of alluvial Nile clay. Mixed in is a set of mostly non-diagnostic early Roman sherds of Italic terra sigillata, Eastern Sigilatta A or thin-walled fragments of Italic Barbottino vessels.

The monochronological bulk of LRA 1 and LRA 3 material suggest a rather short period of time for depositing the rubbish dump outside the northern temple courtyard wall. In this situation, the early Roman material found in the trench must be either residual or discarded with the debris from building works carried out in the central district of the city between the 4th and 5th centuries AD.

Table 1. Dating of amphorae and fine wares from the loci with pottery excavated in trench BE19-122

Locus	Phase	Amphora dating*	Fine Ware dating**
001	VIII	ER/LA mixed	–
002	VIII	LA	LA
005	VII	LA	LA
007	VI	ER/LA mixed	LA
008	VI	ER/LA mixed	ER/LA mixed
009	VI	ER/LA mixed	LA
010	IV	ER/LA mixed	ER/LA mixed
011	IV	ER/LA mixed	ER/LA mixed
014	IV	LA	LA
016	IV	LA	LA
018	I	ER/LA mixed	ER/LA mixed
023	I	ER/LA mixed	–

** Amphora identification and dating: J. Oleksiak; ER = Early Roman, LA = Late Antique*

*** FW sherd identification and dating: K. Domżalski*

CORNICE ELEMENTS

Elements of architectural decoration found in the trench included three fragments of cornices, a piece of a blocked-out capital and a fragment of a Greek inscription carved in stone (I.Pan 70, Ast 2020). The cornices merited attention because of the 'Ionic' characteristics of their decoration, while the stone of which they were made was a local gypsum variety,[2] intimating that the dressing and carving of the stone took place near if not on site.

None of the pieces bear traces of whitewash or polychromy. Two (012 and 005) are cornices with a flat geison, the third (013) has 'Ionic' dentils.

CATALOG

1. BE19-122-012 [*Figs 12* top; *13* top]
Fragment consisting of a cymatium, made of a cyma recta; and a thin flat geison without consoles, separated from the cymatium by two fillets. The soffit of the geison was finished with an edge protru-

2 The stone material was identified in 2019 by the site geologist James A. Harrell (personal communication); for the physical characteristics of this building material see Harrell 1996: 125–130, 136–137).

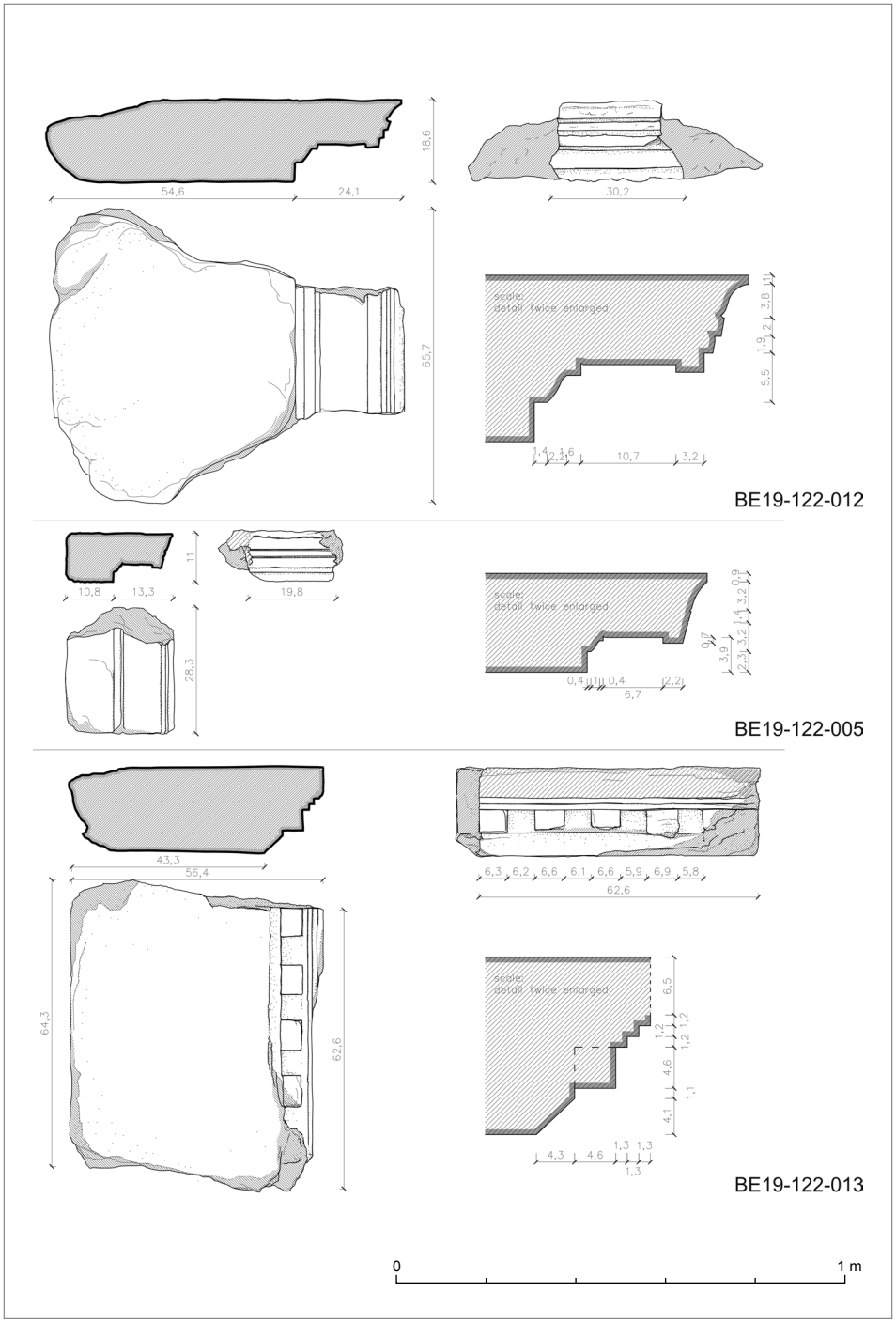


Fig. 12. Cornice block fragments: top, BE19-122-012; center, BE19-122-005; bottom, BE19-122-013 (The Berenike Project: PCMA UW and University of Delaware | drawing F. Mi, S. Popławski)

Fig. 13. Cornice fragments: top, with flat geison (BE19-122-012); bottom, with dentils (BE19-122-013) (The Berenike Project: PCMA UW and University of Delaware | photos M. Bergmann, S. Popławski)

sion and resting on moldings, most likely a fillet and a cyma recta.
Dimensions: Section height 18.6 cm, maximum protrusion 24.1 cm; block width 65.7 cm (30.2 cm of the molding preserved), block depth 78.7 cm.
Preservation: Heavily eroded and with major losses of the substance, but enough of the block surfaces survives for the original form to be reconstructed.

2. BE19-122-005 [*Fig. 12* center]
Cornice fragment consisting of a cymatium made of a cyma recta; and a thin flat geison without consoles, separated from the cymatium with a fillet. The soffit of the geison was finished with an edge protrusion and supported on moldings, most likely a fillet and a cyma recta.
Dimensions: Section height 11.0 cm, maximum protrusion 13.3 cm; preserved block width 28.3 cm, preserved block depth 24.1 cm.
Preservation: Approximated original shape based on the preserved surfaces.

3. BE19-122-013 [*Figs 12* bottom, *13* bottom]
Fragment representing an 'Ionic' cornice with dentils of simplified shape, spaced exceptionally wide, resting on a geometricized molding, probably inspired by a cyma recta or ovolo. The cymatium and geison were not preserved, although there appears to have been room only for the geison (top of block broken). Three fillets (less likely a fillet and a cavetto) preserved between the row of dentils and the presumed geison.
Dimensions: Section height 19.9 cm, maximum protrusion 12.8 cm (without geison); block width 64.3 cm, block depth 56.4 cm (without geison); dentil height 4.6 cm, dentil protrusion 4.6 cm, dentil width approximately 6.6 cm, intervals between dentils about 6.0 cm.
Preservation: Heavily eroded, extensive losses. Original form of the block impossible to reconstruct, the presence and shape of the geison and cymatium not proved beyond a doubt.

PARALLELS FROM EGYPT

While closely related to the Ionic order, the three architectural pieces presented here are not canonical in form. They differ in the sequence and proportions of the various elements, taking after 'Ionic' cornices developed in Ptolemaic Egypt rather than Vitruvian principles (Pensabene 1993: 92–108). The form is less decorative, only the basic moldings without the more ornamental ovolo, astragal, consoles, or modillions. The simplicity suggests use in an 'Ionic' order rather than a Corinthian one with 'Ionic' cornice, as proposed by Pensabene for cornices of analogous appearance (1993: 92–108). Pensabene also made a point of the fact that the use of mixed orders is commonly observed in Egypt, hence these elements need not have been part of a pure order.

Cornices with flat geison

The cornice with flat geison was widely represented in Alexandria. Many similar fragments have been recorded (Pensabene 1993: 494, Cat. Nos 805, 806). According to Pensabene, these two fragments, dated to the 2nd–1st century BC, were 17 cm high and were placed over a passage, as indicated by the form of their edges. Other pieces of the same date also represent a simple form of the cornice

with flat geison, differing only by one molding (Pensabene 1993: 493–494, Cat. Nos 800–804).

Cornice with dentils

Blocks with analogous spacing and proportions of the dentils, as well as similar moldings and their sequence, are also found among the 2nd–1st century BC material described by Patrizio Pensabene (1993: 495, Cat. Nos 815–816). Grzegorz Majcherek assigned a slightly later date in the 1st century BC–1st century AD to analogous architectural elements from an early Roman House excavated in Sector MX at Kom el-Dikka (Majcherek 1999: 33–34, Fig. 6). Discussing other Alexandrian parallels, Barbara Tkaczow dated them to Ptolemaic and early Roman times (Tkaczow 2010: 98, 226–229, especially Cat. Nos 609, 612, 629, Pls XIII, LXIII, LXIV). A Ptolemaic origin was also considered in the case of a cornice block from Hermopolis Magna (Bailey 1991: 13–14, Fig. 7b), which was discovered reused as *spolia* in the Roman Komaste-

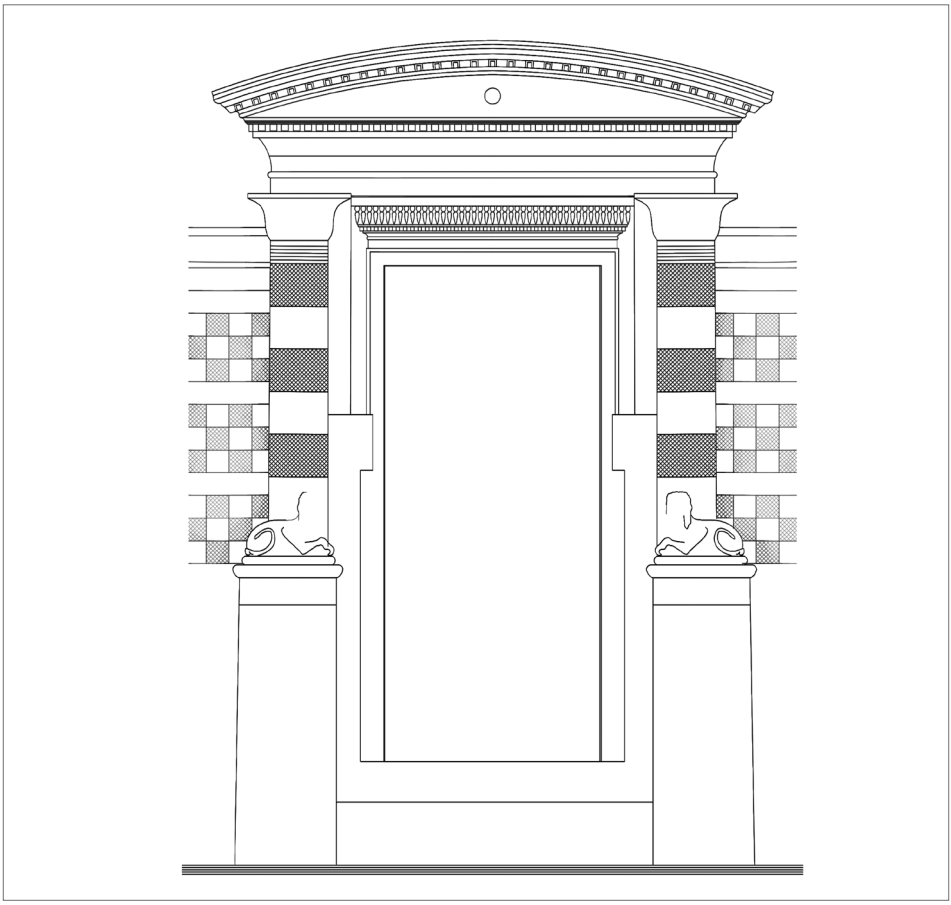


Fig. 14. Decoration of the doorway in Hypogeum 2 at the Anfushi Necropolis (After Adriani 1952: 70 | drawing S. Popławski)

rion. On the other hand, cornice blocks from Marina el-Alamein (Czerner 2009: 103–105), especially B.A.004, were found in archaeological contexts dated from the 1st to the 6th century AD.

The dentils in the Berenike cornice were almost square, the spacing between them almost as wide and their depth almost equal to their height, imparting on them full plasticity. An identical form was considered as developed in late Ptolemaic and early Roman Alexandria, and associated with mixed-style architecture, Greco-Egyptian or Egyptian with single intrusive Greek decoration elements (Pensabene 1993: 107). Parallels are to be found in the Alexandrian cemeteries: Anfushi Hypogeum 5, dated to the 1st century BC (Adriani 1952: 87–97), and Kom el-Shoqafa, dated to the 1st–2nd centuries AD (Pensabene 1993: 104–107). Finally, the closest parallel with an analogous form of the dentil course and the three fillets above it, found in Anfushi Hypogeum 2, dates to the 2nd century BC (Adriani 1952: 61–79; Pensabene 1993: Pl. 177; McKenzie 2007: 71–72) [*Fig. 14*].

Eastern Desert architecture

Settlement and infrastructure development in the Eastern Desert in Ptolemaic and Roman times was dependent on trade and mining activities (Sidebotham 2011). Settlements established in connection with harbors, mines, quarries, and forts defending the trade routes did not favor monumental and richly decorated architecture. Current excavation results have largely confirmed the particularly functional character of these urban complexes. As far as architectural edifices are

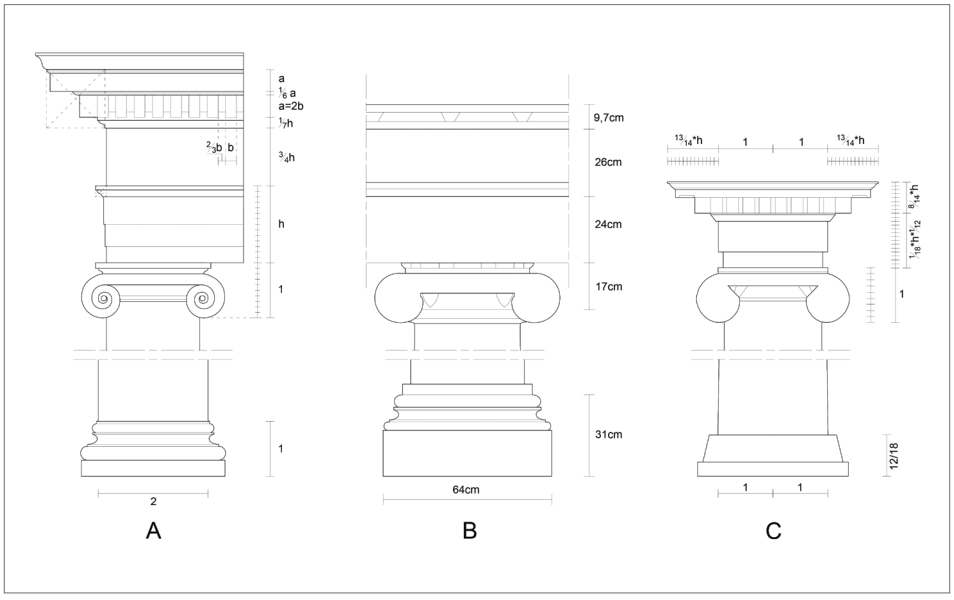


Fig. 15. Principles governing the construction of architectural orders: A – Vitruvian Ionic order; B – Ionic order from Mons Porphyrites; C – Pseudo-Ionic order from Marina el-Alamein (After Vitruvius [A]; Kraus, Röder, and Müller-Wiener 1967 [B]; Czerner 2009 [C] | drawing U. Kraśniewska)

concerned, the largest and most important were the Serapeum at Mons Porphyrites, built in the Ionic order (Kraus, Röder, and Müller-Wiener 1967: 172–181), the Isis Temple in Berenike which appears to have been in the Egyptian style, and the Tetrastylon in Berenike (Sidebotham et al. 2019: 11–12; 2020: 15–16). A Roman-period habitation, the so-called 'Roman Villa', in use from the 1st to the 3rd century AD, is known from Quseir al-Qadim (ancient Myos Hormos) (Whitcomb and Johnson 1982: 21–31, 51–52). Houses of apparently similar layout, displaying characteristics of classical architecture, have been recognized on the magnetic mapping of the southern parts of the late town in Berenike (Zych and Herbich 2015: 109–115).

The form of the cornice elements found in Berenike appears to be dependent on the Ptolemaic and early Roman 'Ionic'-style architectural order, while the cornice with dentils might have originally been part of a mixed-style architectural decoration. The lesser quality of the local stone would have been responsible to some extent for the simplicity of the ornamentation. Actually, local architecture all over the Eastern Desert was strongly compromised by limitations imposed by the quality of available building materials. This is probably why there is so little richly decorated architecture in and around Berenike, especially in Ptolemaic times and in the 4th–6th centuries AD. Notwithstanding, another probable reason are the limitations of Eastern Desert archaeology, where later post-classical accumulations are responsible for the poor recognition of earlier structures.

RECONSTRUCTING EDIFICES BASED ON PRINCIPLES OF ARCHITECTURAL ORDERS

In classical Greek and Roman architecture, the basic architectural orders were constructed based on universal principles, an axiological collection of which appears in Vitruvius's *Ten Books on Architecture*. The work was an expression of common and fundamental building convictions in use in antiquity (Tarnowski 2012: 185). Today, it is a source of information on how ancient builders approached the subject of construction of architectural orders. Of the three classical orders, only the Doric and the Ionic have each a characteristic entablature of its own. The Corinthian order used the entablature of the Ionic order (Vitr. 4.1.2). According to Vitruvius, the classical Ionic cornice [*Fig. 15:A*], including the cymatium (without sima), should have the same height as the central fascia of the architrave. The crowning cornice should project a distance equal to the height from the frieze to the top of the cymatium. Another important element is the dentil shape, which, according to Vitruvius's principles, should have the height of the central fascia of the architrave and be twice its width. The gap between the following dentils should be 2/3 of the width of a single dentil, and the cymatium above them should be 1/6 of its height (Vitr. 3.5.11).

A theoretical reconstruction of the architecture of the Temple of Serapis in Mons Porphyrites, an edifice from AD 117–119, was carried out making use of Vitruvian principles (Kraus, Röder, and Müller-Wiener 1967: 172–181) [*Fig. 15:B*]. The result, including the architraves, is a well-proportioned decoration. The

capitals are of the Ionic order, but details typical of classical decoration are absent. There are no volutes, egg-and-dart or leaf-and-dart ornamentation in the decoration of the capitals. The surfaces of the volutes are smooth. It is typical of this decoration that it lacks the architraves while all the other structural elements are present. Cornices with consoles are also used, simple and disproportionately flat (Kraus, Röder, and Müller-Wiener 1967: 175, 177). The authors of the reconstruction pointed out some inspiration from the Egyptian tradition. Moreover, they increased the height of the architrave, originally assumed and modelled on the Vitruvian canon, in order to match visually an oversized cymatium (Kraus, Röder, and Müller-Wiener 1967: 176–177).

Universal rules shaping local architectural orders, based on a study of Vitruvius, have been formulated also in the case of Marina el-Alamein, a Hellenistic and Roman site on the northwestern coast of Egypt (Czerner 2009). The styles there, described as geometrized, resemble their classical counterparts. The Pseudo-Ionic entablature[3] corresponded to the classical Ionic one, the components of which were for the most part present (Czerner 2009: 12).[4] Blocks with a dentil course belonged to a Pseudo-Ionic order, as attested by contextual discoveries of these blocks with an almost full set of lower elements (Czerner 2009: 22). Departures from the classical order included a division of the fasciae in the architraves, and largely no friezes above them (Czerner 2009: 12–13). The cornices were simplified in form and furnished with straight mouldings [*Fig. 15:C*]. The impression of simplification is particularly evident in the smaller elements: undercuts under the geison and the cymatium (Czerner 2009: 15).

Certain trends can be observed in the decoration of the three fragments from Berenike: moldings with additional straight lines, flattened elements, and a disproportionality of these elements. However, the trend toward simplified forms is observed as a broader phenomenon in the region of Ptolemaic influence (in and around Alexandria), exemplified most clearly by the form of blocked-out capitals.[5] One should also keep in mind intentional omission of structural elements, e.g. friezes in Marina el-Alamein and architraves at Mons Porphyrites. Frequent use of wooden architraves in place of stone ones has also been noted in Egypt and the surrounding regions (Pesce 1950; Nowicka 1959; Czerner 2009). All things considered, it is practically impossible to reconstruct the original appearance of the discussed architectural decoration from Berenike without knowing the principles used in this particular case. Any attempt would lead to error proportional to the differences distinguishing local orders from canonical ones.

3 Entablatures and cornices of the local pseudo-Corinthian examples were usually the same; sometimes the only distinction between these orders was in the capitals (Czerner 2009: 22).

4 The other main type of cornices found in Marina el-Alamein was characterized by flat-grooved and square hollow modillions decorating the soffit of the geison (Czerner 2009: 22).

5 A selection of reading on the subject: McKenzie 1990; 1996; Pensabene 1993; Patrich 1996; Laroche-Traunecker 2000; Czerner 2009; Grawehr 2017; Brzozowska-Jawornicka 2019; Grawehr and Brzozowska-Jawornicka 2020.

CONCLUSIONS

The excavation of trench BE19-122, located directly outside of the doorway leading from the temple courtyard to the district north of the sanctuary, has uncovered deposits that reflect the changing function of this space. The fitting of this doorway, apparently secondary already in the late 4th–5th centuries AD, with a paved porch, should be viewed as an indication of expected, fairly heavy traffic heading for the structures in this area. Analyses of the stratigraphy in the trench demonstrate the presence of paths following the course of the temple courtyard wall and leading straight north from it. However, the intensive accumulation of trash led to a rapid rise of the ground level outside this entrance, necessitating a containing wall that helped to keep the doorway open and the accumulating trash from spilling into the temple courtyard (Phases II to IV).

The rubbish dump, which reveals two episodes of deposition (Phases V and VI) occurring in close succession, yielded an assemblage of pottery (as well as other finds not discussed here) and a collection of animal bones, including long-horned cattle (M. Osypińska, personal communication) that can be considered as representing activities related to large-scale consumption over a limited time. The nature of the pottery, including cooking wares and tableware, and not the least, a differentiated set of transport and storage containers, suggest easy access to large quantities of edible goods, including foodstuffs originating from both the Eastern Mediterranean and the Western Indian Ocean Basin. This reflects, on one hand, the extensive trade network, for which the harbor of Berenike served as a hub. On the other hand, the luxury character of many of these goods is proof of the elite nature of the consumption taking place within the temple and/or in its immediate vicinity.

An analysis of the late antique transport vessels from this rubbish dump corroborates the timing of these events connected with food consumption, placing them between the end of the 4th and the 5th centuries AD. Interestingly, while the dumps are securely dated by the pottery finds, they contain residual early Roman material, including also a fragment of a Ptolemaic stele. It is a pattern noted also in other trenches with late deposits (Kucharczyk and Zych 2018). It could be speculated that this reflects intensive rebuilding within the town, inside the temple as well as in its direct neighborhood.

The elements of architectural decoration, which a formal analysis attributed to a local version of the 'Ionic' order, dated most probably to the 1st century BC–1st century AD, came from the latest phase of the dump, linked to the collapse of the aboveground parts of courtyard wall (Phase VII). They constitute one of the first attestations of the classical style in Berenike. Certain characteristics of the cornice fragment with dentils suggest a Greco-Egyptian mixed-style decoration. Considering the findspot, it can be speculated that these elements were part of the architectural make-up of the Isis Temple in its early Roman phase. However, before a reconstruction of the appearance of this edifice is proposed, including considera-

tions of its size, it is necessary to establish a complete catalog of the principles ruling the construction of this Berenikan order, which could have been uncanonical. For this, a full set of elements of this order would be needed, hopefully from continued excavation of the Isis Temple site. The conclusion at present is that the recording of these fragments from the Berenike site is a harbinger of future discoveries of classical-style architecture in this Red Sea port on the fringes of the Classical world.

Szymon Popławski
https://orcid.org/0000-0002-0208-1903
Wrocław University of Science and Technology
PhD Candidate
szymon.poplawski@pwr.edu.pl

Urszula Kraśniewska
https://orcid.org/0000-0003-0201-7642
Wrocław University of Science and Technology
PhD Candidate
urszula.krasniewska@pwr.edu.pl

Filippo Mi
https://orcid.org/0000-0002-8648-0134
Université de Strasbourg
PhD Candidate
filippotmi@gmail.com

Jerzy Oleksiak
https://orcid.org/0000-0002-9631-2097
University of Warsaw
PhD Candidate
jerzy.oleksiak96@gmail.com

How to cite this article: Popławski, S., Kraśniewska, U., Mi, F., Oleksiak, J. (2021). Trash from a temple: a deposit next to the Isis Temple at Berenike (Egypt). *Polish Archaeology in the Mediterranean,* 30/2, 387–418. https://doi.org/10.31338/uw.2083-537X.pam30.2.18

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Abbreviations

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