

# Beads and pendants from the Hellenistic to early Byzantine Red Sea port of Berenike, Egypt Seasons 2014 and 2015



**Abstract:** Almost 650 beads and pendants, most of them of glass and faience, were excavated over two seasons in 2014 and 2015 at Berenike on the Red Sea coast of Egypt. This material, coming from 19 trenches variously located within the Hellenistic to early Byzantine site, has contributed some new data, enhancing the Berenike bead typology. Highlights included a Bes pendant of glass from a Hellenistic context and early Roman mosaic glass beads with face patterns. Other materials of which the ornaments were made included marine mollusk shells, ostrich eggshell, and a variety of stone and minerals. Of greatest interest were beads coming from early Roman graves, of an older man (the order of the threaded beads could be traced) and of animals (neck collars). Beads threaded on fragments of string, most probably of Indo-Pacific make, came from the early Roman rubbish dump.

**Keywords:** Berenike, Red Sea port, Red Sea trade, Indian Ocean trade, Ptolemaic, early Roman, late antiquity, Roman, Bes amulet, face beads

Glass beads have become increasingly useful in reconstructing trends in material culture as well as changing exchange network patterns. In recent years, the study of glass beads using a combination of observation and compositional analyses has expanded tremendously (e.g., Then-Obluska and Dussubieux 2016; Then-Obluska and Wagner 2017; Pion and Gratuze 2016). Compositional analysis of the glass of the Berenike beads is not possible at present, hence this paper provides an overview of almost 650 beads and pendants from two seasons of archaeological fieldwork in 2014 and 2015 at this harbor site on the Red Sea coast of Egypt based on macroscopic studies.

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All photos and arrangements in Figs 2 to 13 by Joanna Then-Obluska and the Berenike Project. The beads are presented in the figures arranged first by archaeological areas excavated in the 2014–2015 seasons:

Hellenistic trash dump (BE14-95) – Figs 2 and 3A–B

Early Roman burial area (BE15-104) – Fig. 4

Early Roman trash dump (BE14-96) – Fig. 5

Early Roman animal cemetery (BE15-107) – Fig. 6A–B

Early Roman harbor (BE14-98, BE14-100, BE14-101, BE14/15-102, BE15-108, BE15-109) – Fig. 7

Late harbor temenos (BE14/15-61, BE14-99, BE15-103) – Fig. 8

Great Temple of Berenike (BE15-111 and BE15-112) – Figs 9A–B and 10A–B

Western complex (BE15-105) – Fig. 11

Northern architectural complex (BE15-110) – Fig. 12A–B

Late trash dump – surface find (BE10-59) – Fig. 13

Within each area/trench, beads are presented in the order of their register numbers, which code the locus first and subsequently the order of excavation.

Scale is 5 mm throughout the presentation.

Table 1. Number of bead and pendant finds, whole and fragmentary, by season and trench

Trench	Season 2014 N=264	Season 2015 N=383
BE10/15-59		1
BE14/15-61	2	4
BE14-80	12	
BE14-95	109	
BE14-96	109	
BE14-97	2	
BE14-98	7	
BE14-99	6	
BE14-100	7	
BE14/15-102	10	2
BE15-103		19
BE15-104		88
BE15-105		1
BE15-107		38
BE15-108		1
BE15-109		19
BE15-110		55
BE15-111		93
BE15-112		62

Beads were found in the following areas [Fig. 1]: Hellenistic trash dump (BE14-95) and urban fortifications (BE14-97), early Roman burials (BE15-104), early Roman rubbish dump and animal cemetery (BE14-96, BE14-80, BE15-107), early Roman western complex (BE15-105), early Roman harbor (BE14-98 and BE15-109, BE14-100, BE14/15-102, BE15-108), late harbor temenos (BE14/15-61, BE14-99, BE15-103), the Great Temple (BE15-111, BE15-112), the late phase of the northern architectural complex (BE15-110), and the late trash dump (BE10/15-59) (Zych et al. 2016). *Table 1* gives an overview of bead quantities by trenches.

The following overview of Berenike beads and pendants is presented following a division into the main archaeological areas as indicated above, making use of the established site stratigraphy and current chronological attributions. The beads are described below in detail, and a vast majority has been illustrated in the plates.

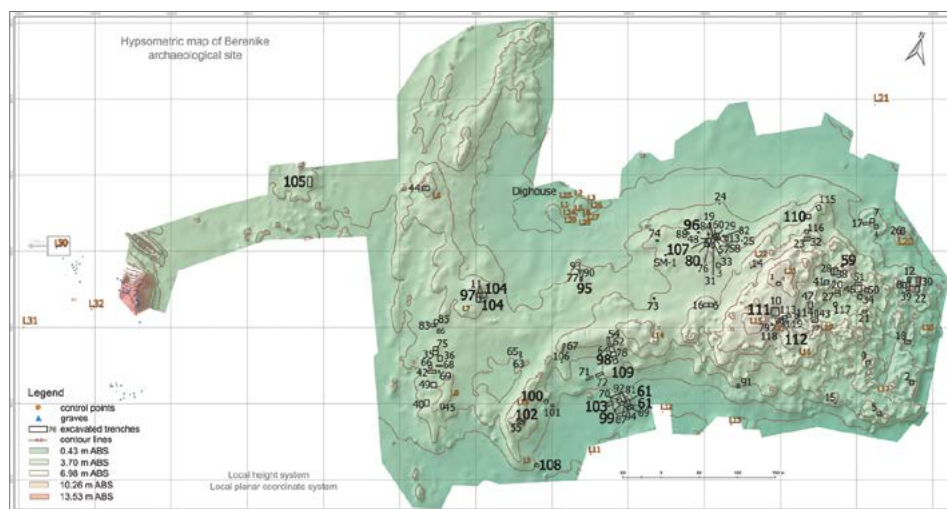


Fig. 1. Site of Berenike showing locations of archaeological areas and trenches. All trenches with bead finds from the 2014 and 2015 seasons in bold type (PCMA UW Berenike Project/map A. Szeszko)

## HELLENISTIC TRASH DUMP

The location of the Hellenistic trash dump identified in an earlier season (BE11-77) was explored further in a directly adjacent trench **BE14-95**. Pottery was found in abundance, as were all categories of finds expected from a domestic refuse dump. The ceramics, including a few stamped amphora handles, were dated to the 3rd–2nd century BC (R. Tomber, in Zych et al. 2016: 326).

The Hellenistic rubbish yielded some perforated mollusk shell beads. A hole

was cut in two *Cypraea annulus* sp. [Fig. 3b:32, 33] and in nine *Marginella* sp. [Fig. 3b:36–38]. The latter specimens have been found in Meroitic tomb 192 at Sedeinga, Nubia (Then-Obluska 2015a: Fig. 2:c4/b).<sup>1</sup> Additionally, in two *Conus textile neovicarius* sp. [Fig. 3b:34, 35], and in one *Malea* sp. [Fig. 3a:20], a hole was drilled through the place where the apex had been removed. A small ostrich-eggshell bead is unusual in its square disk shape [Fig. 3b:39]. Usually ostrich-eggshell beads

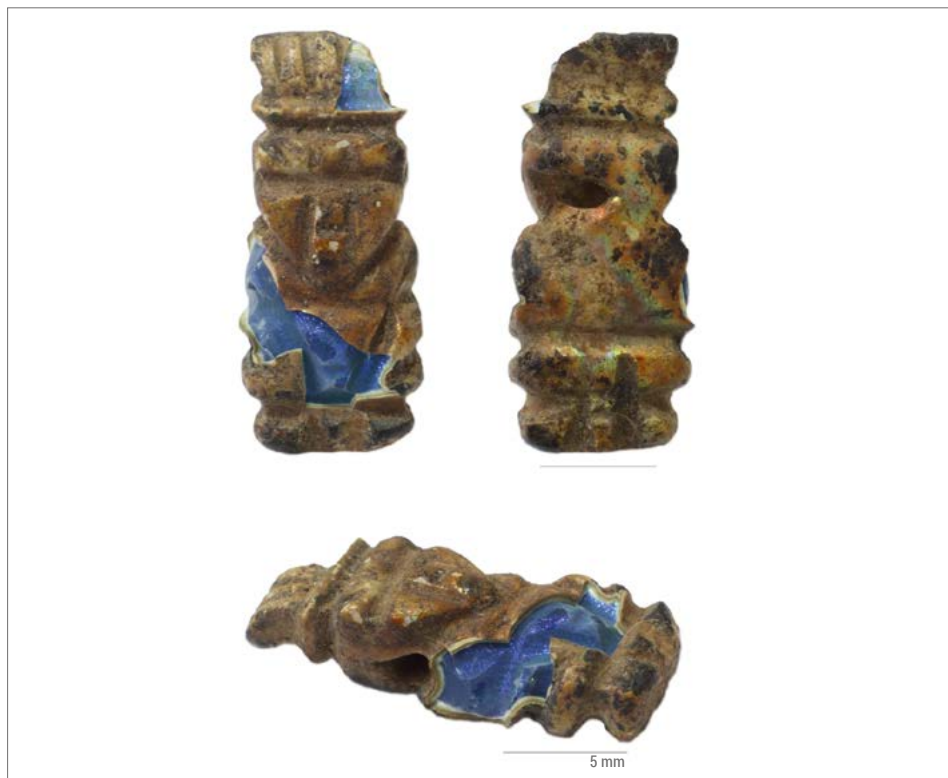


Fig. 2. Glass Bes pendant (BE14-95/999/034) from the Hellenistic trash dump

<sup>1</sup> In Berenike's late trash dump from the 4th–6th centuries AD, shells of *Marginella* sp. were perforated at the place where the apex was removed (Then-Obluska 2015b: Fig. 1.6; 2017a).



Fig. 3A. Beads from the Hellenistic trash dump (BE14-95)

1-17	BE14-95/001/PB 01	21-22	BE14-95/004/PB 08
18	BE14-95/002/PB 03	23-24	BE14-95/005/PB 07
19	BE14-95/999/PB 37	25-27	BE14-95/010/PB 13
20	BE14-95/004/PB 06	28-30	BE14-95/013/PB 16

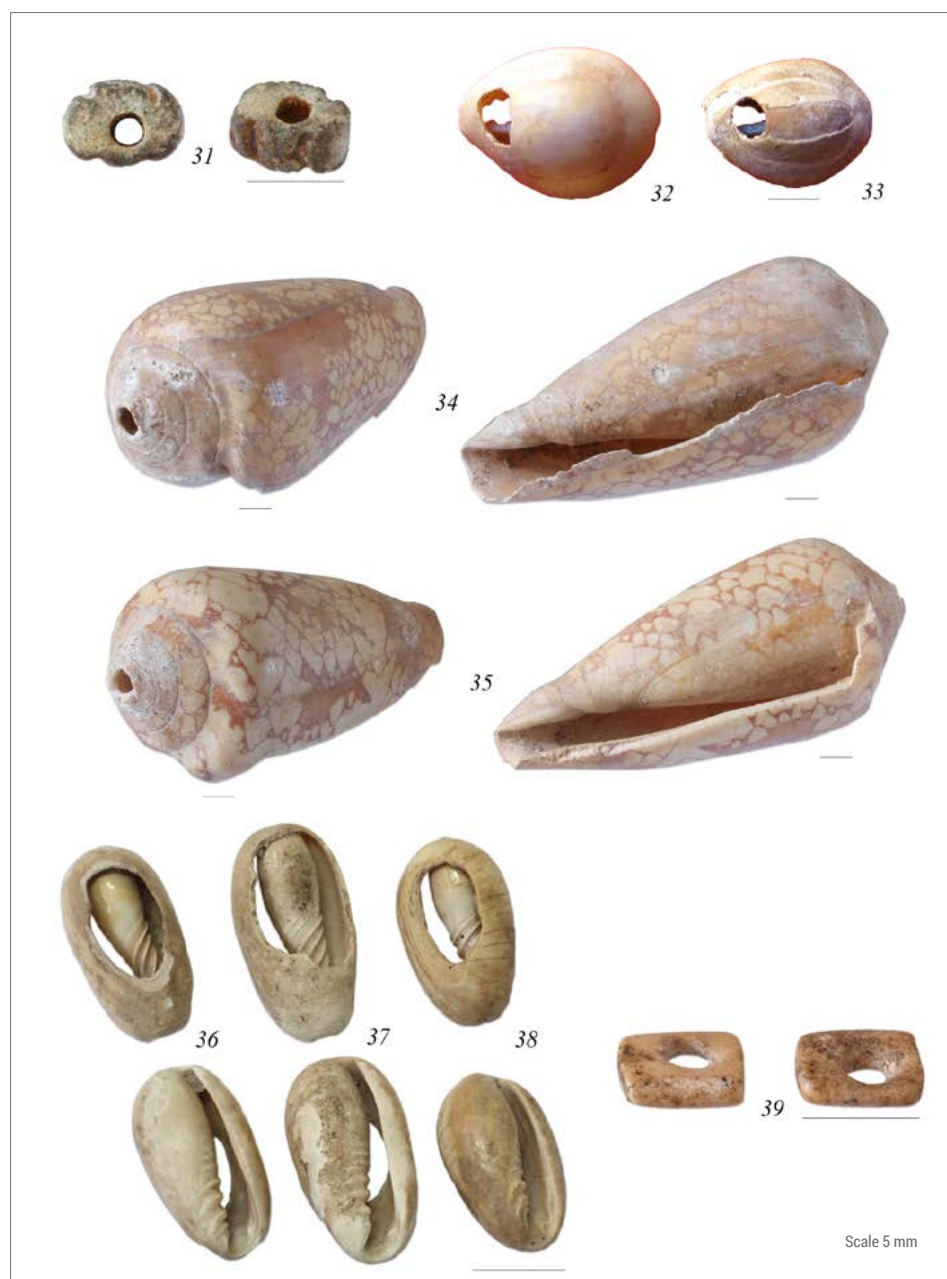


Fig. 3B. Beads from the Hellenistic trash dump (BE14-95 continued)

31–33	BE14-95/013/PB 16
34	BE14-95/015/PB 18
35	BE14-95/017/PB 22
36–39	BE14-95/019/PB 24



are found in late Roman/post-Meroitic contexts and are shaped into round disks (e.g., Then-Obluska 2015b; 2017a).

Roughly shaped tiny light red quartz and agate oblates are among the beads made of stone. Traces of saw marks can be observed across the larger hole opening, where the groove facilitated setting the drill [Fig. 3a:1–3, 23–27]. This is a technique that continues into the early Byzantine/post-Meroitic period in Egypt and Nubia (Then-Obluska 2015b) and these tiny stone types are already known from other Hellenistic contexts at Berenike (Then-Obluska 2015b; 2017a). Moreover, two bicones were drilled from both ends and their sides were polished [Fig. 3a:21, 22].

Faience beads dominated the bead assemblage in BE14-95. 78 short cylinders and rings are blue, green and red in color

[Fig. 3a:7–17, 28–30]. One of them was additionally shaped [see Fig. 3b:31].

Drawn-glass beads are dark blue or colorless [Fig. 3a:6, 18], and green (not illustrated). Opaque green oblates [Fig. 3a:4, 5] and a translucent purple bicone [Fig. 3a:19] are rod-formed beads.

A small pendant of blue glass was shaped into a Bes figure [Fig. 2]. The pendant is flat with details impressed on both sides. A lateral perforation runs through the neck. The feather crown is at the top. The sketchiness of the Berenike specimen differs from molded glass examples from Graeco-Roman Egypt (Arveiller-Dulong and Nenna 2011: 295, Cat. 474) and it has some local traits which look similar to bone and stone Bes amulets found in Nubia and dated to the Third Intermediate and Napatan Periods (Petacchi 2014; Then-Obluska 2016).

## HELLENISTIC URBAN FORTIFICATIONS

The Ptolemaic urban defenses encompass the rock-cut shaft water collection system that dates to the 3rd century BC and the gatehouses that formed part of the Hellenistic fortifications (trench BE14-97). In early Roman times, as indicated by the stratigraphy of the remains, these features were deserted (Zych et al. 2016).

The few beads picked up in trench BE14-97 are carnelian oblates with traces

of the use of a saw across the larger hole opening, a blue faience ring, and a triple-segment of colorless drawn glass (not illustrated).

A marine mollusk shell of *Malea* sp. (BE15-104/97/045/PB 71, not illustrated here) has its apex removed and a hole drilled through it (compare above for *Malea* sp. from Hellenistic trench BE14-95).

## EARLY ROMAN BURIALS

The ruins of the Hellenistic urban fortifications in trench BE15-104 offered a good location for early Roman burials (Zych et al. 2016: 325). While a green bead found in locus 2 is a modern specimen [Fig. 4:1], a long agate bead from locus 5 might be an early Roman specimen [Fig. 4:2].

The burials were made in the early 1st century AD, as indicated by the trench stratigraphy (Zych et al. 2016: 326). One of them, a burial of an older male, preserved traces of a long robe or shroud in which he had been buried, with several dozen beads which appeared to form two



Fig. 4. Beads from the early Roman burial area (BE15-104)

- |      |                                |
|------|--------------------------------|
| 1    | BE15-104/002/PB 03             |
| 2    | BE15-104/005/PB 07             |
| 3-32 | BE15-104/036/PB 63 (=Grave 38) |



long strings around his neck. An iron ring with a key was suspended on one of these strings. The beads were made of stone, glass and gold-in-glass. Among the stone beads, truncated bicones of amethyst [Fig. 4:3–6] and long barrels of onyx were both perforated from both ends [Fig. 4:24–28]. Red agates were shaped into globular beads [Fig. 4:7–9]. Smaller agates were irregularly shaped [Fig. 4:10–15]. Both agate types bore traces of sawing across the larger hole opening, where the notch facilitated setting the drill. The same feature can also be observed on red agate short bicones [Fig. 4:16–23]. These agate beads were perforated using the Egyptian or Nubian technique (compare above). Among the glass specimens, a mosaic glass cane section was folded into a banded bead [Fig. 4:29], and

a drawn bead was decorated with mosaic eyes [Fig. 4:30]. The color of many drawn and rod-formed glass beads cannot be estimated due to their erosion [Fig. 4:31]. Although heavily eroded, some beads can be identified as segments of metal-in-glass tubes thanks to their visible layered structure [Fig. 4:32]. Production of mosaic glass, drawn and segmented glass beads, including gold-in-glass ones, has been documented from Alexandria, Egypt (Kucharczyk 2011a; 2011b).

A general pattern in bead arrangement could be discerned. Large beads made of onyx were found alternating with many small ones. The composition of small beads consists of amethyst or agate bicones alternated with a few beads made of glass or gold-in-glass beads.

## EARLY ROMAN TRASH DUMP

The early Roman rubbish dump, trench **BE14-96**, yielded several dozens of beads and pendants of various materials. A Red Sea mollusk shell belongs to *Engina mendicaria* sp. (BE14-96/014/PB 22, not illustrated). In contrast to the late Roman specimen, which was perforated in the area of the removed apex (Then-Obluska 2015b: Fig. 1.5; 2017a), it has a hole in the whorl.

The faience beads, 29 in all, are tiny, blue and black short to standard cylinders [Fig. 5:9, 10, 14, 19] and larger black short bicones [Fig. 5:15–17]. Both shapes, in many colors, have been documented in early Roman contexts in the Berenike and Marsa Nakari assemblages (Then-Obluska 2015b; forthcoming). A Bes pendant fragment made of faience was green-glazed and decorated with yellow

spots [Fig. 5:18]. Green-glazed Bes pendants with yellow decoration are also well known early Roman amulets, although often reused in later contexts (Then-Obluska 2017b; 2017c: Fig. 10:6).

Moreover, the excavations of the early Roman rubbish dump have brought to light two outstanding finds in the form of threaded drawn-glass beads. These were red beads still on their string [Fig. 5:3], as well as yellow and dark purple to black beads on a string fragment [Fig. 5:1]. Based on the technique of production, drawn and rounded glass beads have been associated with South Asian/Indian workshops. Francis (2002) called all such beads ‘Indo-Pacific’ and argued that they were produced only at Indian and Sri Lankan sites. South Asian glass beads constitute about 50% of the late 4th–6th century AD



Fig. 5. Beads from the early Roman trash dump (BE14-96)

1	BE14-96/005/PB 07	14-17	BE14-96/010/PB 17
2-3	BE14-96/006/PB 08	18	BE14-96/013/PB 20
4-10	BE14-96/006/PB 10	19	BE14-96/999/PB 29
11-13	BE14-96/006/PB 11		

bead assemblages at Berenike and Marsa Nakari. While blue/green and orange colors make up the bulk of beads on Sri Lanka, dark blue, red, black, and violet colors dominate the Arikamedu bead assemblages (Francis 2002). A more specific provenance of the objects must remain uncertain as these beads have not been analyzed in the laboratory. In contrast to the late period (late 4th–6th centuries AD), when Indo-Pacific glass beads constituted a large share of the Berenike bead assemblage, only a dozen Indo-Pacific specimens have been recorded so far in the early Roman trenches (Francis 2002; Then-Obluska 2017a).

Some monochrome glass beads were made by segmenting drawn-glass tubes into single- or multiple-segments [Fig. 5:13, 12 respectively]. Compound drawn-glass beads are made of drawn and segmented tubes that consist of two glass layers: inner and outer. The inner layer is usually colorless. The outer layer can be monochrome, monochrome with applied longitudinal trails, or it can be striped. A tiny bead has a colorless core covered with a yellow layer [Fig. 5:11]. Another bead is made of a translucent greenish core covered with a white and blue striped layer [Fig. 5:6]. A large com-

pound bead has four yellow stripes on a black layer, which then covered an inner layer of colorless glass [Fig. 5:4]. In general, compound beads have already been recorded from early Roman contexts at Berenike and elsewhere (Then-Obluska 2015b; 2017a).

One bead was made of a folded mosaic yellow strip with a pattern of a green bay leaf branch [Fig. 5:5]. A similar pattern is known from other Roman sites (Arveiller-Dulong and Nenna 2011: 205, Cat. 277.17 yellow, with a green branch; Mandruzzato 2008: 158, Type 3; Alekseeva 1982: Fig. 48: 18, Type 417 dated to the 1st century AD; Berlev and Hodjash 1998: Pl. 175: XIV.151 Roman Period). A mosaic green band with a yellow branch was applied to a red ball bead, which was found in a 1st century AD tomb at Meroe (Dunham 1957: 133, Fig. 89. B8, Pl. LXVIIIB =MFA 24.770). Imported mosaic glass beads decorated with vegetal pattern were also found in Tomb 6 at Ona Enda Aboy Zewge, Bieta Giyorgis, Aksum (about 50 BC–AD 150) (<http://193.205.136.29/metarchive2/content/indagini-archeologiche-nellarea-di-aksum-ethiopia>). Another bead is made of a folded mosaic glass strip. The strip is white with blue strokes [Fig. 5:7].

## EARLY ROMAN ANIMAL CEMETERY

The animal cemetery, located in and around trench BE12-80, continued to be explored in the 2014 season (BE14-80) and was extended northward in 2015 (BE15-107) (Zych et al. 2016: 316ff.; Sidebotham and Zych 2012: 38 and Fig. 23). Most of the burials were felines of a fairly young age or they were mother cats with kit-

tens. Dogs, mostly young, had a fair representation as well. The burials of a baboon and a few vervet monkeys were also found, two with iron collars around their necks (Zych et al. 2016), one even furnished with gold-in-glass beads [Fig. 6a:4].

Trench BE14-80 also contained two Red Sea mollusk shells of *Marginella* sp.

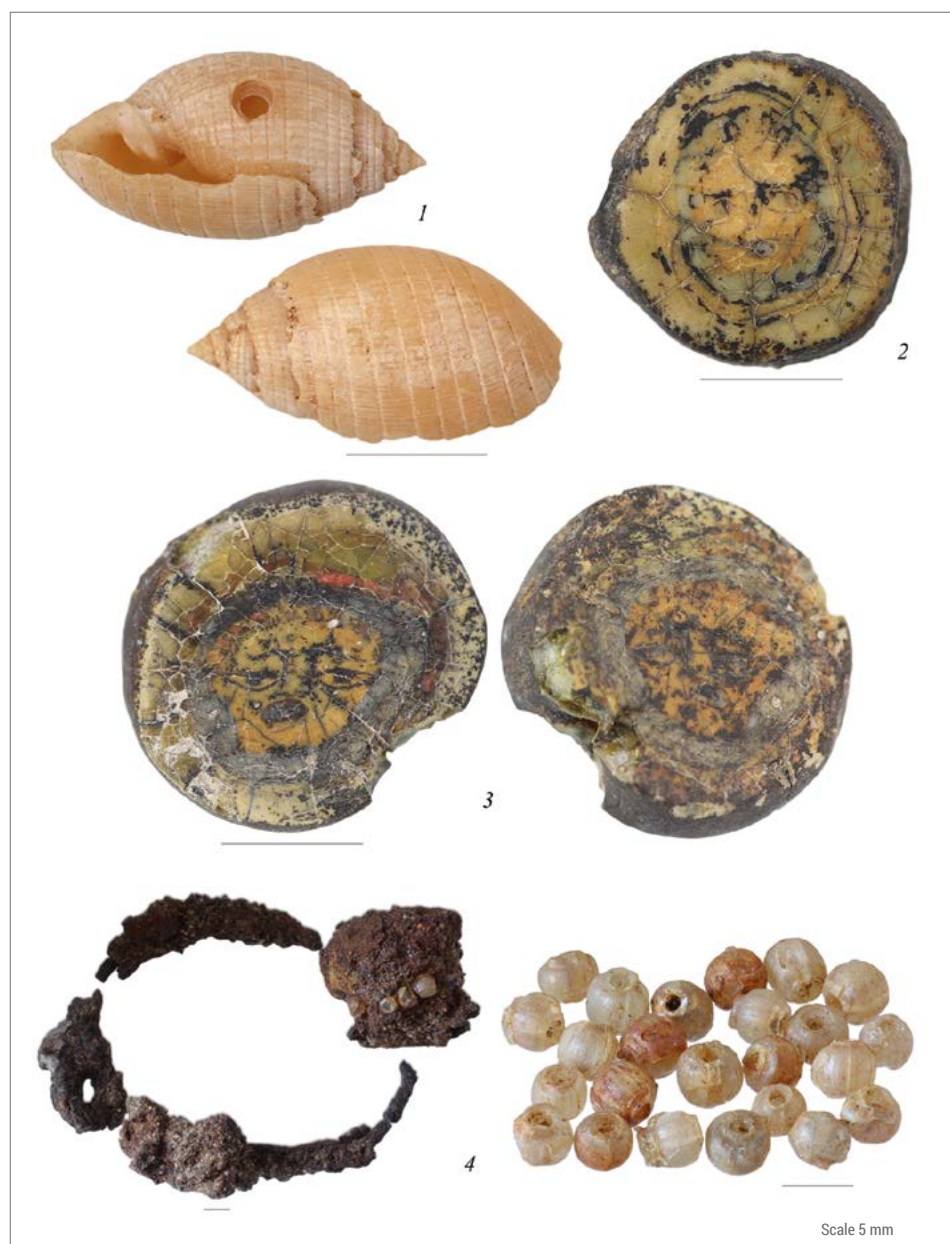


Fig. 6A. Beads from the early Roman animal cemetery (BE15-107)

1-3 BE15-107/001/PB 01  
4 BE15-107/003/PB 06





Fig. 6B. Beads from the early Roman animal cemetery (BE15-107 continued)

5-11

BE15-107/033/PB 48

with their whorl perforated (BE14-80/018/PB 01, not illustrated), one truncated conical bead made by perforating the apex of a *Conus* sp. (BE14-80/018/PB 03, not illustrated), one agate bead with traces of a saw across the hole opening (BE14-80/013/PB 02, not illustrated), and eight faience disk beads (BE14-80/013/PB 02, BE14-80/018/PB 05, BE14-80/023/PB 13, not illustrated).

Trench BE15-107 provided a perforated Red Sea mollusk shell of a *Pupa* sp. [Fig. 6a:1]. The hole on the last whorl of the spire was actually made by another gastropod, but it is not certain that the shell was used for beadwork.

Next to two monochrome drawn-glass beads [Fig. 6b:10, 11] there were also seven

beads made of rod-pierced mosaic glass cane sections with a face pattern [Figs 6a:2, 3, 6b:5–9]. They were found completely obscured by blackish grime and their coloring is indiscernible despite some cleaning. Two round tabular beads, such as these, were found nearby in the 2012 season (Then-Obluska 2015b: Fig. 5.40–41). Tabular face beads are known from early Roman sites in Europe, North-east Africa, the Levant, Arabia and Asia (Then-Obluska 2015b with references). According to Robert K. Liu (2014), the face belonged to Medusa, which could also be seen as representing either a woman or a Gorgon.

## EARLY ROMAN HARBOR

In the early Roman harbor area, inside the southwestern bay, work continued in the eastern (trenches BE14-98 and BE15-109) and southern (trenches BE14-100, BE14-101 (no bead finds), BE14/15-102 and BE15-108) parts of the bay.

A sectioned area in the northwestern corner of BE15-109 revealed large bivalve shells, very likely one of the pearl oysters of *Pinctada radiata*. The archaeological remains suggest that the shelters built on this side of the Berenike bay were perhaps used by merchants or ship agents (possibly of Indo-Pacific origin), rather than by simple sailors and harbor workers (Zych et al. 2016). Deep excavations in BE15-109 recorded no activity in this part of the harbor prior to the early Roman period (1st–2nd centuries AD). In addition, excavations in this trench, and in adjacent ones in previous seasons, recorded no activity in this part of the harbor after

the 2nd century AD (Zych et al. 2016).

Five drawn blue short bicones [Fig. 7:2–6] and a large double-segment made of gold-in-glass [Fig. 7:1] were found in trench BE14-98. An orange bead is a modern intrusion into this area [Fig. 7:7].

Among the beads from trench BE15-109 there is a piece made of a worked and pierced apex of *Conus* sp. [Fig. 7:17]. This type has already been recognized from other contexts at early Roman Berenike and Marsa Nakari (Then-Obluska 2015b: Fig. 1.1; forthcoming: Fig. 2.3). The organic material of one specimen has not been identified [Fig. 7:32]. Seven small short cylinder blue and red beads are made of faience [Fig. 7:14, 18, 24, 25, 29–31]. A few beads are made of drawn glass. Rounded ends can be observed on a yellow and a blue one [Fig. 7:15, 21], and a translucent dark green one is a single-segment bead [Fig. 7:33]. A larger example of a drawn





Fig. 7. Beads from the early Roman harbor (BE14-98, BE14-100, BE14-102, BE15-108, BE15-109)

1	BE14-98/002/PB 10	19-20	BE15-109/004/PB 35
2-5	BE14-98/004/PB 06	21	BE15-109/005/PB 32
6-7	BE14-98/014/PB 25	22	BE15-109/006/PB 73
8	BE14-100/001/PB 01	23	BE15-109/014/PB 50
9	BE14-100/015/PB 19	24	BE15-109/014/PB 78
10-12	BE14-102/015/PB 16	25	BE15-109/017/PB 37
13	BE15-108/999/PB 19	26-27	BE15-109/017/PB 55
14-15	BE15-109/001/PB 01	28	BE15-109/020/PB 67
16	BE15-109/002/PB 02	29	BE15-109/022/PB 83
17	BE15-109/004/PB 01	30-31	BE15-109/027/PB 87
18	BE15-109/004/PB 24	32	BE15-109/029/PB 05
		33	BE15-109/999/PB 71

opaque green bead was decorated with three (two preserved) mosaic eyes in black and yellow [Fig. 7:20]. Three beads, a blue, a cobalt blue, and a red one, also come from this locus [Fig. 7:19, 22, 27]. Among four drawn gold-in-glass beads is a large globular single-segment, a long tubular single-segment, and two beads with barely finished ends [Fig. 7:16, 23, 26, 28 respectively].

Some walls preserved in **BE14-100** (and **BE14-101**) were of unknown function, probably related to administrative buildings within the harbor. Beryls and pieces of what appeared to be peridot were also recorded from this area (Zych et al. 2016). In addition to a cowry shell with a cut hole (**BE14-100/015/PB 19**, not illustrated), two faience short-cylinder beads (**BE14-100/003/PB 04**, **BE14-100/009/PB 08**, not illustrated), two biconical whitish glass (**BE14-100/001/PB 02**, not illustrated) and a long pentagonal purple glass bead [Fig. 7:8] were found in the trench. One bead appears to be a modern intrusion [Fig. 7:9].

Trench **BE14/15-102** was located directly next to trench **BE09-55** and yielded two finely carved ring intaglios of the turn of the 1st century BC and 1st century AD, their dating based on stylistic features (Zych et al. 2016). Four faience ring beads, a small faience melon bead [Fig. 7:10], and an agate bead with traces of sawing were found in addition to two double-segments of gold-in-glass [Fig. 7:12]. A globular glass fragment might be a decorative element rather than a bead [Fig. 7:11].

Excavations in trench **BE15-108**, at the extreme southwestern portion of the southwestern harbor, documented many long iron nails and fixtures in a spot of heavy burning, which could have been a large wooden chest (I. Zych, personal communication). A hearth was located nearby, but there was no evidence of production of any kind. A single bead out of context in this area was made of drawn green glass [Fig. 7:13].

## LATE HARBOR TEMENOS

Clearing of the general area of the apparently semi-insular harbor temenos, located in the entrance to the southwestern bay, revealed an oil-lamp fragment confirming occupation in the 4th–6th century AD (trench **BE14/15-61**).

A small faience ring [Fig. 8:6] and a fragment of a large faience melon bead [Fig. 8:1] were found in loci 169 and 135, respectively. The latter type is usually dated to the early Roman period (Arveiller-Dulong and Nenna 2011; Lankton 2003: Pl. C2.583; Berlev and Hodjash 1998: Pls 195–197, 1st–2nd centuries AD; Then-Obluska

forthcoming: Fig. 2.15 Marsa Nakari), although alleged earlier specimens have been published (Arveiller-Dulong and Nenna 2011: Cat. 295, 4th–2nd centuries BC). Small carnelian beads of an irregular oblate shape and highly polished sides, as well as a white chalcedony short bicone bead featuring traces of sawing, are early Roman types [Fig. 8:2–4]. A short cylinder bead was made of a marine mollusk shell [Fig. 8:5]. A small blue-green bead was made of drawn glass [Fig. 8:7] and it is late Roman in date unlike the rest of the beads from this context.

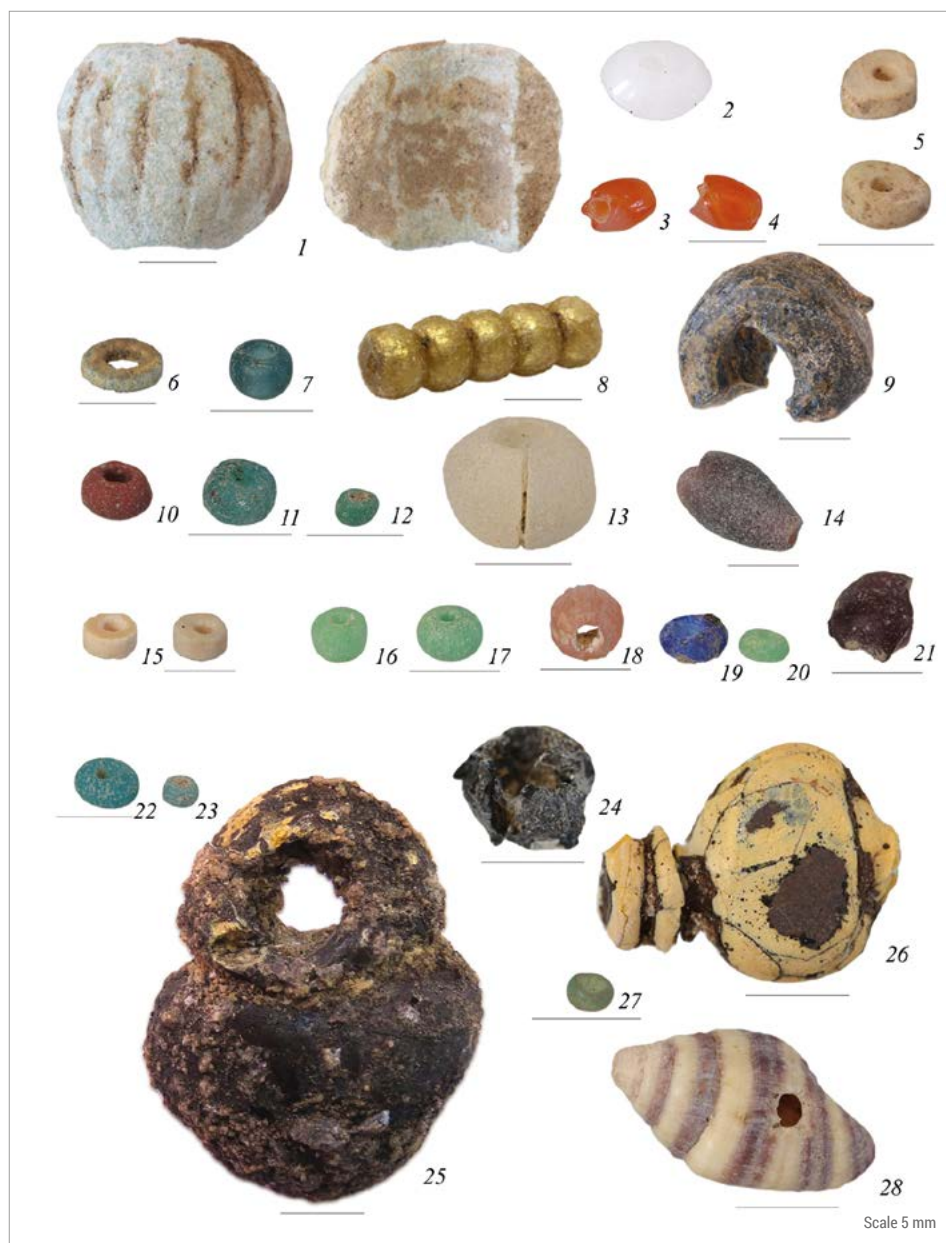


Fig. 8. Beads from the late Berenike harbor temenos (BE14/15-61, BE14-99, BE15-103)

1	BE14-61/135/PB 01	15	BE15-103/012/PB 10
2	BE14-61/139/PB 17	16-17	BE15-103/012/PB 14
3-4	BE15-61/168/PB 14	18	BE15-103/013/PB 11
5	BE15-61/168/PB 31	19-21	BE15-103/014/PB 12
6	BE15-61/169/PB 26	22-23	BE15-103/015/PB 15
7	BE15-61/169/PB 28	24	BE15-103/027/PB 27
8	BE14-99/004/PB 02	25	BE15-103/030/PB 43
9	BE14-99/012/PB 11	26	BE15-103/034/PB 38
10-11	BE15-103/001/PB 01	27	BE15-103/035/PB 39
12-14	BE15-103/002/PB 03	28	BE15-103/036/PB 40

The excavation in the Square Feature area concentrated at the front of the complex (trench **BE14-99**), where the collapsed blocks on either side of a central open space corresponding to a doorway were cleared. A few beads were picked up from trench **BE14-99**. These included two faience rings, two glass and one gold-in-glass bead. The quintuple-segment gold-in-glass bead [Fig. 8:8] is an early Roman type, accompanied by a fragment of a glass loop belonging to a large globular pendant [Fig. 8:9] (compare below).

Of particular interest was the find of 40 raw garnets in subsidiary buildings around this area in trench **BE15-103** (Zych et al. 2016). Otherwise the trench yielded types characteristic of late 4th–6th century assemblages: an ostrich-eggshell [Fig. 8:15], drawn and rounded green and blue glass beads [Fig. 8:12, 16, 17, 20, 22, 23], in

addition to drawn and segmented red, green, purple, and dark blue ones [Fig. 8:10, 11, 18, 19]. A large white bead was made of folded glass [Fig. 8:13].

A large pendant with a conical base and attached loop [Fig. 8:25] is a type already documented at Berenike (Then-Obluska 2015b: Fig. 5.1; 2017a: Fig. 14.19; 2017b: Fig. 1.23, 25–28, 31, 35, 36). A large gold-in-glass tabular bead with preserved double collar was found in locus 34 [Fig. 8:26]. Similar bead is illustrated from one of the Enda Semon excavation trench (ES) at Aksum (Morrison 1989: 173–174, Type XXII, Fig. 11-73), from the phase most probably dated to early 5th century at the earliest (Munro-Hay 1989: 127). A Red Sea mollusk shell *Engina mendicaria* has a hole cut in its last whorl and was found in locus 36 [Fig. 8:28].

## THE GREAT TEMPLE

Trenches **BE15-111** and **BE15-112** were placed in and at the eastern entrance to the Great Temple, the so-called Serapis Temple, now renamed the Berenike Isis temple on scholarly grounds. As can be observed in other Berenike trenches, the upper layers of trench **BE15-111** contained a mix of late and early Roman specimens.

A white globular bead, found in trench **BE15-111**, was made of a marine mollusk shell [Fig. 9a:1]. Such beads have already been recognized from late Roman assemblages at Red Sea and Eastern Desert sites (Then-Obluska 2017a: Fig. 13-3:12, 13 Berenike; 2017c: Fig. 7:20 Shenshef; forthcoming: Fig. 3.2 Marsa Nakari). Green, blue-green, blue, yellow, and black drawn and rounded glass beads are late

Roman types [Fig. 9a:17, 18, 33] (Then-Obluska 2015b; 2017a). The following glass beads have been noted: dark blue beads of drawn and segmented glass [Fig. 9a:2–4], rod-formed bicones [Fig. 9a:5, 6], globular beads made of opaque red wound glass [Fig. 9a:8] or translucent blue glass [Fig. 9b:85], and a “date” bead made of a rod-pierced green cone with a yellow upper portion, a cap [Fig. 9a:9].

Trench **BE15-111** is, however, dominated by early Roman specimens made of faience and gold-in-glass. Small white, red, black and blue-green rings (altogether 59) [Figs 9a:10, 14–16, 21–23, 26–28, 35–39; 9b:40–43, 46–56, 58–84, 90, 91] and a large melon bead were made of faience [Fig. 9a:11] (compare above).

A large collared bead with a tabular body and a double collar discerned at one end is made of gold-in-glass [Fig. 9a:7]. Other gold-in-glass beads are a small multiple-segment [Fig. 9b:89], large single-segments [Figs 9a:30; 9b:57, 88] and double-segments [Fig. 9b:86, 87]. An exceptional gold-in-glass type, a so-called granular bead, has a pattern of three rows of three bosses [Fig. 9a:29] and has been dated to the period between the 1st century BC to 1st century AD (Arveiller-Dulong and Nenna 2011: Cat. 196, 298.19) or the 2nd century AD (Spaer 2001: 137, Cat. 236a–b; Alekseeva 1978: Type 20, Pl. 26:59–61). These beads could have been of Persian, East Mediterranean or Black Sea littoral production (Spaer 2001: 137; Arveiller-Dulong and Nenna 2011: 151, 218).

The upper layers of trench BE15-112 (loculi 1 and 7) yielded many drawn-glass beads. The dark blue and some yellow ones are made of drawn and segmented glass [Fig. 10a:8, 16–23, 30, 31, 35]. Green, blue, blue-green, yellow and black beads are made of drawn and rounded glass [Fig. 10a:10–15, 32, 33, 46]. Both types and all colors have been confirmed from late, 4th to 6th century AD contexts (compare above). They were, however, found mixed with eroded faience ring beads of Ptolemaic/early Roman origin [Figs 10a:1–6, 28, 29, 40–45; 10b:47, 50–53, 57].

Additionally, beads made of folded glass were found: a green and yellow “date” bead and a green bicone [Fig. 10a:24, 25], as well as tiny dark blue and green cornerless cuboids [Fig. 10a:9, 36] also belong to late Roman types.

Late Roman types encompass a perforated oblate bead cut from a marine

mollusk shell [Fig. 10a:26] and a Red Sea *Conus taeniatus* sp. shell with its apex ground down [Fig. 10b:49]. Similar specimens are recorded from late assemblages at Berenike (Then-Obluska 2015b: Fig. 1.13; 2017a). A truncated hexagonal bicone is made of carnelian [Fig. 10a:27].

A small black faience ring [Fig. 10b:57], a small biconical gold-in-glass bead [Fig. 10b:60], and a fragment of a large collared bead with a tabular body [Fig. 10b:59] were found together with a long hexagonal cylinder of green glass [Fig. 10b:54]. The latter is a type usually found in early Roman contexts (e.g., Then-Obluska and Dusubieux 2016).

A fragment of a blue faience bead with dotted-circle decoration of an impressed eye was picked up out of context [Fig. 10b:62]. A similar bead fragment was found at Marsa Nakari (Then-Obluska forthcoming: Fig. 2.16), and such beads have been observed at Ptolemaic and early Roman Egyptian sites (Brunton 1930: 27, Pls xlv–xlvi, 177, Ptolemaic or a little later – Qau; Brunton 1937: 140, Tomb 1102 – Mostagedda; Xia 2014: Type PD 53), in Meroitic graves (Griffith 1924: 115–125, 141–180, Pl. LXIII:10, 13, tombs 394 and 829, 1st century BC–1st century AD; Williams 1991: 115, Fig. 471 =Oriental Institute Museum, OIM E20523) and Blemmyan graves (OIM E20523), and the Nubian royal tombs of post-Meroitic period (Emery and Kirwan 1938: Pl. 48A [Cat. No. 163], Pl. 46D [Cat. No. 157], bead corpus No. 32 on Pls 43–44), and Blemmyan graves (OIM E42033, personal observation; it could be a reused Meroitic item).





Fig. 9A. Beads from the Great Temple of Berenike (BE15-111)

1-9	BE15-111/001/PB 01	17-25	BE15-111/004/PB 05
10-11	BE15-111/002/PB 02	26-34	BE15-111/005/PB 06
12-13	BE15-111/002/PB 03	35-39	BE15-111/005/PB 07
14-16	BE15-111/003/PB 04		





Fig. 9b. Beads from the Great Temple of Berenike (BE15-111 continued)

40-45	BE15-111/008/PB 11	85	BE15-111/011/PB 18
46-52	BE15-111/008/PB 13	86	BE15-111/014/PB 20
53-56	BE15-111/009/PB 08	87	BE15-111/015/PB 39
57-83	BE15-111/011/PB 14	88-89	BE15-111/999/PB 30
84	BE15-111/011/PB 15	90-91	BE15-111/999/PB 12



Fig. 10A. Beads from the Great Temple of Berenike (BE15-112)

1–25	BE15-112/001/PB 01	40–41	BE15-112/007/PB 09
26–38	BE15-112/001/PB 02	42–46	BE15-112/007/PB 06
39	BE15-112/005/PB 04		



Fig. 10B. Beads from the Great Temple of Berenike (BE15-112 continued)

47-48	BE15-112/008/PB 07	60	BE15-112/010/PB 27
49	BE15-112/009/PB 19	61	BE15-112/014/PB 22
50-59	BE15-112/010/PB 14	62	BE15-112/999/PB 11

## WESTERN COMPLEX

Excavation of the foundations of a long, narrow building with three internal rectilinear shaped podia (trench **BE15-105** and extensions) at the northwestern edge of the site revealed nothing of its function, since it had been cleared almost completely of any finds by heavy surface

erosion. The paltry few finds from the foundations did indicate, however, that its latest use was in the Augustan age (Sidebotham 2016). A perforated shell of a Red Sea bivalve mollusk was picked up in locus 31 [Fig. 11].

## NORTHERN ARCHITECTURAL COMPLEX

Excavation of trench **BE15-110** was aimed at testing a large northern architectural complex at the northeastern edge of the town. The results clearly indicated architectural and urban planning continuity between the late period remains on top and the early Roman (and possibly Ptolemaic) houses found underneath. The later 5th and 6th century layers were examined inside a chamber with a niche found in part of this complex (Zych et al. 2016).

Green and yellow drawn and rounded glass beads were found in loci 1 and 2 [Fig. 12a:2, 3, 8]. Green Indo-Pacific beads are usually found at late Roman coastal and desert sites, as well as at post-Meroitic

Nubian Nile Valley sites (Then-Obluska 2015a; 2017c; Then-Obluska and Wagner 2016). The mosaic glass of one green and yellow striped bead with red center [Fig. 12a:1], as well as a green fragment of what probably was a “date” bead [Fig. 12a:4], are documented from other late Roman/post-Meroitic assemblages (Then-Obluska 2017b: Fig. 1:44 and references for the striped one).

Other glass beads are early Roman in date. These are drawn beads, both large [Fig. 12a:11] and small, the latter including monochrome blue examples [Figs 12a:17; 12b:31], single- and multiple-segments of gold-in-glass [Figs 12a:5, 13; 12b:23], as well



Fig. 11. Bead from the early Roman western complex (BE15-105)

BE15-105/031/PB 47

as one of folded blue and white mosaic glass [Fig. 12b:29]. Additionally, a fragment of a dark blue wound bead was found [Fig. 12a:19] and a rod-formed yellow one [Fig. 12b:30].

Surprisingly, a bead made of ostrich eggshell was found in locus 14 [Fig. 12b:36]. Ostrich-eggshell beads are usually found in late Roman and later contexts at the Red Sea coastal and Eastern Desert sites, and at post-Meroitic Nubian Nile Valley ones. Further along, some similar beads appear at Meroitic sites (e.g., Then-Obluska 2016).

One fragment of a tusk shell, *Dentalium* sp., and two with nine ribs, *Dentalium reevei*, have been found in loci 3, 5 and 8 [e.g., Figs 12A:18, 12B:24, 32]. There has been confusion about whether the fragments found at the Red Sea coastal and the Eastern Desert sites were intended to be threaded (Then-Obluska forthcoming: Fig. 2.1 Marsa Nakari; Berenike BE95-001-080#147, personal observation; Then-Obluska 2017c: Fig. 6:11 Shenshef; Hamilton-Dyer 2007: 348–349, Fig. 14.8.51 [*Dentalium reevei*], 14.8.52 [*Dentalium* sp.] Mons Porphyrites; 2001: 363, Fig. 11.5: 96 Mons Claudianus). Fortuitously, a speci-

men from trench BE15-110 has been found with a string fragment and provides evidence that *Dentalium* was actually used in early Roman beadwork. Fragments of similar shell species were also commonly recorded in graves at el-Dur (Haerinck 2001: Pls 47.67–68, 140.217, 146.20, 156.3, 160.6, 245.9, 247.5, 265.9, 274.8, 305.8). That site, situated on the west coast of the Oman peninsula, declined in the first half of the 2nd century AD.

A fragment of a once large sheet pendant was made of mica, i.e., gypsum selenite [Fig. 12a:16]. A long tabular chalcedony bead was shaped into a cabochon style and drilled from both ends [Fig. 12B:44].

Short cylinder faience beads and their fragments, 32 in all, are very eroded, their cores often exposed [Figs 12a:9, 10, 12, 14, 15, 20; 12b:21, 22, 25–28, 33–35, 37–43, 45]. Traces of glaze preserved are blue, green, white, red, and black in color. As it has been said elsewhere, these small ring and short cylinder faience beads characterize Ptolemaic and early Roman assemblages (e.g., Then-Obluska 2015b). Faience ceased to be produced in Egypt in the 3rd century AD.

## LATE TRASH DUMP

Past excavation at trench BE10-59 had provided about 1400 beads and pendants (Then-Obluska 2015b; 2017a). One bead picked up as a surface find next to the said trench in 2015 is made of black glass wound around a mandrel and decorated

with a blue trail [Fig. 13]. Trail-decorated large black beads are well known in late Roman bead assemblages (e.g., Arveiller-Dulong and Nenna 2011; Then-Obluska 2017c: Fig. 1:3).





Fig. 12A. Beads from the late phase of the Northern architectural complex (BE15-110)

1-4 BE15-110/001/PB 01  
 5-8 BE15-110/002/PB 05  
 9 BE15-110/002/PB 07  
 10-11 BE15-110/002/PB 09

12 BE15-110/002/PB 10  
 13-16 BE15-110/003/PB 48  
 17-18 BE15-110/003/PB 60  
 19 BE15-110/004/PB 11  
 20 BE15-110/004/PB 12



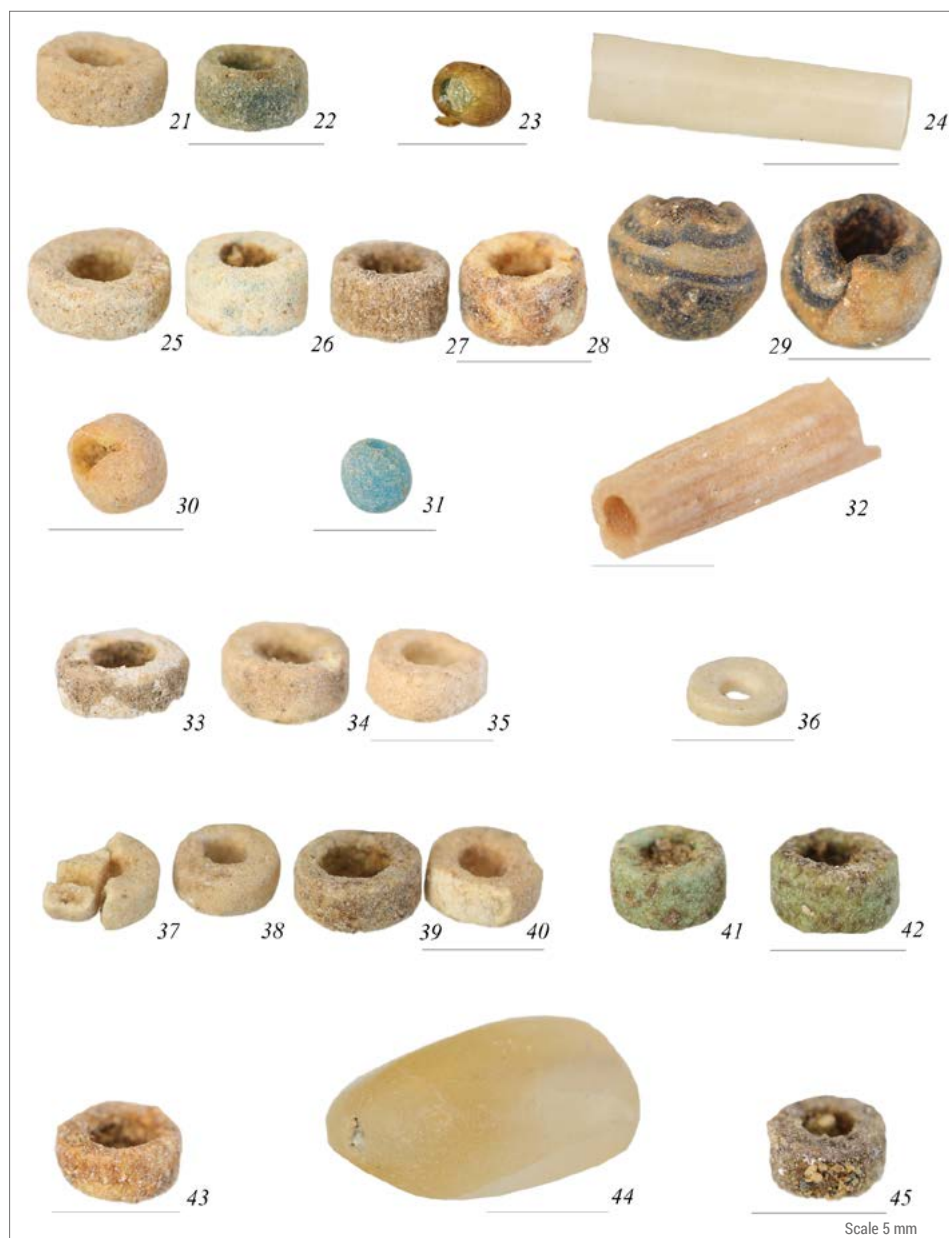


Fig. 12B. Beads from the late phase of the Northern architectural complex (BE15-110 continued)

21–22 BE15-110/005/PB 14  
 23–29 BE15-110/005/PB 17  
 30 BE15-110/005/PB 19  
 31 BE15-110/006/PB 29  
 32 BE15-110/008/PB 61

33–35 BE15-110/014/PB 20  
 36–40 BE15-110/014/PB 21  
 41–42 BE15-110/014/PB 31  
 43 BE15-110/014/PB 32  
 44 BE15-110/015/PB 22  
 45 BE15-110/015/PB 24

## SUMMARY

During the 2014 and 2015 excavation seasons at Berenike almost 650 beads and pendants were recorded. They come from Hellenistic and early Roman trenches, as well as from layers dated to later occupational phases at Berenike in the late 4th through early 6th centuries AD. As mentioned above, the late Berenike types, however, were mixed with early Roman specimens. Beads and pendants were made of organic materials (marine mollusk shells, ostrich eggshell), stones (agate, carnelian, quartz, amethyst, onyx), faience, glass and gold-in-glass.

A diversity of mollusk shells has been recorded in Hellenistic layers. Among the perforated gastropod mollusk shells are large species, like *Malea* sp. and *Conus textile neovicarius* sp. They were perforated in the area of the removed apex. Cowries of *Cypraea annulus* sp. and shells of *Marginella* sp. have holes cut into the shell body. A small square bead was cut from ostrich eggshell. Beads made of red quartz and agate feature sawing traces across the larger hole opening at the truncated bead

end, pointing to the Egyptian and Nubian beadmaking tradition. Small ring and short cylinder faience beads in diverse colors dominated Hellenistic bead assemblages. Glass beads were made of monochrome glass, using drawing and winding glass as manufacturing techniques. The glass Bes amulet found associated with a Hellenistic trench is one of the most outstanding finds of the 2014–2015 seasons at Berenike.

During the early Roman period, the whorls of *Marginella* sp. continued to be perforated. Additionally, a *Conus* sp. apex was perforated. A few *Dentallium* sp. specimens, including one on a string, were also found in early Roman layers. Small faience beads also continued to be used in Berenike beadwork. Additionally, biconical, melon, and “eye” bead types, as well as a Bes amulet, were made of faience and belong to the early Roman repertoire. Traces of a sawmark that facilitated bead drilling can be discerned in stone beadmaking. A few beads, onyx and amethyst ones found in grave 36, lack



Fig. 13. Bead from the late Berenike trash dump (BE10/15-59 surface)

this feature and these beads could be imports from India. Also, monochrome, yellow, black and red glass beads made of drawn and rounded glass, and found on their original string fragments, can be Indian imports. Next to monochrome and compound drawn and segmented beads, objects made of gold-in-glass, including a granular type, appeared. Small gold-in-glass beads were found with the iron collar of a vervet monkey from the animal cemetery. Moreover, beads made of folded mosaic glass and rod-pierced ones, including specimens with face patterns, as well as mosaic eyes applied to drawn beads have been recorded. In general, production of mosaic glass, as well as drawn and segmented glass beads, including gold-in-glass ones, has been confirmed for early Roman contexts from Alexandria, Egypt.

The late Berenike bead assemblages are characterized by oblate beads made of marine mollusk shells, a Red Sea *Conus taeniatus* sp. shell with its apex ground down, and a perforated shell of bivalve marine mollusk. The red-centered green and yellow mosaic bead is a characteristic late Roman type. The same can be said of some beads made of drawn and segmented glass of Egyptian origin, and drawn and rounded glass of Indian origin. The latter are blue, blue-green, green, yellow, and black beads.

A few monochrome beads found in Berenike during the 2014 and 2015 seasons are modern intrusions, exemplifying the continued penchant for beadwork among the 'Ababda Bedouin inhabiting the region.

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