

Jar and amphora stoppers and plugs from Berenike



Abstract: Amphorae and jar stoppers found during the 2010–2014 seasons of the Polish–American excavations at Berenike in the Red Sea are found mainly in the early Roman trash dumps, although single finds come from all over the ancient city. Altogether 54 stoppers were studied. More than 60% were preserved fragmentarily, some were stamped and colored. As a category they are typical of the Eastern Desert. Numerous finds come from Myos Hormos and Mons Claudianus, single finds from Mons Porphyrites and Sikait. They reflect Egyptian wine production during the Roman period and in late antiquity. They consist of plug and sealing mixture, made from various materials like plaster and mud, ceramic elements (bowls, lids, roudcuts(?), sherds), natural cork, wood or textile.

Keywords: Berenike Troglodytika, Red Sea, amphora stoppers, stoppers stamps, Roman economy.

Cork, plug, bung, stopper and sealing—these are all terms commonly and frequently used to describe something that would be inserted into the neck of a vessel and sometimes spread with a layer of sealing substance on top of it. However, they do not cover the whole picture. In some regions of the Mediterranean, like the Adriatic basin, the only accepted form was a ceramic plug in the form of a lid or disk, covered with a thin layer of sealant (Bajtler 2015).

For the sake of convenience, the term “stopper” will be used in this report to refer to all the different materi-

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als and elements used to hermetically seal an amphora when speaking of the whole artifact, namely: the plug inserted into the vessel mouth and the layer of sealant-like substance on top of it. However, it will also be used to describe the outer sealing layer, e.g. “plaster stopper”, “un-fired clay/mud stopper”, leaving “plug” or “bung” for the other elements the main function of which was not so much to seal the vessel hermetically, but to protect the

contents from being contaminated with the sealing substance. Almost anything could have acted as a plug in the Berenike assemblage: ceramic sherds nicely cut to a circular shape (referred to in archaeological reports as “roundcuts”), small pottery vessels (bowls, lids), textiles, cork and wood.

For an artifact to be considered as a stopper it had to have at least traces of the sealing substance: plaster or resin.

STOPPERS FROM BERENIKE

American–Polish excavations at Berenike on the Red Sea coast of Egypt (for the location of the site see *Fig. 1*), which have been taking place ever since 2008, are a direct continuation of the American–Dutch research conducted between 1994–2001. Almost every excavation season has yielded numerous amphora and jar stoppers, as well as plugs and corks used in many different vessels. The present report concentrates on the finds from five seasons (2010–2014).

Stoppers as a category are closely linked to the Roman economy, the making and trading of Egyptian wine in particular. Many different forms and materials are featured, occasionally the artifacts are stamped or inscribed, in ink or red paint. Fragmentary stoppers are the rule in the archaeological record, the broken parts of a sealing device having been dumped after uncorking a given container to consume the goods inside it.

The Berenike finds of stoppers have been reported on and studied successively since the beginning of the excavations: reports from seasons 1995 (Sundelin 1996), 1996 (Dieleman 1998), 1997

(Cashman, Bos, and Pintozzi 1999), 1998 (Bos and Helms 2000), 1999 (Bos 2007), 2000 (Mulder 2007), 2001 (Gates-Foster forthcoming) and 2009 (Zych 2011). The rule in these reports are comprehensive catalogs of the finds, materials and sealing techniques. A simple typology has also been developed for the materials used in the Berenike stoppers (Bos and Helms 2000: 277).

Stoppers similar to the ones found in Berenike have been discovered all over the Hellenistic and Roman Eastern Desert. The largest number was excavated at the sister port of Myos Hormos (Thomas 2011) and the Mons Claudianus quarry (Thomas and Tomber 2006). Single finds come from Mons Poryphyrites (Bailey 2007) and Sikait (Thomas 2011). They also appear outside of the Red Sea zone in Fayum, Koptos, Aqaba and the Fourth cataract (Thomas 2011). Thomas also offered a typology of stoppers from the Eastern Desert (cited as Eastern Desert types in the catalog) based on their form, materials used and other elements (Thomas 2011: 14–21; Thomas and Tomber 2006: 240–246). Another typology exists

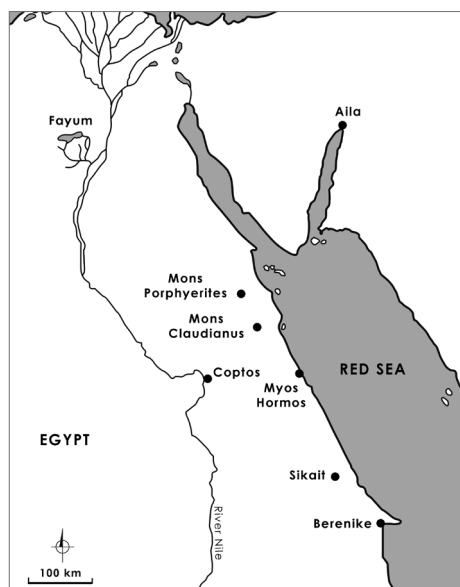


Fig. 1. Sites on the Red Sea coast and in the Eastern Desert mentioned in the text (Editing M. Bajtler)

for the clay stoppers discovered in the Hellenistic–Roman village of Bakchias in the Fayum (Davoli 2006: 137–143).

One of the most comprehensive studies of sealed amphora stoppers and the Greco-Roman trade in ancient Egypt, based on archaeological, but also papyrological and inscriptional sources, is the article by Evelien Denecker and Katelijn Vandorpe (2007).

ASSEMBLAGE AND FINDSPOTS

Of the 53 stoppers excavated during the studied period just over 64% were fragmentarily preserved, that is, recognizable elements of the plug and sealing substance, sometimes with a part of a stamp or inscription.

Finds are spread out all over the site, the quantity a factor of the number of

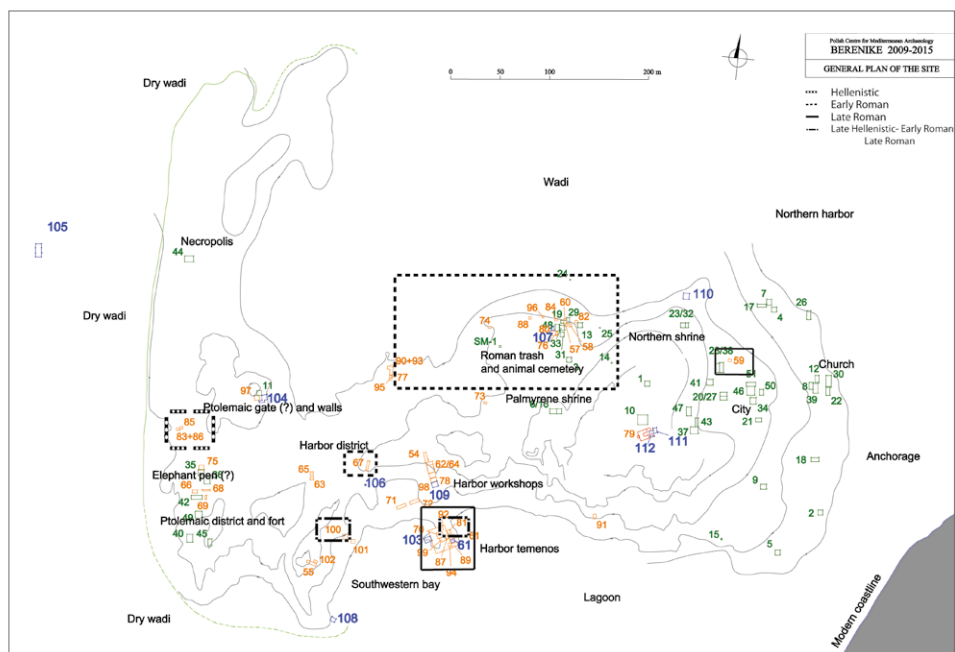


Fig. 2. The site of Berenike with the location of trenches mentioned in this report (Berenike Project, PCMA UW | editing J. Rądkowska)

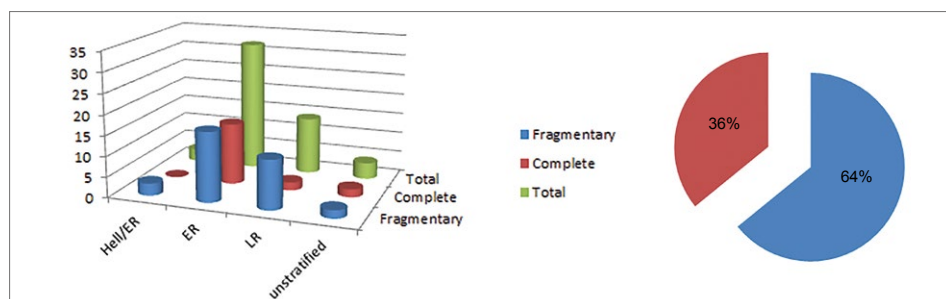


Fig. 3. Percentage share of fragmentary and near complete stoppers from the 2010-2014 seasons (right), broken down by chronological attribution (left), based on data from Table 1

Table 1. Stopper finds per trench with chronological context identification

Context		Fragments Cat. Nos	Nearly complete Cat. Nos		Total	Fig.
BE10-33/48	Early Roman dump	1	1	Cat. 1	2	Fig. 4
BE10-59	Late dump	10	2	Cat. 15 Cat. 16 Cat. 17	12	Fig. 8 Fig. 8
BE10-60	Early Roman dump	1	2	Cat. 2 Cat. 3	3	Fig. 4
BE13-61	Late period cult area	2	Cat. 18 Cat. 19	–	2	
BE10-67	Early Roman bay area	1	–		1	
BE11-73	Early Roman dump	1	–		1	
BE11-74	Early Roman dump	1	–		1	
BE11-76	Early Roman dump	6	2	Cat. 4 Cat. 5 Cat. 6	8	Fig. 5
BE11-77	Late Hellenistic–Early Roman dump	1	–		1	
BE12/13-81	Early Roman/ Late period cult area	1	Cat. 20	–	1	
BE12-84	Early Roman dump	2	2	Cat. 7 Cat. 8	4	Fig. 6
BE12-85	Hellenistic (fort)	1	–		1	
BE12-88	Early Roman dump	2	2	Cat. 9 Cat. 10	4	Fig. 6
BE14-96	Early Roman dump	1	6	Cat. 11 Cat. 12 Cat. 13 Cat. 14	7	Fig. 6 Fig. 7 Fig. 7 Fig. 7
BE14-100	Late Hellenistic–Early Roman domestic context	1	Cat. 21	–	1	Fig. 9
	Surface finds	2	2	Cat. 22 Cat. 23 Cat. 24 Cat. 25	4	Fig. 9
Total		34	19		53	

trenches excavated in a given area of the site. Roughly two-thirds of this particular assemblage dates to the early Roman period, originating from trench contexts dated from the late Hellenistic to the mid-3rd century CE [*Table 1; Fig. 3*]. Of these 31 stoppers came from the area of the early Roman rubbish dump north of the early Roman southwestern embayment/harbor and west of the town (trenches BE10-33/48, BE10-60, BE11-74, BE11-76, BE11-77, BE12-84, BE12-88, BE14-96) from 1st to 2nd century CE contexts (for the location of trenches see *Fig. 2*). The surface finds (four specimens) come for the

most part from the area of this rubbish dump. The one stopper that came from a sure Hellenistic context is not very well preserved

Stoppers from the late phase of the Berenike site, from the late 4th through mid-6th centuries CE, came from a rubbish dump trench (BE10-59; 12 specimens) and a late cultic location in the southwestern embayment (BE10-61; 2 specimens).

CATALOG

The catalog presents the complete specimens and a few of the fragmentary ones which preserved some distinctive elements.

1	[Fig. 4]	Mud stopper with textile BE10-33/48/001/012	Context: BE10-33/48 Loc.001 PB005
Early Roman		Mud/clay, textile Color: 2.5Y 4/3 (olive brown)	
Dia. 51 mm Th. 21 mm		Stopper flat on one side and convex on the other. A mud mixture was covered with a textile: two layers or an imprint of a textile detectable on the top, a thick layer of clay on the bottom.	
Broken into three fragments			
2	[Fig. 4]	Plaster stopper with ceramic plug BE10-60/001/045	Context: BE10-60 Loc.001 PB003
1st–2nd cent. CE		Plaster, clay Color: plaster 10YR 4/4 (dark yellowish brown). Plaster tempered with very fine sand.	
Dia. 90 mm Th. 24 mm		Two-element stopper: ceramic plug (small lid) and plaster seal. The lid blocked the amphora neck with the handle up, slightly below the rim. A layer of plaster was added on top of the ceramic plug and amphora rim.	
Complete. Very good condition		The stopper was found with a fragment of the broken amphora rim.	
		Eastern Desert Type 3B (Thomas 2011: 14–21)	

3	[Fig. 4]	Textile plug BE10-60/001/044	Context: BE10-60 Loc.001 PB002
1st–2nd cent. CE		Textile, cords Color: 10YR 5/3 (brown)	
Dia. 96 mm Th. 50 mm		Stopper flat on one side and convex on the other, presumably covered with a layer of plaster. A scrap of textile and single cords rolled-up together, with plaster and organic material traces detectable on the surface.	
Complete. Very good condition			
Eastern Desert Type 6(?) (Thomas 2011: 14–21)			



Fig. 4. Stoppers: Cat. 1 – mud stopper with textile (top side); Cat. 2 – plaster stopper with ceramic plug (top side on left, underside on right); Cat. 3 – textile plug (top side) (Berenike Project | photos J. Czuszkiewicz; digitizing M. Bajtler)

4	[Fig. 5]	Cork plug with resin BE11-76/003/025	Context: BE11-76 Loc.003 PB012
1st–2nd cent. CE		Natural cork, resin, organic material Color: 10YR 5/6 (yellowish brown)	
92 mm x 68 mm; cork Th. 19 mm; entire Th. 29 mm		Composite stopper: natural cork plug covered with resin. A thick layer of organic material (straw, grass?) and some plaster residue adhering to the resin on one side. Found together with (but not stuck to) a fragment of amphora rim with evident traces of resin on it.	
About one-third preserved.			
		Eastern Desert Type 6 (Thomas 2011: 14–21)	
5	[Fig. 5]	Plaster stopper with ceramic plug BE11-76/999/028	Context: (unstratified) BE11-76 Loc. 999 PB026
1st–2nd cent. CE		Clay, plaster Color: plug 2.5YR 5/6 (red); plaster 2.5Y 8/2 (pale yellow)	
Dia. 72 mm Th. 36 mm		Composite stopper. Wheel-made ceramic lid used as a plug, apparently Egyptian fabric (Nile silt, dark red in color). Characteristic flange on the underside. Big handle, circular in section, flat on top. Plaster on the inner side of the lid indicates that it was blocked with handle downwards.	
Complete.			
		Eastern Desert Type 3C (Thomas 2011: 14–21)	
6	[Fig. 5]	Stamped plaster stopper BE11-76/006/015	Context: BE11-76 Loc.006 PB014
1st–2nd cent. CE		Plaster Color: 10YR 5/3 (brown)	
Nearly complete, broken into four fragments		Plaster was stamped and painted red. Image of an uraeus and an inscription in Greek (probably a name) are visible on the stamp. Small, regular hole preserved in central part of stopper. It could be used for fermentation gasses or as removal device.	
		Eastern Desert Type 3 (Thomas 2011: 14–21)	
7		Stamped plaster stopper with ceramic sherds BE12-84/006/001	Context: BE12-84 Loc.006 PB017
1st–2nd cent. CE		Plaster, clay Color: 2.5Y 8/2 (pale yellow)	
Dia. 124 mm Th. 51 mm Dia. stamp 74 mm		Massive composite stopper: thick layer of plaster sealing numerous small pottery sherds (size 2–3 cm) used to make the plug. Top side of plaster stamped and painted red. Remains of resin visible on the sides of the plaster, which also retains an imprint of the inside of the amphora rim and neck. Stopper blocked even with the rim, leaving a small edge in the plaster where it spread over the rim top. Stamp unreadable	
One half preserved			
		Eastern Desert Type 2 (?) No traces of string (Thomas 2011: 14–21)	

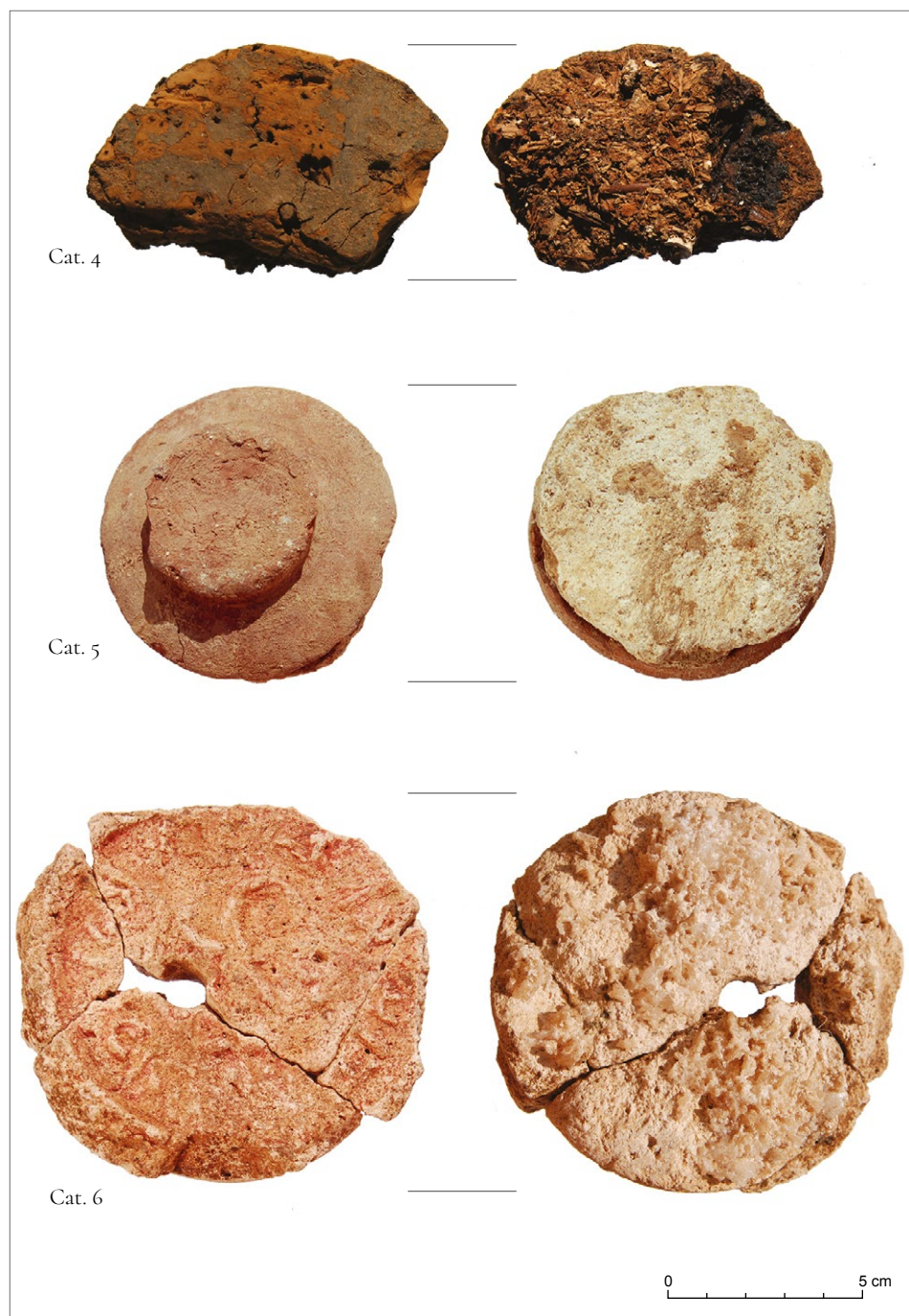


Fig. 5. Stoppers (top side on left, underside on right): Cat. 4 – cork plug with resin; Cat. 5 – plaster stopper with ceramic plug; Cat. 6 – stamped plaster stopper (Berenike Project | photos B. Wójcik; digitizing M. Bajtler)

8	[Fig. 6]	Plaster stopper BE12-84/013/001	Context: BE12-84 Loc.013 PB033
1st–2nd cent. CE(?) Plaster			
Diam. 110 mm	Stopper very regular in shape: upper surface slightly concave and very uneven (traces of the presumed tool for plaster application), bottom slightly convex with strong imprints of organic bung (palm fiber).		
Complete.			
Very well preserved			
Eastern Desert Type 5A–B (Thomas 2011: 14–21)			
9		Plaster stopper BE12-88/003/002	Context: BE12-88 Loc.003 PB002
1st–2nd cent. CE(?) Plaster Color: 10YR 8/3 (very pale brown)			
Diam. 80 mm	Massive stopper: plaster applied on the amphora rim, covering the edges (preserving the imprint of a triangular amphora rim). Imprint of a plug of square shape on the underside. The fresh plaster was pressed into small gaps between the plug and the vessel walls.		
Th. 26 mm			
Three-fourths preserved, broken into four fragments			
Eastern Desert Type 1(?) (Thomas 2011: 14–21)			
10	[Fig. 6]	Plaster stopper with monogram BE12-88/007/002	Context: BE12-88 Loc.007 PB015
1st–2nd cent. CE(?) Plaster Color: 10YR 5/3 (brown)			
Diam. 97 mm	Plaster stopper with monogram covering the entire surface, painted red. Inscription engraved in wet plaster with a narrow-tipped tool. Latin letters: E, A, R, O(?) but the inscription is unreadable (R. Ast, personal communication)		
Nearly complete			
11	[Fig. 6]	Wooden plug BE14-96/006/011	Context: BE14-96 Loc.006 PB010
1st–2nd cent. CE(?) Wood Color: 10YR 5/3 (brown)			
L. 103 mm; W. 99 mm; handle: 85 mm x 77 mm x 21 mm	Plug carved from one piece of wood (identified as pine; J. Zieliński, personal communication). Roughly circular presumably (now squarish in shape) disk with a massive handle. Presumed to be part of a sealing device, although does not preserve any features indicating its use as stopper (no traces of plaster, resin or mud).		
Nearly complete. Wood cracked and peeling			
Eastern Desert Type 12(?) (Thomas 2011: 14–21)			

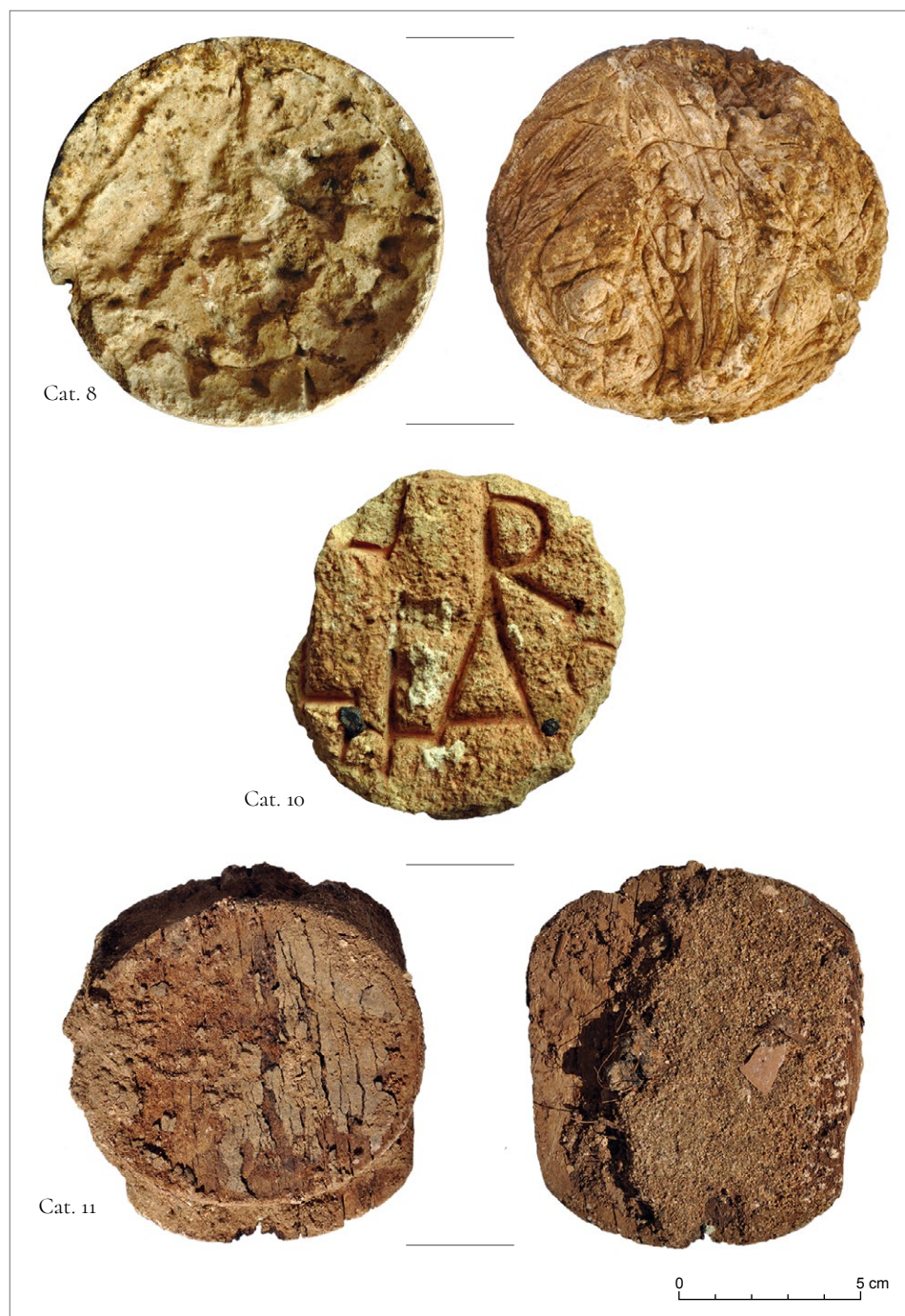


Fig. 6. Stoppers: Cat. 8– plaster stopper (top side on left, underside on right); Cat. 10 – plaster stopper with monogram (top side); Cat. 11 – wooden plug (top side on left, underside on right) (Berenike Project | photos S.E. Sidebotham ; digitizing M. Bajtler)

12	[Fig. 7]	Plaster stopper with ceramic plug BE14-96/006/012 = SCA 1562	Context: BE14-96 Loc.006 PB014
1st–2nd cent. CE		Clay, plaster Color: 10YR 5/3 (brown)	
Diam. 100 mm		Two-element stopper: ceramic bowl (plug) and layer of plaster. Bowl with rounded bottom and massive rim, blocked bottom down in the amphora neck and filled with plaster.	
Complete. Very good condition			
		Eastern Desert Type 3C (Thomas 2011: 14–21)	
13	[Fig. 7]	Plaster stopper BE14-96/999/003	Context: (unstratified) BE14-96 Loc.999 PB028
1st–2nd cent. CE(?)		Plaster Color: 10YR 7/4 (very pale brown)	
Diam. 85 mm Th. 47 mm		Massive stopper. Imprint of the inside of the amphora rim and neck in the plaster of the sides of this stopper. Small crumbled part at the edge of the stopper reflects its removing from the amphora. Impression of an organic plug (palm fiber?) on the underside.	
Nearly complete. Very good condition			
		Eastern Desert Type 5A–B(?) (Thomas 2011: 14–21)	
14	[Fig. 7]	Inscribed plaster stopper BE14-96/015/001 (SCA 1563)	Context: BE 14-96 Loc.015 PB.023
1st–2nd cent. CE		Plaster, ink	
		Composite stopper: plaster layer covering a probable ceramic bowl (imprint seen on the underside), top surface flat, inscribed. Letters in black ink covering about half of the stopper surface.	
Diam. 78 mm		MAP KO[
Nearly complete.		----	
		The <i>dipinto</i> should be read as the personal name "Markos"; the last letter is lost, but was probably <i>upsilon</i> or <i>sigma</i> : Μάρκου (of Markos) or Μάρκος. (Reading R. Ast, personal communication)	
		Eastern Desert Type 3C (Thomas 2011: 14–21)	



Fig. 7. Stoppers (top side on left, underside on right): Cat. 12 – plaster stopper with ceramic plug; Cat. 13 – plaster stopper; Cat. 14 – inscribed plaster stopper (Berenike Project | photos K. Braulińska, S.E. Sidebotham; digitizing M. Bajtler)

15	[Fig. 8]	Resin seal BE10-59/001/176	Context: BE10-59 Loc.001 PB018
5th–6th cent. CE		Resin	
Dia. 96 70 mm x 53 mm; Th. 15 mm		Thick layer of resin mixed with pebbles and organics.	
Nearly complete			
		Eastern Desert Type 13 (Thomas 2011: 14–21)	
16	[Fig. 8]	Mud stopper BE10-59/001/178	Context: BE10-59 Loc.001 PB003
5th–6th cent. CE		Mud (unfired clay) Color: 10YR 6/4 (light yellowish brown)	
Diam. 72 mm Th. 36 mm		Stopper convex on top. Surface powdery, slightly cracked. No traces of a plug preserved.	
One half preserved			
		Eastern Desert Type 7(?) (Thomas 2011: 14–21)	

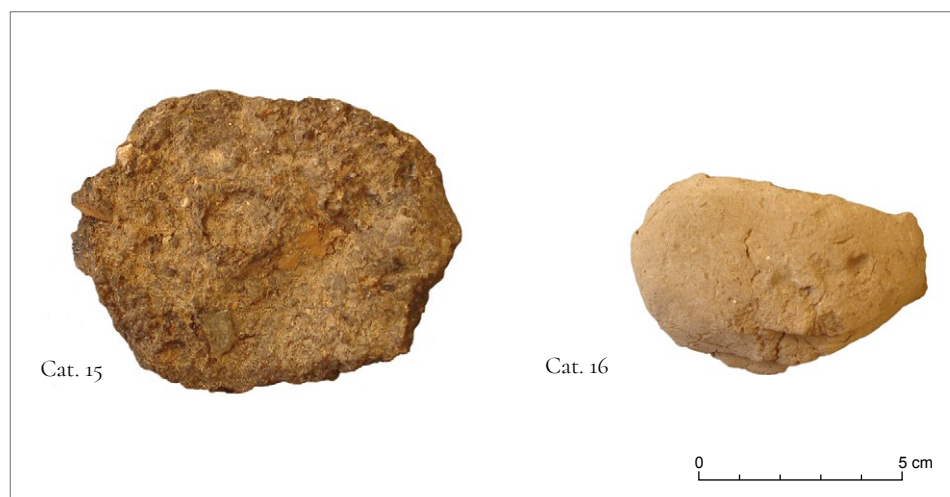


Fig. 8. Stoppers (top sides): Cat. 15– plaster stopper with ceramic plug; Cat. 16 – plaster stopper (Berenike Project | photos K. Braulińska, S.E. Sidebotham; digitizing M. Bajtler)

17	Amphora with ceramic stopper BE10-59/001/177 (G299)	Context: BE10-59 Loc.001 PB007
5th–6th cent. CE	Clay, resin Color: Orange	
Complete	Stopper preserved inside the neck of an amphora: a circular cut potsherd (roundcut), blocked even with the vessel rim. Gaps between the sherd and the amphora walls sealed with resin.	
	Eastern Desert Type 6(?) (Thomas 2011: 14–21)	
18	Plaster stopper BE13-61/103/002	Context: BE13-61 Loc.103 PB027
End 4th c. CE	Plaster (gypsum?) Very soft surface	
Diam. 85 mm Th. 18 mm	Imprint of the amphora rim visible in the sides of the plaster and the impression of a ceramic sherd (roundcut, probably plug) detectable on the underside	
One half preserved	Eastern Desert Type 1(?)	
19	Plaster stopper BE13-61/125/007	Context: BE13-61 Loc.125 PB018
5th cent. CE	Plaster Color: White	
Dia. 61 mm x 40 mm; Th. 10 mm	Stopper: plaster overlapped the rim and part of the neck of an amphora leaving an imprint of the rim and outer walls. On the underside, imprint of a textile or fine-mesh net.	
Half preserved	Eastern Desert Type 6 (?) (Thomas 2011: 14–21)	
20	Plaster stopper with stamp BE13-81/010/001	Context: BE13-81 Loc.010 PB007
Early Roman	Plaster Color: White	
Th. 27 mm	Stopper: plaster overlapped the rim of an amphora leaving its imprint on the sides. Small fragment of a stamp preserved with two or three unreadable letters and traces of red paint. Imprint of two potsherds on underside.	
One fifth preserved	Eastern Desert Type 2(?)	

21	[Fig. 9]	Plaster stopper with ceramic plug BE14-100/006/002	Context: BE14-100 Loc.006 PB006
–		Plaster, clay Color: 2.5Y 8/2 (pale yellow)	
Dia.pres. 75 mm Th. 29 mm		Two-element stopper: plug in the form of a fragment of a ceramic bowl covered with a layer of plaster. Bowl was blocked bottom down in the amphora neck.	
One half		Eastern Desert Type 3C(?) (Thomas 2011: 14–21)	

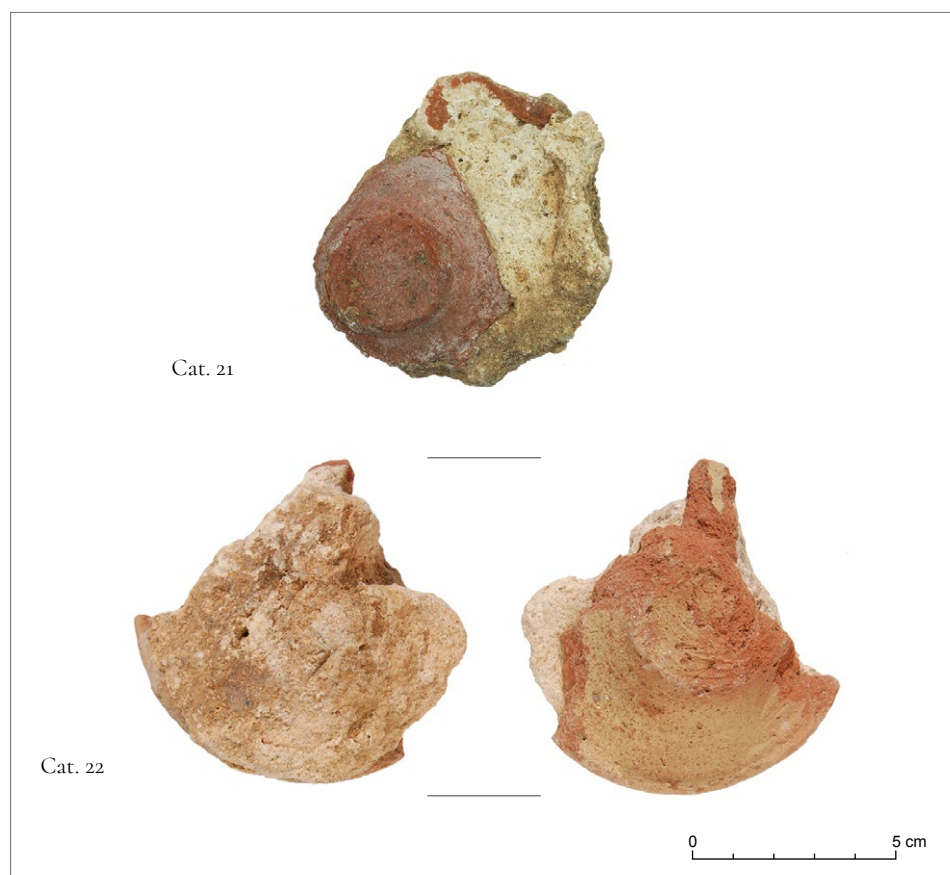


Fig. 9. Stoppers: Cat. 21 – plaster stopper with ceramic plug (top side); Cat. 22 – plaster stopper (top side on left, underside on right) (Berenike Project | photos K. Braulińska, S.E. Sidebotham; digitizing M. Bajtler)

22	[Fig. 9]	Plaster stopper with ceramic plug BE11-999/027	Context: (surface find) BE11-999 Loc.999 PB007
–		Plaster, clay Color: plaster 2.5Y 8/2 (pale yellow); pottery 10YR 7/4 (very pale brown)	
Diam. 80 mm Th. 45 mm		Two-element stopper: ceramic plug covered with a layer of plaster. A lid placed handle down blocked the amphora neck and was subsequently sealed with plaster.	
Half preserved			
		Eastern Desert Type 3C(?) (Thomas 2011: 14–21)	
23		Plaster stopper BE13-999/104	Context: (surface find) BE13-999 PB016 (west of early Roman rubbish dump)
Early Roman(?)		Plaster Color: 10YR 8/3 (very pale brown)	
Diam. 88 mm Th.max. 26 mm		Stopper: characteristic imprint of the inner amphora walls detectable on the sides of the stopper. Small indentations on the underside presumably left by the material which served as a bung.	
Nearly complete			
		Eastern Desert Type 9(?) (Thomas 2011: 14–21)	
24		Plaster stopper BE13-999/103	Context: (surface find) BE13-999 PB025 (edge of early Roman rubbish dump)
Early Roman(?)		Plaster Color: 10YR 8/4 (very pale brown)	
Diam. 95 mm Th. 18 mm		Stopper: imprint of the amphora rim detectable on the sides, traces of red pigment on the top. Impressions of potsherds used as a plug on the underside.	
Complete Very good condition			
		Eastern Desert Type 3(?) (Thomas 2011: 14–21)	
25		Plaster stopper with ceramic sherds BE13-999/094	Context: (surface find) BE13-999 PB020 (south of early Roman rubbish dump)
Early Roman(?)		Plaster, clay Color: very pale grey	
Diam. 86 mm Th. 30 mm		Two-element stopper: layer of plaster and small ceramic sherds. Three small sherds still fixed to the plaster on the underside next to the imprints of at least six more. At the edge, preserved rest of intentional hole used for elimination of fermentation gasses or as a removal device (the imprint of a piece of string has been preserved in the plaster). It was damaged when the stopper was removed probably using this hole. Imprint of the inside of the amphora neck in the plaster on the sides of the stopper.	
Nearly complete			
		Type 2 in the Eastern Desert typology(?) (Thomas 2011: 14–21)	

CHRONOLOGY, MATERIALS, SEALING TECHNIQUES

EARLY ROMAN PERIOD

Stoppers from the Early Roman period were found in 10 trenches: BE10-33/48, BE10-60, BE11-73, BE11-74, BE11-76, BE11-77, BE12-84, BE12-88, BE14-96 and BE10-67. All but one (plus some surface finds) come from the area of the early Roman rubbish dump located north of the southwestern embayment belonging to the southern harbor of Berenike. They are dated contextually to the 1st–2nd centuries CE. One example comes from a trench located on the embayment ridge. The dump as such, which has been excavated on and off since the beginning of excavations at Berenike in 1994, yields many organic and non-organic artifacts and biofacts related to workshops and other facilities that existed in this part of the settlement. The finds include a large group of ostraca as well as a recently identified animal cemetery presumably connected with a small shrine.

The most commonly used material to make stoppers was plaster (21 specimens, that is, about 40%). The plaster was laid in a thick layer over some form of bung. Ceramic elements, such as lids, bowls, pottery roundcuts or small vessels were often used. The two textile stoppers are the first to be recorded from the site since

the beginning of the excavations. One consisted entirely of a rolled-up piece of cloth; in the second case the cloth was wrapped around a ball of mud. Other forms of bungs included cork coated with resin, fragments of which have been found, and wooden plugs.

Inscriptions are present on four of the stoppers. Two of them were stamped and overpainted with red. Both inscriptions are very deteriorated and unreadable, in one case (Cat. 6) an uraeus symbol is visible. Another inscription was carved in wet plaster with a narrow tool and painted red. The fourth inscription was written in black ink.

LATE PERIOD

Stoppers from the Late period (at Berenike, this corresponds to the late 4th through mid-6th centuries CE) were found in two trenches: BE10-59 and BE13-61. Almost all the objects (12 out of 14) were excavated from a rubbish dump located in the northeastern part of Berenike amid buildings serving residential and trade purposes. The rubbish dump is largely from the 5th century CE, with some surface deposits from the 6th. Aside from post-production waste (animal skin and turtleshell workshops among others), the deposit consisted also of numerous amphoras, mostly Late Roman 1 from Cilicia/Cyprus and Late Roman 3 from Ephesus and amphoras from the Nile valley (Zych and Sidebotham 2010). Two plaster stoppers come from 5th-century contexts in the late temple located in the southwestern part of Berenike's southern harbor bay.

Table 2. Stoppers from 2010–2014 broken down by period

Amphora Type	R
Early Roman (1st–mid-3rd centuries CE)	Cat. 1–14
Late period (late 4th–mid-6th centuries CE)	Cat. 15–19
Other	Cat. 20–25

More than half of the discovered stoppers, most of which were very fragmented, were made from wet clay or mud, tempered with organic matter. The material is very fragile and breaks easily into smaller pieces. These stoppers were never stamped. One almost intact stopper was made of resin. A jar/amphora was found still with its original sealing still intact—a stopper made of a pottery roundcut sealed with resin.

OTHER

Seven stoppers have been included in this category, either from unstratified surface contexts or, in three cases, from contexts not easily dated to either of the two described chronological phases in Berenike (Hellenistic or late Hellenistic). All of these stoppers were made of plaster, one with a ceramic plug. One was stamped and painted red.

CONCLUSIONS

The presented stoppers are very diversified in their form and the materials that they are made of. Compared to previously published examples, they seem to be typical of the category, finding parallels among stoppers excavated in previous seasons. Only the textile stoppers (Cat. 1 and 3) have been recorded for the first time at Berenike.

The largest group consists of plaster stoppers found in early Roman contexts. As Denecker and Vandorpe report, plaster stoppers were characteristic of long-distance trade and usually sealed Egyptian wines (Denecker and Vandorpe 2007: 119, 124). Most of the finds from Berenike are from the rubbish dump, where they were discarded as waste, hence their fragmentary state of preservation. Single stoppers were found also in the southwestern harbor area. Elements that are characteristic of wine stoppers: Greek stamps with names and symbols, red paint or traces of resin/pitch, have been found on specimens from the present assemblage.

The inscriptions and symbols which appear on the stoppers cannot be connected with any known person. The symbol of the Uraeus (symbolizing the Egyptian goddess Renetutet, called Thermouthis or Hermouthis in Greek) was very popular on wine commercial stamps, of which many have been found at Myos Hormos. Some of them are even connected with traders known from ostracons or papyri (Thomas 2011: 27).¹

More can be said about the *dipinto*. (Cat. 14). This could be the name of the owner of the amphora which was sealed with this stopper. Ross I. Thomas and Roberta S. Tomber, based on finds from Mons Claudianus, connect ink *dipinti* of this kind with non-wine stoppers, probably sealing contents like fish sauce or olive oil. The inscription was meant to inform about ownership, but also content and the origin of the product (Thomas and Tomber 2006: 248).

Unfired clay sealings or mud sealings came from the late, 4th-to-6th century contexts. In Egypt, mud stoppers were

1 For example, names of individuals identified in the Nikanor Archive as traders, *logos*-holders (account holders). These were businessmen of standing or large-scale merchants (Mercator, Negotiator) with agents in the Red Sea ports (Fuks 1951; Denecker and Vandorpe 2006: 120).

most popular during the Hellenistic period and in late antiquity and were specific to local trade on a small scale (Denecker and Vandorpe 2007: 119). They were also stamped, but in Berenike no stamped stoppers were found.

Three types of stoppers found by Paola Davoli in Bakchias in Fayum were hand-shaped and stamped. They closed amphorae with local wine, intended for the local market (Davoli 2006: 138). From Amheida in Dakhleh Oasis there are mud stoppers which closed big wine jars with an ostrakon, a tag attached to it (Ast and Bagnall 2015: 6). Matrices for stopper stamps were found in Fayum. In abbreviated versions of the inscription, the information given included the year of production, the vineyard and the estate to which it belonged (Denecker and Vandorpe 2007: 120). Individual or estate names appeared on stamps from Bakchias (Davoli 2006: 142), the year of production and the name of estate where they came from on stamps from Amheida (Ast and Bagnall 2015: 6).

One issue to consider is why were so many stoppers discarded at harbor sites? Wine amphorae sealed with plaster stoppers for long-distance transport should have been sent off from such harbors. Almost all of the Berenike finds discussed in this report come from well-dated rubbish dumps; none of the contexts could be identified as storage facilities of any kind. The assumption thus is that they represented merchandise that was intended to be consumed on site and not exported. Some of it could have represented supplies for the commercial agents residing in these Red Sea harbors (Fuks 1951: 213). And of course the regular residents of

Berenike, plus the army, cannot be ruled out as consumers of goods intended for the local market.

Another possibility is that amphorae could have been opened for inspection and then resealed. Business agents representing the important businessmen—“logos holders” (kind of *negotiatores*)—in the Red Sea ports would have been the ones to perform such inspections. Others who could have been charged with such tasks were the officials in control of wine commerce, those collecting taxes or secretaries responsible for wine storage in Berenike. An inscription from the Isis Temple in Berenike was dedicated by a secretary in charge of an aromatics warehouse in town (Sidebotham 2015: 10). Did a similar function exist for other merchandise? Perhaps. The Nikanor Archive gives an idea of practices current in the transport of goods from the Nile Valley (Koptos) to the Red Sea harbors. The archive attests to the presence of transport companies and agents who represented big business in Berenike and Myos Hormos, and maybe in Koptos, in the Eastern Dessert (Fuks 1951: 209).

The resealing of containers on site after inspection must remain speculative until a matrix for stamping stoppers is found. Like in the case of the Cap Negret wreck containing a transport of amphorae Dressel 1C with wine from Central Italy. The amphorae had been sealed with bung of natural cork and a layer of pouzzolana (plaster with volcanic ash) and stamped. The matrix found on board could prove the presence of an agent tasked with such sealings (Hesnard and Gianfrotta 1989: 428).

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References

- Ast, R. and Bagnall, R.S. (2015). Ostraka. In *Amheida / Trimithis 2015 season report*. Retrieved from <http://www.amheida.org/inc/pdf/Report2015.pdf> (accessed: 10.05.2018)
- Bailey, D.M. (2007). Fired clay, plaster and miscellaneous objects. In D. Peacock and V.A. Maxfield, *The Roman imperial quarries: Survey and excavation at Mons Porphyrites, 1994–1998*, II. *The excavations (=EES Excavation Memoirs 82)* (pp. 297–328). London: Egypt Exploration Society
- Bajtler, M. (2015). Ceramic amphora stoppers from the east coast of the Adriatic. *Novensia*, 26, 69–81
- Bos, J.E.M.F. (2007). Jar stoppers, seals, and lids, 1999 season. In S.E. Sidebotham and W.Z. Wendrich (eds), *Berenike 1999/2000: Report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus Region* (pp. 258–269). Los Angeles, CA: Cotsen Institute of Archaeology, University of California, Los Angeles
- Bos, J.E.M.F. with contributions by C.C. Helms. (2000). Jar stoppers and seals. In S.E. Sidebotham and W.Z. Wendrich (eds), *Berenike 1998: Report of the 1998 excavations at Berenike and the survey of the Egyptian eastern desert, including excavations at Wadi Kalalat* (pp. 275–304). Leiden: Research School of Asian, African, and Amerindian Studies (CNWS)
- Cashman, V.L. with contributions by J.E.M.F. Bos and L.A. Pintozzi. (1999). Jar stoppers. In S.E. Sidebotham and W.Z. Wendrich (eds), *Berenike 1997: Report of the 1997 excavations at Berenike and the survey of the Egyptian Eastern Desert, including excavations at Shenshef* (pp. 285–298). Leiden: Research School of Asian, African, and Amerindian Studies (CNWS), Universiteit Leiden
- Davoli, P. (2006). I sigilli in argilla da Bakchias (el-Fayyum, Egitto). In C. Mora and P. Piacentini (eds), *L'ufficio e il documento: i luoghi, i modi, gli strumenti dell'amministrazione in Egitto e nel Vicino Oriente antico. Atti delle Giornate di studio degli Egittologi e degli Orientalisti italiani, Milano-Pavia, 17–19 febbraio 2005 (=Quaderni di Acme 83)* (pp. 133–149). Milan: Cisalpino
- Denecker, E. and Vandorpe, K. (2007). Sealed amphora stoppers and tradesmen in Greco-Roman Egypt: archaeological, papyrological and inscriptional evidence. *BABesch*, 82(1), 115–128

- Dieleman, J. (1998). Amphora stoppers. In S.E. Sidebotham and W.Z. Wendrich (eds), *Berenike 1996: Report of the 1996 excavations at Berenike (Egyptian Red Sea Coast) and the survey of the Eastern Desert* (pp. 265–278). Leiden: CNWS
- Fuks, A. (1951). Notes on the archive of Nicanor. *Journal of Juristic Papyrology*, 5, 207–216
- Gates-Foster, J.E. (forthcoming). Jar stoppers and seals from the 2001 season. In S.E. Sidebotham and I. Zych (eds), *Berenike 2010–2011. Report on two seasons of excavations at Berenike, including survey in the Eastern Desert and reports on earlier work* (=PCMA Excavation Series 4). Warsaw: PCMA
- Hesnard, A. and Gianfrotta, P.A. (1989). Les bouchons d'amphore en Pouzzolane. In *Amphores romaines et histoire économique: dix ans de recherche. Actes du Colloque de Sienne (22–24 mai 1986)* (=Collection de l'École française de Rome 114) (pp. 393–441). Rome: École française de Rome
- Mulder, S.F. (2007). Jar stoppers, seals, and lids, 2000 season. In S.E. Sidebotham and W.Z. Wendrich (eds), *Berenike 1999/2000: Report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus Region* (pp. 270–284). Los Angeles, CA: Cotsen Institute of Archaeology, University of California, Los Angeles
- Sidebotham, S.E. (2015). *Report to the Honor Frost Foundation on the winter 2014–2015 Berenike (Egyptian Red Sea coast), Egypt excavations & related fieldwork in the Eastern Desert*. Retrieved from <http://honorfrostfoundation.org/wp/wp-content/uploads/2015/03/Report-to-the-Honor-Frost-Foundation-on-the-winter-2014.pdf> (accessed: 10.05.2018)
- Sundelin, L.K.R. (1996). Plaster jar stoppers. In S.E. Sidebotham and W.Z. Wendrich (eds), *Berenike 1995: Preliminary report of the 1995 excavations at Berenike (Egyptian Red Sea Coast) and the survey of the Eastern Desert* (pp. 297–308). Leiden: Research School CNWS, School of Asian, African, and Amerindian Studies
- Thomas, R.I. (2011). Roman vessel stoppers. In D.P.S. Peacock and L.K. Blue (eds), *Myos Hormos – Quseir al-Qadim: Roman and Islamic ports on the Red Sea II. Finds from the excavations 1999–2003* (=BAR IS 2286) (pp. 11–34). Oxford: Archaeopress
- Thomas, R.I. and Tomber, R.S. (2006). Vessel stoppers. In V.A. Maxfield and D.P.S. Peacock (eds), *Mons Claudianus: Survey and excavation, 1987–1993, III. Ceramic vessels and related objects* (=FIFAO 54) (pp. 239–260). Cairo: Institut français d'archéologie orientale
- Zych, I. (2011). Finds. In S.E. Sidebotham and I. Zych (eds), *Berenike 2008–2009: Report on the excavations at Berenike, including a survey in the Eastern Desert* (=PCMA Excavation Series 1) (pp. 117–162). Warsaw: PCMA
- Zych, I. and Sidebotham, S.E. (2010). *Temples, dogs and rubbish—The 2010 season in Berenike. University of Delaware–PCMA expedition*. Retrieved from <https://pcma.uw.edu.pl/badania/sezon-po-sezonie/ampl2-3/> (accessed: 05.06.2018)