Naukratis: Greeks in Egypt

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http://www.britishmuseum.org/naukratis

Ptolemaic, Roman and Byzantine amphorae and stoppers

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1. Introduction

Amphorae are now a well understood field of archaeological study, constituting a major aspect of research into Hellenistic and Roman archaeology. They are common, distinctive and often well-dated. Their provenance and identification can also provide the source and contents of liquid commodities reaching cities such as Naukratis. The study of amphora stoppers allows one to check whether amphorae have been recycled locally and to associate quantifiable ceramic data with qualifiable epigraphic data concerning traders and agents involved in the transport of liquid goods; together the economy of Naukratis can be assessed in comparison with other major settlements in the region and further afield.

1.1 The Naukratis assemblage

Amphora sherds are commonly encountered walking through Naukratis to this day. However, they are relatively scarce within the assemblage collected by Petrie, Hogarth, Coulson and Leonard, discussed here. This is because of different collection biases and methods used. Nearly 6000 Ptolemaic, Roman and Byzantine pottery sherds were collected by these projects. Of these sherds, nearly 80% from the early work are of amphorae (almost exclusively imported stamped handles of the Hellenistic period), most only kept because they bear a Greek inscription. The much lower statistic of 8% from Leonard’s excavations represents a more realistic proportion of amphora indicator sherds found within Ptolemaic and early Roman domestic levels. The greatest diversity can be found within Coulson’s survey, where amphorae make up 20%, covering all periods up to the Byzantine period. Here amphorae were probably over-represented because they are hardy and highly visible. The different proportions of amphora sherds from the three different sampling strategies of Petrie, Leonard and Coulson, each represent different biases with different uses and limitations. Petrie et al. are useful for studies of stamped amphora handles (but little else). Leonard’s excavations are useful for the analysis of domestic assemblages of the Ptolemaic and early Roman periods. Coulson’s survey is useful for a rough overview of the whole period because he exhaustively surveyed a large area. It should also be noted that studying the Egyptian amphorae has led to the re-dating of Leonard’s phasing at Kom Geif and Kom Haddi.

This chapter incorporates Ptolemaic (Egyptian) amphorae, Early Roman period Egyptian and imported amphorae, Byzantine Egyptian and imported amphorae. Together comprising c. 420 pieces, of which c. 340 are Egyptian variants of six popular forms (AE1, AE2, AE3, AE4, AE5/6, AE7 described below). However, there is a degree of overlap with the study of

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1 5,944 sherds, 2,315 from Petrie, Gardner and Hogarth; 2,273 from Leonard’s excavations and 1,356 from Coulson’s survey. This excludes those forms which overlap with, but are most likely (if not certainly) Late Classical or Persian period in date.

2 See chapter on Stamped amphorae.

3 This would be complemented by unpublished survey and surface finds from new excavations at Naukratis since 2012.


5 Not imported Hellenistic amphorae, which are covered in the chapter on Stamped amphorae.

6 Over 2,200 amphorae of this period include over 1,800 imported Hellenistic amphorae (almost entirely stamped handles) treated elsewhere.
other earlier and contemporary wares\(^7\) and related industries, some of which were based in adjacent regions of the site.\(^8\) On occasion Ptolemaic amphorae were inscribed with graffiti.\(^9\)

1.2 Previous studies

The work undertaken by Coulson and Leonard in Naukratis\(^10\) and the surrounding area,\(^11\) have both been influential to, and complemented by, subsequent surveys\(^12\) and excavations\(^13\) in the region. Indeed Berlin’s typology\(^14\) has been heavily relied upon by subsequent surveys in the region.\(^15\) It was clear when incorporating subsequent research on the dating of Egyptian amphorae\(^16\) and other wares from securely dated contexts across Egypt,\(^17\) including new excavations at Naukratis,\(^18\) that there are problems with the dating of ‘Ptolemaic’ phases from Naukratis. This is explained in full in the chapter on Ptolemaic and Roman pottery.\(^19\)

1.3 Summary of the main amphora production centres

The majority of Ptolemaic, Roman and Byzantine amphorae found at Naukratis were produced in a Nile Delta silt ware, although other Egyptian and imported fabrics were encountered.\(^20\) The main wares can be subdivided into Nile Delta silts (and Nile valley silts), Mareotic kiln products (from the Alexandria region), Abu Mina marl fabrics (and other Egyptian marls) and imported wares. The main Egyptian fabric wares are discussed below to save repetition and the imported wares are discussed when encountered in the text below.

1.3.1 Naukratis and Kom Dahab Nile silt fabric

Nile Delta silt wares are well represented at Naukratis. They have a wide variety of internal diversity, which may represent regional or chronological differences. However, it is not currently possible to distinguish between the Naukratis production and that of nearby production centres at Kom Firin and the Ptolemaic kiln at Kom Dahab which was producing forms identical to those found at Naukratis (Figs.1–6).\(^21\)

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\(^7\) See chapters on Local Greek pottery, Egyptian Late Period pottery, Greek transport amphorae, Stamped amphorae, Ptolemaic and Roman pottery.

\(^8\) See chapters on Lamps; Portable stoves and braziers; Ptolemaic and Roman faience vessels and Ptolemaic and Roman figures.

\(^9\) See the chapter on Ceramic inscriptions.

\(^10\) Coulson 1996; Leonard 1997; 2001; specifically Berlin 1997; 2001


\(^13\) On Kom Firin see Spencer 2008; 2014; specifically Thomas 2014a on Late Period area; specifically Ptolemaic areas and other residual finds see Smolárková 2008; 2014.

\(^14\) The dating of which was based on Leonard’s dating of his phasing.


\(^16\) Dixneuf 2011.

\(^17\) For example at Mons Claudianus and Mons Porphyrites (Tomber 2006; 2008) amongst others.

\(^18\) Thomas and Villing forthcoming and below.

\(^19\) See chapter on Ptolemaic and Roman pottery.

\(^20\) Not all of the sherds were identified by the author in person, it was often necessary to work from photographs, drawings and notes. For this reason only broad fabric descriptions were possible in some cases. The same variety of wares was recognized in Naukratis as was found in Alexandria. See methodology in Tomber and Thomas 2011.

\(^21\) Thomas forthcoming. Note Fig. 1 shows a form identified as local by Coulson and Wilkie (1986, fig. 15, E11.101:23). This is either a very close copy of Knidian (which Egyptian Amphorae AE1 forms copied), or a Knidian original import.
Nile silt is the most common Egyptian pottery fabric. Nile Delta alluvial clay or silt ware is red-brown to dark chocolate brown in colour,\(^ {22}\) with abundant fine gold mica, quartz, and white or yellow inclusions (not necessarily limestone). In Naukratis (as is common in this region of the Nile Delta) it is highly organic, with abundant dung and long organic vesicles burnt out during firing, although the texture varies greatly depending upon the temper added and the function of the pottery vessel.

This fabric is represented by wasters across the site, near workshops and kilns identified by Petrie and other previous excavators, and where recent fieldwork (geophysical and surface pottery survey) confirms the presence of kilns. There is no clear distinction in appearance between Ptolemaic and Roman fabrics, although they are noticeably different from the Late Period fabrics which preceded them. Nile silts, and the slips used, are iron rich and were used to produce a variety of unslipped, black slipped (reduced), white slipped and (most frequently) red slipped (oxidized) wares.

### 1.3.2 Mareotic and Alexandrian calcaric fabric.

Ceramic production around the shores of Lake Mareotis near Alexandria is well documented.\(^ {23}\) The Alexandrian ware can resemble Nile silts, as it is also frequently red-brown with quartz, white (limestone and shell), mica and organic inclusions although it is a more calcaric coarse gritty fabric, with abundant limestone inclusions with a pale green or yellow surface or slip and fine ironstone inclusions.\(^ {24}\) Variation between Alexandrian kilns are significant.

The Ptolemaic fabric is generally red or brown with yellow to pale green surfaces and abundant limestone inclusions visible as reaction rims on the surface, with fine quartz, ironstone, voids, shell and mica inclusions. The Early Roman fabric is red-brown, with less common limestone, but more frequent and coarser quartz, ironstone, voids, shell and mica, being macroscopically similar in appearance to Nile silt. There is noticeable variation, perhaps due to firing conditions between kilns surveyed at Mareotis.\(^ {25}\) It is possible that some Byzantine red slipped wares were also produced in the Alexandrian region.\(^ {26}\)

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\(^ {22}\) Distinct from Nile valley hard and drab chocolate-brown and highly micaceous ware.

\(^ {23}\) El-Fakharian 1983; Empereur and Picon 1986; 1998, who itemized 28 workshops; Tomber and Thomas 2011, two Ptolemaic amphora kilns at sites 39 and 125, Early Roman amphora kilns sites 32 and 124.

\(^ {24}\) Tomber and Thomas 2011, 39. Noted differences between Ptolemaic and Early Roman fabrics.

\(^ {25}\) Tomber and Thomas 2011.

\(^ {26}\) ERSC silt ware is distinct from the usual Nile silts, being less micaceous (than ERSB), it is orange or red-brown with limestone and quartz inclusions. Hayes (1972, 399) suggested it might be a desert ware, near Abu Mina. Engemann prefers somewhere on the coast (1992, 156). It was most common in Alexandria and Mareotis (Tomber and Thomas 2011).
1.3.3 Abu Mina marl fabric

Pottery production at Abu Mina has been confirmed.²⁷ The fabric is orange-brown calcaric marl, usually with cream-yellow surfaces, occasionally light green, with common large limestone inclusions.²⁸ This fabric superficially resembles some Mareotis wares that also produced the same types of amphora and utility wares during the Byzantine period.

2. Ptolemaic amphorae, stamps and stoppers

2.1 Ptolemaic amphorae

Egyptian amphorae were produced and used at Naukratis since the Saite Period. Traditional Saite jars of the 7th or 6th centuries BC are documented from the site²⁹ and contemporary with local copies of Archaic and Classical Greek amphorae and Cypro-Phoenician torpedo amphorae which continued to be used locally from the 5th until the 3rd centuries BC.³⁰ However, the majority of amphorae³¹ found at Naukratis were of Egyptian manufacture, of Graeco-Roman date and restricted to a small variety of Egyptian copies of largely Greek style amphorae forms made in the Naukratis or Alexandrian regions.

Most fabrics represented are from Naukratis or nearby production sites, such as Kom Dahab. However many of the forms resemble those produced in Alexandria and Mareotis region and commonly associated with that region.³² There is a close resemblance between local production and that from the contemporary kilns found in Mareotis, including the variants known as AE1 and AE2.³³

AE1³⁴ have a small simple rounded ‘bead’ or overhanging rim, on a long cylindrical neck with long oval sectioned handles reaching from just below the rim to the carinated shoulder, apparently copying Rhodian and Knidian amphorae (Fig. 7). The tapering body leads to a narrow, solid, or hollow, spike. The form copies early Hellenistic shapes. Variants include: the beaded rim form AE1-1 (3rd to 2nd century BC, Fig. 1), and overhanging rim forms AE1-2 and AE1-3 (mid-3rd to 2nd century BC). AE1-1 were found within 3rd to 2nd century BC contexts at Naukratis with two fabric

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²⁸ See Engemann 2016.
²⁹ Large numbers have been found in Naukratis associated with kiln wasters (Thomas forthcoming). For parallels from Kom Firin see Thomas 2014a, chapter by Spencer 2014.
³⁰ Thomas 2014b; Dixneuf 2011; see chapter on Egyptian Late Period pottery.
³¹ With the exception of the stamped amphora handles, which certainly represent collection bias by Victorian excavators (especially Petrie) who acquired many from local villagers.
³² Dixneuf 2011.
³³ AE stands for Amphore Égyptienne following a typology developed by Empereur and Picon (1986) and most recently Dixneuf (2011).
³⁴ For up to date bibliography see Dixneuf 2011; Empereur and Picon, 1986; 1989; 1992; 1998; 75. Note Keay and Williams 2005 (2014) erroneously dated to the Roman period and limited to Mareotis region.
variants: a local Delta silt and a gritty, lime-tempered, dirty-white calcareous fabric.

Overhanging rim and hollow based variants within group AE1-2 and AE1-3 show a development over time of copies based on early Hellenistic, particularly Knidian forms. The varied base forms represent developments from the mid-3rd century BC through to the 2nd century BC. Both AE1-2 and AE1-3 were commonly found within survey and excavated material from Naukratis.

AE2 forms have a collared squared rim (sometimes grooved), on a long neck, and a tapered or ovoid body leading to a narrow solid spike. AE2 Nile silt amphorae have 2nd century BC parallels from Maskhuta, Tell Timai, Coptos, Mareotis, Tell al-Haraby and Pelusium. They are well represented within Leonard’s excavations, particularly within the later Ptolemaic levels of the South Mound. It is important to subdivide AE2 into chronologically distinct groups, although this is not always possible with this common form.

Early variant AE2-1.1 has a short collared rim with long oval sectioned handles resting on a carinated shoulder (mid-3rd to mid-2nd century BC) above a tapering body (Fig. 8). From the 2nd century BC, amphorae were squatter, with more rounded bodies, following the Knidian style.

Late (late 2nd to early 1st century BC) variant AE2-2 has a long collared rim (sometimes grooved) with two short and rounded arched handles resting on the curved shoulder of an ovoid body (Fig. 9). Late Ptolemaic variant AE2-3 has an in-thickened rim. AE2-3 is dated to the late 2nd to early 1st century BC, and has been found in 1st century BC contexts in the South Mound at Naukratis (Figs. 10–11). AE2-3 amphorae (Fig. 12) were also produced in the Alexandrian Mareotis region. Both AE2-1 and AE2-2 production in Mareotis are associated with amphora stands, also identified at Naukratis.

35 Produced at nearby Kom Dahab (Berlin 1997; 2001, 44–5, fig. 2.56:1, 2) and also probably Naukratis.
36 Thought to be from Aswan (Berlin 2001, after Hayes pers. comm.), but more likely from Alexandria (Tomber and Thomas 2011).
39 Berlin states these come from 3rd to 2nd century BC contexts (Berlin 2001, figs. 2.56:3–8, 2.57:4–5), however, most of these contexts dates have been revised to the 2nd century or early 1st century BC contexts.
40 Holladay 1982, pl. 33.13
41 Ochsenschlager 1967, fig. 9
43 Tomber and Thomas 2011, 40–1, AE2 variants.
44 Majcherek 1992, 134, no. 4.
45 Ballet 1997b, 118, pl. II, no. 29.
46 Berlin 1997, 6.7.2; 6.22; from Kom Hadid Berlin 2001, Fig. 2.56:3–9; 2.57:1–6.
47 Coulson 1996, 1805a–b,d–g,k,m–q,s–s, 1811, 1807, 1529c–d, 1768, 1582c, 1560, 1033, 1417.
48 Berlin 2001, fig. 2.57:1–3.
49 Majcherek and Shennawi 1991, fig. 1; Tomber and Thomas 2011, 40–1.
50 Tomber and Thomas 2011, 40–1.
2. 2.1 Ptolemaic amphora stoppers and vessel-stamps

Both the impressed stoppers (used to seal) Ptolemaic amphora and the vessel-stamps used to impress them were found at Naukratis. All were locally made and locally used. Their presence confirms that wine amphorae were sealed at Naukratis, suggesting a wine industry nearby.

Three Ptolemaic stoppers were found at Naukratis (Figs.13–14). All are terracotta discs or plugs, with the same dimensions as the internal diameter of contemporary locally produced amphorae (9.6–12.8 cm), with impressed (stamped) decoration in relief.51 These are intentionally fired stamped stoppers, made of local Nile Delta silt, not mud bungs fired by accident, because they were intentionally slipped red (after they were stamped and before they were fired). The added red coloration is a common feature of wine amphorae stoppers.52 On the reverse, there is evidence of a plaster seal used to attach the plug to the neck of the amphora. The form or type appears to be primarily used for wine amphorae, with Hellenistic and Augustan period parallels from across the Mediterranean and Red Sea regions.53 Mould-made terracotta amphora stoppers, called Ἴπουρτα, were mass produced in Egypt, since at least the mid-3rd century BC, as recorded in the Zenon archive.54

The stamped decoration in relief included iconography associated with wine production. One example55 depicts a scene of pygmy chasing a crane with a knife in his right hand (Figs. 14–15). On the ground is a Hellenistic amphora, which helps date the scene to approximately the 3rd or 2nd century BC. The contents of this amphora were both filled and consumed in Naukratis, as both the stamped sealing of the stopper and the vessel-stamp device (or a very similar one) used to make it were both found in Naukratis.56

The second example has a stamped impression of a bull’s head (boukranion, Fig. 13).57 The scene can probably be dated to the 2nd or 1st century BC, when this was a popular device on amphora stoppers and handles, particularly from Knidos.58 A vessel-stamp from Naukratis has a very similar boukranion.59 The third stopper depicts in high relief an eight pointed rosette.60 Two other vessel-stamps from Naukratis have

51 Distinguishing them from the stamps that produced them which always appear to be hollow depressions.
52 Thomas 2011.
53 Thomas 2011, Type 3A. Augustan parallels from Myos Hormos, Egypt, where Italian parallels from Alexandria are also cited.
55 Munich, Bavarian State Collection of Antiques 5310 (Hamdorf, Knauss and Leitmeir 2014, E.964, see also same subject on figure E.244).
56 The stamp (Bolton Museum 1886.31.35; Petrie 1886, pl. Xxi) is rather worn and the two could not be seen together, but clearly depict the same scene if not from the same series.
57 British Museum 1886.0401.1368; Petrie 1886, pl. xxiv; Walters 1903, E.160. Petrie’s identification as a bread or cake-stamp is unlikely because of the plaster adhering, and because the object is in relief.
58 Parallel from Thebes (Bailey 2008, no.3315). This devise was popular on Knidian amphora handles (Omar and Thomas 2011).
59 British Museum 1886.0401.1369 (Bailey 2008, no.3308).
60 Boston, Museum of Fine Arts RES.87.298. Not illustrated.
All three stoppers were locally produced using stamps that have also been found at Naukratis, or at least by vessel-stamps that have remarkably similar scenes to examples found at Naukratis. However, stoppers are scarce in comparison to the number of vessel-stamps found. This could be caused by a number of factors. The most likely explanation is that the majority of vessel-stamps (below) were used to stamp gypsum plaster sealings, and that these have not survived the damp conditions at Naukratis. Alternatively the majority of stoppers produced by these vessel-stamps may have sealed liquid commodities within amphorae traded to other places and not consumed locally. Finally, the excavators (particularly Petrie) may have happened across a place where the vessel-stamps were being produced or used, such as a terracotta workshop, kiln or estate, explaining the higher quantity of vessel-stamps over stamped stopper sealings (although this seems to be less likely).

2.2.2 Ptolemaic amphora vessel-stamps

Fifty-one limestone or terracotta Ptolemaic amphora stopper stamping-devices were found at Naukratis. They have an incised scene in negative, surrounded by a decorative band and commonly depict scenes that would suggest the contents were wine (grapes, vines, amphorae, people collecting grapes), but also Egyptian deities (Apis, see Fig. 18, or Bes) and mythical creatures, animals (cockerels or deer) and rosettes. One stamp records the owners name (either a wine trader or estate owner) ΘΕΩΝΟΣ (Theon). Such stamping-devices are commonly, but erroneously, described as cake or bread stamps. However, their erroneous identification as cake stamps can be discounted by the frequent occurrence of plaster residue within the grooves of many examples, left by the gypsum sealing last stamped in antiquity. Some stamps were used to produce the decorated terracotta amphora stopper discs found at Naukratis and described above. All of these vessel-stamps probably date remarkably similar rosette devices, although neither were used to produce this stopper.

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61 Oxford, Ashmolean Museum AN1886.515 may have been so used. British Museum 1886, 0401.1369 has a slightly different design (Bailey 2008, no.3308).
62 A small number of Gypsum stoppers from later (higher) levels of the tell did survive, and are discussed below.
63 Both Petrie and Hogarth excavated terracotta workshops in Naukratis, although no specific context is recorded for these stamping-devices.
65 British Museum 1965.0930.895.
66 Petrie 1886; Bailey 2008.
67 Bailey 2008, 3608, 3609, 3611, 3612; British Museum 1886, 0401.1368; 1886,0401.1373; 1886,0401.1374.
Figure 20. Roman Egyptian amphora AE3-1/1 to AE3-5.1-2, 50 BC – AD 50/230 (Berlin 1997, fig. 6.37.19. © W.D.E. Coulson Archives, University of Thessaly, Dept of History Archaeology and Social Anthropology).

Figure 21. Roman Egyptian amphora AE3-1/1 to AE3-5.1-2, 50 BC – AD 50/230 (Berlin 1997, fig. 6.37.19. © W.D.E. Coulson Archives, University of Thessaly, Dept of History Archaeology and Social Anthropology).

Figure 22. Roman Egyptian amphora AE3-2D/3-1/5/3-4 or 3-2, AD 1–200/250 (Berlin 1997, fig. 6.37.19. © W.D.E. Coulson Archives, University of Thessaly, Dept of History Archaeology and Social Anthropology).

Figure 23. Roman Egyptian amphora AE4 handle AD 25 – 255. Bristol, City Art Gallery & Museum H2745. Photograph © Bristol Museums, Galleries & Archives. Photography by British Museum staff.

3. Roman amphorae and stoppers

3.1 Roman-Egyptian amphorae

Egyptian amphorae used within Naukratis during the Early Roman period were mainly from production centres within Alexandria or around Lake Mareotis, or from the Nile Delta region. The amphorae show the same characteristics as for the preceding Ptolemaic period discussed above, with Alexandrian amphorae being distinctive for their lighter fabric, often with a white wash. However, Alexandrian kilns produced a diverse range of fabrics on the spectrum of white calcareous to darker Nile silts, even within the same kilns, and Roman period productions are more difficult to distinguish between Mareotis and Nile silt fabrics.

The most diagnostic Roman Egyptian amphora is the biconical amphora AE3. AE3 is known for its biconical body, cylindrical neck, two small looped handles at, or just under, the rim, and a tapering base ending with a solid spike. A diverse range of grooved, double-lipped or beaded rim variants of this amphora can be distinguished, when diagnostic features are preserved.

Early AE3 forms had concave rims (form AE3-3.1 or AE3-5.1, Fig. 21) and appear in the latter 1st century BC, with a hollow spike, dated to the late 1st century BC to early 1st century AD. This rim form was common at Naukratis. These developed into the Roman period with solid spikes. The Nile silt AE3 amphorae were mainly (but not entirely) locally produced; amphorae AE3-2 made in the Delta are common, particularly ribbed variants of the 2nd and 3rd centuries AD (Fig. 22). However, ribbed, to the Ptolemaic period, although is possible that some continued to be used into the Early Roman period.

68 Although a small number of either certain or probably Late Period amphora stopper stamps are also known from Naukratis, Boston, Museum of Fine Arts 88.911; Cairo, Egyptian Museum JE96711; British Museum 1888.0601.77; 1886.0401.1706.
69 Bailey 2008. The author is not aware of any examples of such stamps or their products from a secure context that would confirm this.
70 As recognized from the wasters found alongside kiln sites of the Ptolemaic and Roman periods around lake Mareotis (Tomber and Thomas 2011, 39). Noted differences between Ptolemaic and Early Roman fabrics.
71 Dixneuf 2011. AE3; Bailey 1982. Bailey type A.
72 Tomber 2007, 2006; Dixneuf 2011.
73 Generic AE3 amphora sherds were published by Coulson (1996, nos. 13, 24, 27, 86, 87, 99, 133, 194, 196, 253, 286, 314, 326, 332, 350, 386, 415, 422, 425, 470, 587, 628, 644, 662, 692, 716, 882, 922, 931, 1058, 1077, 1141, 1246, 1513, 1582d, 1610, 1635, 1644, 1667, 1722, 1747, 1785, 1791, 1805h, 1805p). More specific diagnostic features were not always identifiable from the drawings or photographs, or were not preserved.
74 Berlin 2001, fig. 2.57, 6–8. Resemble closely forms AE3-5.1 associated with Coptos production, and AE3-1.1 associated with Alexandrian production, but likely here to be local. Mons Claudianus Type 1 biconical amphora with almond-shaped rim. Late 1st century BC into at least the early 3rd century AD (Tomber 2006, 143; Tomber 2007; Tomber and Thomas 2011, 49–50).
75 Coulson 1996, nos. 54, 67, 132, 145, 146, 207, 215, 321, 325, 819, 957, 1036, 1401, 1783, 1786, 1788, 1797, 1798, 1815. It was often not possible to discern between early and late forms AE3-5.1 and Ae3-5.2 respectively.
76 Tomber and Thomas 2011, 49–50; AE3 type; Tomber 2006, 143–8. Mons Claudianus types 1, 2 and 12.
77 Coulson 1996, nos. 489, 648, 1717, 1718, 1727, 1749, 1770, 1773, 1780, 1835, 1855.
78 Whilst Fig.22 illustrates the rim form, ribbing was either not preserved or not illustrated on the rim fragment example illustrated.
trangular rimmed forms commonly associated with Fayum productions (AE3-4, later 1st to 3rd centuries AD) are found in fabrics that look distinctly like the local Nile Delta silt, raising questions about how distinctive regional forms were. Examples of the late forms AE3T of the late 3rd to 7th century AD are rare, but present, at Naukratis and are discussed below. Although identification is not always possible from the records available. Recognized Alexandrian forms include concave rim AE3-1.1A (late 1st century BC to 2nd century AD), ribbed with grooved lip rim forms AE3-1.4, AE3-1.6 and ribbed triangular rim form AE3-1.5 (all three 2nd to 3rd century AD).

Alexandrian copies of Koan wine amphorae, commonly known as Dressel 2-4, or AE4 are relatively common at Naukratis (Fig. 23). These distinctive late 1st to early 3rd century AD amphorae are well known from Alexandria and Mareotis, and came in similar fabrics to the AE3-1 and Ptolemaic amphorae from that region.

3.2 Roman imported amphorae

The start of the Roman period marks a significant change in the origin of transport amphorae used to transport wine, oil and fish sauce commodities to Naukratis. Italian amphorae from the Campanian region found at Naukratis were imported in the Augustan period and early 1st century AD, until the Vesuvian eruption in AD 79. Campanian amphorae are distinctive with an orange-red black sand fabric, which include the late 1st century BC to late 1st century AD Dressel 2-4. One example (Fig. 24) bore the stamp of Lucius Eumachius, from a well-known Pompeii family who had wine producing estates in the Campanian region and traded with Gaul, Turkey and Egypt. Occasionally amphora stoppers were preserved. One example with a Latin inscription is an Italian import.
During the 3rd and 4th centuries AD, North African and Cypriot/Cilician imports became increasingly more common; examples include the two stamped Tripolitanian amphorae from the reigns of Septimius Severus to Severus Alexander (Fig. 25) along with numerous North African red-slipped table wares. However, North African amphorae of the 1st to 5th centuries AD were rarely found at Naukratis.\(^9\) Whilst two stamped Tripolitanian amphorae have been identified at Naukratis (Fig. 25),\(^9\) the common North African Africana II\(^9\) and Africana III\(^9\) forms are yet to be identified at Naukratis. Despite the fact that the annona grain tribute effectively subsidized trade with Rome, the archaeological evidence suggests rather limited imports at Naukratis (<20% of all Early Roman pottery),\(^9\) as was also the case in the Western Delta (<20%)\(^9\) and Mareotis (<10%).\(^9\) Naukrattes relied on Egyptian products, such as the fine wine and wine amphorae of Mareotis, which had become a regional and international exporter of wine in the 1st century AD, when Alexandrian amphorae were exported to India, South Arabia and East Africa.\(^9\)

Cilician or Cypriot amphorae have a pale marl fabric with abundant sandy quartz, limestone, chert, basalt and ferro-magnesian minerals including pyroxene and serpentine inclusions.\(^9\) They include the double-rod handle type Dressel 2-4 with short peg-like base (Fig. 26),\(^9\) flat-bottomed forms known as Dressel 30 (Fig. 27)\(^10\) and Pompeii V (Figs. 28–9)\(^10\)


\(^9\) Tripolitanian amphorae British Museum 1886.0401.1703 and 1955.0920.91 (Thomas 2014, Fig. 8) are probably both Tripolitanian 3 forms, also known as Ostia 64 and Peacock and Williams 36. These were produced in Tripolitania, Libya, where several kiln sites are known (Panella, 1973; Arthur, 1982), including Zitha (Bonifay, 2004). They were produced to contain olive oil (Panella, 1973; Bonifay 2004) and exported widely in the second to the first half of the third century AD. The stamps on both these examples are thought to be of Severan Date (early to mid-3rd century AD). These forms were small and Tripolitanian forms 1,2 or 3 could be represented, that were produced during the 1st to 4th centuries AD (Bonifay 2004, 92) and have also been found in Alexandria (Tomb and Thomas 2011, no.150).

\(^9\) Small fragment British Museum 2011,5009.272 (found unregistered) may belong to an Africana form. Africana II (also known as Keay XXV variant 1) dated to the late 2nd to 4th centuries AD (Bonifay 2004, 107–19) and Late variant Africana II/ID (Grande, also known as Keay VII), is dated to the 3rd and 4th centuries AD (Bonifay 2004, 117) and are both attested in Alexandria (Tobmer and Thomas 2011, nos. 152 and 153).

\(^9\) Late 3rd to the first quarter of the 5th century AD (Bonifay 2004, 122: Keay 1984, 196–7, fig. 82, XXVF), attested in Alexandria (Tobmer and Thomas 2011, 151).

\(^9\) Restaurant 2014b, Fig. 12.


\(^9\) Tobmer and Thomas 2011, 38.

\(^9\) Tobmer 2008.

\(^9\) Tobmer 2006, 168; Williams 2005. See Tobmer 2006, 166; Williams 1989, 91–95, on the less common micaceous Cilician variants such as the example illustrated below in Fig.28.

\(^9\) Dressel 2-4 was found in Naukratis (Coulson 1996, nos.101, 1801). Barrel-shaped amphora with carinated shoulder, double-rod handle and peg base. 1st century AD, common at Mons Claudianus, in the 2nd and early 3rd centuries (Tobmer 2006, 168–9, table 1.17) and in Alexandria (Tobmer and Thomas 2011, 138–9). A second contemporary double rod handled type, Agora M54, has not yet been identified in Naukratis, although undiagnostic fragments can be confused with the above. This mid-1st to late 2nd (possibly 3rd) century AD variant (Reynolds 2005, 264, fig. 6) is also known from Alexandria (Tobmer and Thomas 2011 no.140). Barrel-shaped amphora with carinated neck and shoulder, peaked double-rod handles and a solid, plain base end with a rounded point.


\(^9\) Found in Naukratis (Coulson 1996, nos. 112, 228, see also variant 371; Thomas forthcoming N16.11.1, N16.13.1, N16.14.2). Pompeii V amphora with a footing base, stepped rim and long grooved handles, arched at the top. 1st to mid-2nd centuries AD (Reynolds
pinched-handle Agora G199 amphorae (Fig. 30). The distribution at Naukratis is consistent with the main forms produced in both Cyprus and Cilicia during this period. Other Eastern Mediterranean amphorae comprise 2nd to 4th century AD hollow-foot amphorae, and 1st to 6th century AD Late Roman Amphora 3 variants.

3.3 Roman amphora stoppers and stamps

Seven terracotta and plaster amphora stoppers of Roman date are known from Naukratis, with an additional two that may date to the Roman period. A range of stopper types were found, each from a different period or origin and used to seal amphorae containing liquid commodities consumed at Naukratis. Three main types were found, all used to seal amphorae containing wine produced in either Egypt or Italy.

1. Two plaster seals were attached to a round cut sherd plug (wheel mark impression indicate the presence of the since lost sherds). The stopper was constructed by placing a round cut sherd into the neck of an amphora, often coated on the underside with pine pitch, with removal strings passing underneath, before sealing with gypsum or lime plaster. The plaster sealing of the stopper would then be stamped and painted with a red wash. This common amphora stopper type has been found across Roman Egypt. These are underrepresented in the archaeological record.

2005, figs. 13–18) and are well represented in Egypt (Tomber 2006, 167–169, no.57, see variant no.61; Tomber and Thomas 2011 no.141). Agora G199 have only been identified from the new excavations at Naukratis (Thomas forthcoming, N15.8.1.53, N16.14.2). These barrel-shaped amphorae with pinched handles and mushroom base are known from Alexandria (Tomber and Thomas 2011 no.142) and the Eastern Desert of Egypt (Tomber 2006, 170–1, no.60). Produced from the 1st to 4th centuries AD, this form was particularly common in Beirut between the 2nd and the 4th centuries AD (Reynolds 2005, 564, fig. 1). See also Cypriot mushroom base from Naukratis which is from a related and contemporary Mau 27-8 amphora form (Tomber 2006, 166–7, no.52).

Of the early Roman forms, Empereur and Picon identified Dressel 2-4, Agora M54 and Pompeii V from their surveys at Yumurtalik in Cilicia (Empereur and Picon 1989, 228, 230–2, see also Reynolds 2005).

Peacock and Williams Class 47 (Peacock and Williams 1986, 193–5), found in Naukratis (Coulson 1996, no. 84).


British Museum 1885.1101.17 is probably Byzantine and discussed below: Boston, Museum of Fine Arts 86.486 is from a small vessel, possibly not an amphora, and not specifically datable beyond Greco-Roman; however see Thomas (2011, 20–21, Type 9).

Following here the typology developed for this period (Thomas 2011, 11–21).

Types 1, 3A and 4.

British Museum EA22260: Cambridge, Fitzwilliam Museum GR.46.1887.
2. A single hydraulic plaster\(^{111}\) stopper sealing, once attached to a plug or disk of cork (or less likely terracotta, since lost, Fig. 31).\(^ {112}\) It has a simple rectangular stamp with two obscured lines of Latin text, probably of a trader’s name. The stopper dates to the late 1st century BC or the 1st century AD, a period when Campanian wine amphorae were imported to Naukratis.\(^ {113}\)

3. Four mould-made terracotta disc amphora stoppers with relief decoration or text.\(^ {114}\) One late Republican South Italian or Damatian example bears the name Plator in Latin (Fig. 32).\(^ {115}\) A second example from Alexandria with a simple circular design (Fig. 33),\(^ {116}\) and two mid-1st to 2nd century AD stoppers depicting a cobra surrounded by Greek text.\(^ {117}\) These stoppers served as both the plug and the sealing of the amphora, with the design intended to be visible. They must have been attached to the amphora with gypsum or pitch on the underside edge.

The cobra stoppers from Naukratis\(^ {118}\) have numerous parallels\(^ {119}\) that all date between the mid-1st to the 2nd century AD at Myos Hormos,\(^ {120}\) Mons Claudianus,\(^ {121}\) Coptos\(^ {122}\) and Berenike.\(^ {123}\) Contemporary wooden stamps to make such cobra impressions have been published from Theadelphia\(^ {124}\) and Narmouthis in the Fayum.\(^ {125}\) The cobra is depicted with horns, and a sun disk, surrounded by vegetation (papyrus stalks), commonly associated with Roman representations of Renenutet-Isis-Hathor, also known as Hermouthis, goddess of the Fayum.\(^ {126}\) Depictions of Renenutet on wine amphora stoppers from the Fayum are known since the 14th century BC.\(^ {127}\) There may be a double meaning, as the striking ‘Uraeus’ cobra, also known as the ‘iaret’, and associated in the Nile Delta with the goddess.

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\(^ {111}\) The seal material is hard with ceramic and black stone inclusions that is consistent with hydraulic cement, such as Italian pozzolanic cement. However the plaster requires analysis to confirm that this can be distinguished from Egyptian plasters.

\(^ {112}\) British Museum 1888,0601,696, inscribed, ABIO. Probably 1st century AD.

\(^ {113}\) Thomas 2011, type 4.

\(^ {114}\) Thomas 2011, type 3A.

\(^ {115}\) British Museum 1886,0401,1572, inscribed PLATOR, a name attested in Southern Italy or Dalmatia (Johnston 2016, 48–9). Probably 1st century BC.

\(^ {116}\) Thomas 2011, type 3A, dated to the Augustan period.

\(^ {117}\) Thomas 2011, type 3A, a late variant.

\(^ {118}\) British Museum 1886,0401,1373 and 1886,0401,1374.

\(^ {119}\) See Bailey 2008, no.3611

\(^ {120}\) Thirty-six examples from late first to second century BC contexts (Thomas 2011, 23, table 3, figs 3.11–13; Johnston 1979, 235, pl. 75; d–f).

\(^ {121}\) Seven examples (Thomas with Tomber 2006, 252–4, fig. 2.15; Thomas 2011, 23).

\(^ {122}\) Cuvigny 1998, 5 figs. 4–5.

\(^ {123}\) Seven examples (Thomas 2011, 23; Bos and Helms 2000, 293; Sundelin 1996, 300–2, fig. 16–1, pl. 16-2, dated late first century AD; Cashman et al. 1999, 287, fig. 15.2, context of late first century BC to first century AD).

\(^ {124}\) Nachtergaele 2000, 280, Figs 7–8.

\(^ {125}\) Bresciani 1968, 30, fig.3, pls A:1 and X:1–3. The inscription on the stamping device was incorrectly identified as Aramaic and dated fourth to third century BC, but this Greek stamp is probably 1st or 2nd century AD.


\(^ {127}\) Hope 1978.
Wadjet, is the protector of the Pharaoh-Emperor.\textsuperscript{128} Many examples were found with the names of Imperial freedmen of the Emperors Claudius or Nero, who were running imperial estates in Egypt.\textsuperscript{129} The partially preserved abbreviated retrograde tria nomina stamped on one example from Naukratis (Fig. 34),\textsuperscript{130} may be the same individual (Tiberius Claudius Hermes) already attested on other stamped stopper sealings found in the Eastern Desert. The cobra stamp may intentionally indicate wine produced within imperial estates in the Fayum, which was a common export from, and consumed within, Egypt during the period c. AD 40–100 and possibly a little later.\textsuperscript{131}

4. Byzantine amphorae

4.1 Byzantine-Egyptian amphorae

Variants of three Egyptian forms were produced throughout the Byzantine period in Egypt in a variety of wares (\textit{AE3T}, \textit{AE5/6} and \textit{AE7}). All of these amphorae are present at Naukratis, but probably underrepresented within the corpus studied to date, because fragmentary indicator sherds are not always specifically identifiable.\textsuperscript{132}

The popular biconical Roman Amphora \textit{AE3} continued to be produced into the Byzantine period, in the form of variant \textit{AE3T} (Fig. 35). It is distinct from earlier forms by having a grooved neck with a collared rim, the bottom of the two short handles tends to point upwards and the base is shorter with a band around it. Produced from the late 3rd to the 7th or 8th centuries AD,\textsuperscript{133} these late variants are relatively rare at Naukratis.\textsuperscript{134}

From the late 6th century AD onwards a new form of bag amphora with looped double handles (\textit{AE5/6})\textsuperscript{135} became popular across Egypt, and is represented in small numbers at Naukratis (Fig. 36).\textsuperscript{136} This was an Egyptian imitation of Levantine imports (that had developed from the distinctive Phoenician/Levantine torpedo amphorae). As with examples found in Alexandria, the majority of examples from Naukratis were of early forms (variants of \textit{AE5/6-1}) that were made from calcareous marl clay with

\begin{itemize}
  \item \textsuperscript{128} Hart 1986, 220.
  \item \textsuperscript{129} Thomas 2011, 32.
  \item \textsuperscript{130} British Museum 1886.0401.1373.
  \item \textsuperscript{131} Accounting for 42\% of all commercial wine stamps found at Myos Hormos and very common elsewhere in the Eastern Desert (Thomas 2011, 37 examples; Thomas with Tomber 2006, 252-4, V114, V412, V152, V172, V242, V379, V637) and a further seven are known to the author from Berenike (Sundelin 1996, BE95-3184-Y038; Dieleman 1998, BE96-3664-Y019; Cashman, et al. 1999, BE97-1967-Y008; Bos and Helms 2000, BE98-4123-Y097; Bos 2007, BE99-1150-Y037, BE99-1149-Y024; Moulder 2007, BE00-1179-Y043).
  \item \textsuperscript{132} When working with the drawings and descriptions identification can be difficult for a number of reasons. The handles can be very simple and easily confused with those from other coarse or cook wares. The poor quality of the fabric means they do not preserve as well as earlier productions and the irregular rims can be conflated with contemporary utility ware.
  \item \textsuperscript{133} Bailey 1982; 1998; Tomber and Williams 2000; Peacock and Williams 1986 type 53; Egloff 1977, no. 172; Bailey 1998; Tomber and Williams 2000.
  \item \textsuperscript{134} Coulson 1996, 1799, see also 297 and possibly (simpler variant) 147.
  \item \textsuperscript{135} Commonly known as Late Roman Amphora 5 (LRA 5), following the Carthage typology, \textit{AE5/6} is preferred here because it specifically refers to the Egyptian copies of Palestinian Late Roman Amphora 5, preventing confusion over production place.
  \item \textsuperscript{136} Only at present from surface deposits from the new fieldwork at Naukratis (Thomas forthcoming, N16.13.2; N16.12.2; N121016.M01-3:18 N15A24.8).
\end{itemize}
abundant limestone inclusions in the Mareotis region and around Abu Mina during the late 6th century to the 8th or 9th centuries AD.

Locally produced Nile silt variants (AE5/6-2) are later in date, with production starting in the early 7th century and continuing into the 12th century. Whilst difficult to securely identify from the old excavations, these are represented within the survey material from the new British Museum fieldwork at Naukratis, with at least two examples (Fig. 36).

Nile silt amphorae variants AE7-1 and AE7-2, more commonly known as Late Roman Amphora 7, are represented within the Naukratis material. The chocolate brown Nile silt fabric was often distinctive from the coarse organic red-brown local Nile Delta silt fabric of AE5/6-2 and AE3 amphora variants, suggesting a Nile valley origin for many of these amphorae. The amphorae have a tubular neck with a simple rim and a long tapering ribbed body with a solid spike (Fig. 37). The sloping, rounded shoulder of (generally) earlier (late 4th to 7th century AD) AE7-1 is distinct from the sharply carinated shoulder and distinctive rilling of (generally) later (late 6th – 10th century AD) type AE7-2. Recent studies have questioned how clear a chronological distinction can be made between AE7-1 and AE7-2 which overlap significantly and are frequently found together. Whilst the round shoulder form AE7-1 was produced earlier, it may continue into the 8th century AD or even later. The wide variety of forms produced within the AE7 category over a long period may represent both regional and chronological distinctions that are still the subject of study and debate. The two roughly made loop- or strap-handles are not always distinctive or easily identifiable. However, the rare diagnostic fragments of AE7-2 are amongst the latest datable sherds from the site, with a very late Byzantine or early Islamic date. They were commonly found with other utility wares that are also known to extend into the 8th centuries or later.

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137 Dixneuf (2011) dates this variant to the period AD 625–750, and they were found alongside late Byzantine material in Alexandria (Tomber and Thomas 2011, nos. 87–9, see also Egloff 1972, 117–18, Kellia 186; Ballet 2000, 141–3; Majcherek 1992; Reynolds 2003, 731). AD 650–730 (Egloff 1977, 118, nos 187, 190). Produced in Térénouthia in the Delta dated mid-7th to the end of 8th or end of the 9th century (Ballet 2007, 158; Majcherek 1992, 110, AD 650–750; Tomber and Thomas 2011, no. 90).

138 Nothing distinctive of the 8th to 15th century AD has yet been identified at Naukratis (with the exception of a Fatimid stamp acquired by Petrie from nearby Nebireh). The Islamic burials excavated by Leonard on the South Mound were of a style characteristic of ‘possibly as late as the last half of the nineteenth century’ (Curtin, Hourston-Wright and Chisholm 1997, 326), yet C14 dates suggested (despite poor collagen preservation) dates of AD 1390+/- 164 and 1340+/- 202 years. It is now clear that these burials were within the burial area that was in use in 1848 when Petrie first discovered the site. We have no other evidence of occupation in the Naukratis area until the Ottoman period.

139 Thomas and Villing 2013, fig. 7; Thomas forthcoming, N121016.M01-3:18, N16.12.2.

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142 Coulson 1996, 102, 322, 1365, 44; Thomas forthcoming N16.13.16. Although the bases are diagnostic, the rims and handles are probably underrepresented. Also the highly diagnostic shoulder fragments were not kept by previous projects, who concentrated on indicator sherds (rims, handles and bases).

143 For full fabric description see Peacock and Williams (1986, 528).

144 On dating of AE7.1 and AE7.2 forms see Dixneuf (2011, AE7). The diagnostic shoulder was rarely collected during survey and so distinguishing between the early and late variants was rarely possible.


Byzantine amphorae are relatively common. Abu Mina/Mareotis marl AE5/6-1, and particularly the locally produced Nile silt and late AE5/6-2 forms were found in large numbers at Alexandria, but were less common at Naukratis. Locally produced AE7-1 and AE7-2 were also identified. AE5/6-2 and AE7-2 are both very late types that only just fit into the Byzantine period, the majority of their production extending into the early Islamic period, so it is possible that the Egyptian amphorae could be used to argue for continued occupation into the 8th century AD. However, this is not supported by other wares. Even if occupation continued into the 8th century, the material suggests a significant decline over this period. The combined evidence of all artefacts retrieved by Petrie, Gardner, Hogarth, Coulson, Leonard and the British Museum team, suggests that all assessable areas of the site declined markedly shortly after the Arab conquest of AD 641–3 and were then abandoned. Small pockets within this once great city may have continued to be occupied within the area of the modern villages that have been inaccessible to archaeological investigation.  

4.2 Byzantine imported amphorae

Byzantine–Egyptian wine amphorae (AE5/6 and AE7) were exported widely to Carthage and other Roman Mediterranean ports, 148 but also to Byzantium’s new Christian allies, the Nubian kingdoms of Dongola and Alwa and the Ethiopian kingdom of Axum, as well as being traded across the Indian Ocean.149 This busy export industry was matched by trade in the other direction. Egypt and specifically Naukratis received wine and oil represented by numerous imported amphorae fragments. By far the most common imported amphorae are Cilician or Cypriot, showing a continuation of the early and mid-Roman forms discussed above. The Byzantine Late Roman Amphora 1 (henceforth LRA 1) type is particularly prevalent,150 many being found during the new British Museum excavations at Naukratis.151

The Cilician and Cypriot LRA 1 amphorae (Fig. 38) became the most popular imported type from the late 4th century onwards at Naukratis, Mareotis and Alexandria.152 The LRA 1 category includes a range of vessels that developed between the 4th and the 7th centuries AD.153 They are characterized by rounded and folded or grooved handles, with ribbed bodies, 154 and include early155 and late forms.156 Late Roman amphorae kilns are known from Ayas in the west to Seleucie de Pierie in the east and kilns for LRA 1b (late form) have been identified in Cyprus.157 A Cypriot

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147 Excavations by Mohamed Ali-Hakim (pers. comm.) for the Supreme Council of Antiquities only revealed Late Period, Ptolemaic, Roman and Byzantine material.  
148 Peacock and Williams 1986.  
149 Tomber 2008.  
150 Specifically the variant LRA1b. Note an Egyptian copy, called AE8 (Dixneuf 2011, AE8), have not been found in Mareotis (Tomber and Thomas 2011) or Naukratis to date.  
151 Thomas and Villing 2013, fig. 7.  
152 Numerous examples illustrated by Coulson (1996, nos. 6b, 88, 100, 103, 148a, 236, 299, 300, 374, 553, 1805j, i, j, 1807a, b, 1043, 1792).  
155 LRA1a (early) variant dated late 4th to early 5th centuries AD (Tomber and Thomas 2011, no.145). Also known as Egloff 169 (Egloff 1977, 113, fig. 58.2).  
156 The standard LRA1b form is dated 5th to 7th century AD (Reynolds 2005, 565; Tomber and Thomas 2011 no. 146–9).  
production may explain the prevalence of Cypriot Red Slip ware at Naukratis, its hinterland, as well as Alexandria and the Mareotis region at this time.

Palestine was a major production region trading directly with Egypt during the early Byzantine period. Levantine amphorae known as Late Roman Amphora 4 (henceforth LRA 4) from Gaza and Late Roman Amphora 5 (henceforth LRA 5) produced across Palestine were both common imports to Egypt. They have a brown silty fabric with occasional sand, limestone and grey inclusions.

**LRA 4** are bag-shaped amphorae with loop handles, often characterized by the presence of clay accretions on the neck and shoulder. The form represented at Naukratis was produced between the 4th and mid-7th centuries AD. This early Byzantine form has a narrower body and base and combing on the body that distinguishes it from earlier prototypes. LRA 5 of the late 5th to 7th centuries AD are bag-shaped with an upright rim, ribbed body, looped handles and a broad base. LRA 4 was relatively common at Naukratis, but LRA 5 were has to date not yet been identified at Naukratis although Egyptian copies produced at Abu Mina or the Nile Delta (AE5/6) were common.

### 4.3 Byzantine amphora stoppers and a vessel-stamp

A single limestone vessel-stamp in the form of a disc, probably used for stamping amphora stopper sealings, was found at Naukratis. It is unusual because it has two sides. On one side it is incised with a Byzantine monogram, on the other with four crosses. The monogram is typical of those found on plaster and mud seals on wine amphora stoppers produced in the early Byzantine Period in Egypt. Similar cross and monogram motifs have been found in Byzantine sites in Western Thebes, Kellia and Clysma.

Six Byzantine amphora stopper sealings were discovered at Naukratis, with an additional one that is likely to be of that date, or slightly earlier. None of these stopper sealings were stamped with the limestone stamp found at Naukratis. They are all Egyptian plaster sealings that once covered organic bungs or plugs (since lost). Occasional marks were left by the impression of pull strings set to remove the stopper. Together the plaster sealing, plug or bung and removal string functioned as an amphora stopper. Such stoppers were commonly used on wine amphorae of the Byzantine period in Egypt (and North Africa), but rare examples have also been found in 1st or 2nd century AD contexts (when the types described

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156 Tomber and Thomas 2011, 59.
157 For full discussion of variants see Majcherek (1995, 168–9, Forms 2–4). Majcherek Forms 2 (late 5th through AD 535), 3–4 (late 5th to 7th century AD) and 4, (late 6th to 7th century AD) were identified in Mareotis (Tomber and Thomas 2011, nos. 154–157).
158 Reynolds 2005, 574; Tomber and Thomas 2011, no. 158.
160 Gardiner 1888, 87, pl.XX, Cairo, Egyptian Museum JE26762.
161 Thomas 2011, type 1; Thomas with Tomber 2006, type 1.
162 Winlock and Crum 1926, 80, fig. 33.1–2; Egloff 1977, pl. 20.3–7; Bruyère 1966, fig. 10.
163 British Museum 1885,1101.16; 1888,0712.44; 1989,0501.3; Cambridge NA733; Boston 88.673. Montreal 2489.
164 British Museum 1885,1101.17.
165 Thomas 2011, type 1; Thomas with Tomber 2006, type 1.
above were more common).\textsuperscript{168} The stamps, which depict Christian iconography, clearly place this group within the Byzantine period.

All stoppers were marked with a stamp, usually circular, filling the majority of the stopper's diameter. In one example a series of smaller stamps was used. All depict Christian symbols, including: the crucifix, Chi-Rho, monograms of St Michael and a donkey (Figs. 40–41). One has the Latin text Spes in Deo, or Hope in God.\textsuperscript{169} The other stoppers once had Greek inscriptions which are fragmentary or unreadable. Parallels for these devices stamped on stopper sealings are known from monastic and Christian communities from Kellia,\textsuperscript{170} Clyisma,\textsuperscript{171} Antinoupolis\textsuperscript{172} and Western Thebes.\textsuperscript{173} A wooden stamp with a simple circular cross, but without text, was found at Koptos.\textsuperscript{174} The stamped devices and inscriptions on the Naukratis stopper sealings and their parallels from monastic and Christian communities across Egypt, suggest that these finds concern the religious practices within the Naukratis Christian community which may have possessed a monastic component.

5. Amphora and the Naukratite economy

The different research strategies and collection biases\textsuperscript{175} of each fieldwork projects undertaken at Naukratis since its discovery have meant that the material available for us to study from each season have each produced very different patterns. For this reason a study of the Naukratite economy is difficult with the available data. We get very different answers when we compare the proportion of imported amphorae (to other ceramics) for the Ptolemaic (96%), Late Ptolemaic to Augustan (13%), Early Roman (15%) and Byzantine (79%) periods. This is partially because the data for each area and period was collected in a very different way. Ptolemaic Egyptian amphorae are underrepresented compared with the large number of stamped handles of imported Hellenistic amphorae collected by Petrie, Gardner and Hogarth. Clearly Rhodian, Koan, Brindisi, Knidian and Thasian\textsuperscript{176} amphorae were common, but are overrepresented because of their stamped Greek handles, in comparison with non-stamped amphorae.

The excavated Ptolemaic to early Roman\textsuperscript{177} levels of the South Mound and Kom Hadid provide much more accurate proportions for these areas. However, the South Mound is within the south-west corner of the sanctuary of Amun-Ra, and the upper levels of Kom Hadid comprise large quantities of kiln wasters, leading one to question how representative the

\textsuperscript{168} Thomas 2011, 19, type SC; Thomas with Tomber 2006, type 5.
\textsuperscript{169} British Museum 1989,0501.3.
\textsuperscript{170} Egloff 1977, pl. 20.3–7.
\textsuperscript{171} Bruyère 1966, fig. 10.
\textsuperscript{172} See stopper entries within O’Connell et. al. 2014, British Museum EAS3951–EAS3963; Fournet and Pier 2008.
\textsuperscript{173} Winlock and Crum 1926, 80, fig. 33.1–2.
\textsuperscript{174} Nachtergaele 2000, 289, fig. 23. See also British Museum EA 53951.
\textsuperscript{175} The choice of which locations to prioritise, the methods used to excavate and survey, and the selection of what material to collect and study, varied significantly.
\textsuperscript{176} To a lesser extent stamps from Miletos, Pamphylia, Samos, Chios, Korkyra, Corinthis and Cyprus.
\textsuperscript{177} The Roman levels were mainly Augustan through to 1st century AD.
assemblages from these small scale excavations could be. The material from these areas may not be an accurate representation of Late Ptolemaic or early Roman domestic assemblages, but instead represent a local bias determined by their proximity to kilns, or a temple.

The Byzantine amphorae are entirely from survey, but the high proportion of imported amphorae is partly due to the high visibility and durability of imported amphorae compared with the low durability and the difficulties faced when distinguishing Byzantine Egyptian amphorae from other coarse-wares. However, it remains likely that the overall pattern is accurate (if exaggerated by collection and preservation biases) if not precise. It is reasonable to expect a decline in the quantity and proportion of imported amphorae over the course of the Ptolemaic period as the settlement became less significant in comparison to its young neighbor Alexandria. Also the increase in imports over the course of the Byzantine period, particularly in the late 4th and the 5th centuries AD, is remarkably similar to the pattern experienced elsewhere in the north-western Delta and Alexandrian regions.178

The actual, or relative, volumes of liquid commodities imported into Naukratis cannot be easily quantified with the data available, yet the data available allows us to track the changing sources of wine and oil that were consumed at Naukratis. Hellenistic imports from Thasos, Knidos, Rhodes and Kos, were slowly replaced by Italian imports, particularly from Brindisi and later Campania. During the late Ptolemaic and Early Roman periods, demand for wine at Naukratis was served by increased local production at Naukratis and nearby settlements in the western Nile Delta and Alexandria. Nevertheless Italian imports (from Campania) continued, followed by those from Tripolitania. Over the course of the later 1st or 2nd through to the 4th centuries AD Cypriot and Cilician imports became increasingly important, eventually dominating imports by the later 4th and 5th centuries AD. At this time Palestinian, particularly Gazan, amphorae become popular and the forms themselves are copied locally.

The picture from the amphora stoppers broadly parallels the pattern of the amphorae, confirming that both local and imported produce was consumed at Naukratis. As with the amphora sherds, the stopper stamps are evidence for local production throughout the Ptolemaic period, which was also consumed locally. During the early Roman period, it seems wine was also coming into Naukratis from the Fayum. However the sample size is currently too small to calculate the full extent of reuse of amphorae at Naukratis, or to measure what proportion of wine and oil consumed at Naukratis was produced in the major Egyptian production centres of Mareotis and the Fayum.

178 Thomas 2014b; Thomas and Villing 2013.