Naukratis: Greeks in Egypt

Alexandra Villing, Marianne Bergeron, Giorgos Bourogiannis, Alan Johnston, François Leclère, Aurélia Masson and Ross Thomas

With Daniel von Recklinghausen, Jeffrey Spencer, Valerie Smallwood, Virginia Webb and Susan Woodford

http://www.britishmuseum.org/naukratis

Lamps in terracotta and bronze

Ross Thomas
1. Introduction

Lamps are well represented in the Naukratis material for two reasons: firstly, they survive well as they are compact and durable and in some instances were left in undisturbed contexts (burials, for example). Secondly, they were often collected by the early excavators because they had painted or moulded decoration and/or inscriptions. Their survival to the present day is another matter. Seventy-three known pieces thus far have not been located within museum collections and so only 264 of a recorded 337 examples can be included in this catalogue. This number of known lamps, moreover, is probably an underestimation as we know that Petrie found 280 lamps in his first season alone. Despite this the Naukratis assemblage is a useful one to understand the distribution of lamps over time and their changing use. Lamp typologies are not without their difficulties. However, we can benefit from the well-researched and catalogued Naukratis examples within the British Museum collection and refined typologies developed for Ptolemaic and Roman lamps based on the substantial earlier literature and the recent publication of new stratigraphic excavations.

1.1. Lamp use in Egypt

Oil lamps in ancient Egypt commonly used castor, sesame and linseed oil for fuel, with wicks made from "the pith of rushes; castor plant fibres, linen cloth or reeds". In the New Kingdom, olive oil was a conspicuous royal or elite commodity imported from Greece for the lighting of lamps in temples, amongst other purposes. Despite the introduction of olive groves in c. 184–1153 BC, olive oil remained a resource for the elite during the late New Kingdom and Third Intermediate Period. It is uncertain to what degree lamp oil was affordable during the Late Period, but the range of lamp oils used (olive, castor, sesame and linseed oil) during the Ptolemaic and Roman periods were certainly affordable enough by the Roman period.

Lamps have an obvious function, but this does not mean that they did not carry additional meaning in certain circumstances and contexts. Lamps...
were found in houses (Fig. 1), but also associated with religious practices in burials and Greek sanctuaries (Fig. 2). They also often depict religious motifs. Even in ‘domestic’ contexts, lamps may have had some religious meaning or ritual function. The precise roles that ancient lamps played within their complicated use-lives are difficult to distinguish. The actions undertaken with lamps and the meanings applied to them were varied and context specific. Lamps were employed in various rituals in the house, sanctuary and cemetery. They featured in religious and ‘magical’ rituals. The meaning, significance and use of lamps for less tangible functions are hinted at in ancient texts, supplemented by details from archaeological contexts and iconography (Figs 3 and 4) represented on these objects. According to Herodotus,

“On a certain night they all kindle lamps many in number in the open air round about the houses; now the lamps are saucers full of salt and oil mixed, and the wick floats by itself on the surface, and this burns during the whole night; and to the festival is given the name Lychnokia (the lighting of lamps). Moreover those of the Egyptians who have not come to this solemn assembly observe the night of the festival and themselves also light lamps all of them, and thus not in Sais alone are they lighted, but over all Egypt: and as to the reason why light and honour are allotted to this night, about this there is a sacred story told.”

The public festival of the lamps to which Herodotus refers here, the lychnokia/lychnapsia, may be an event celebrating the birthdays of Isis or Horus (in August), or the rites of Osiris (in December), which are all known to have included lamp ceremonies. Lamp-lighting ceremonies continued to have ritual, symbolic and functional purposes into the Byzantine period.

The use of lamps in divination spells for the oracular consultation of Egyptian priests is attested since the Ramesside period, when lamps were important components in rituals, called ϕή-ANTLR, particularly those concerning divination (‘magic spells’); such practices also played a part in officially sanctioned tribunals for justice. Following the diversification and compilation of older ‘magical’ or ‘ritual’ knowledge throughout the Roman and Byzantine periods in Egypt, lamps appear in numerous spells in both Greek and Demotic, and were particularly popular in what modern scholars would call ‘vessel divination spells’, but also business spells.

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12 Usually, as with other finds groups from Naukratis, individual objects rarely had contextual information recorded. Many were probably acquired without an archaeological provenance.
13 The term ‘magic’ is problematic as it is a judgmental label used to distinguish disapproved religious practices from official religion. ‘Magic’ is, however, commonly applied to a variety of ‘spells, formulae, hymns and rituals’ that have an Egyptian pagan origin. These texts should be recognized as a normal part of Egyptian pagan (and early Christian) life (Betz 1986, xli).
14 Lamps were an important ingredient of many Egyptian ‘magic’ spells of the Roman and early Byzantine periods (Griffith and Thompson 1904, 44–5; Petrie 1904, 12; Betz 1986, 336).
15 Herodotus 6.22; see Griffith 1996.
16 Podvin 2011.
17 This practice was reported (c. AD 332–466) by St Shenouta (Leipoldt 1903, 176).
19 Griffith and Thompson 1904, 21, 44–5, 65, 73, 119; Petrie 1904; Ritner 1993, 79, 147, 156, 215, 224, 215. A variety of spells include the use of lamps (PDM XIV.475–88; PDM XIV.1063–69; Betz 1986). These are particularly well attested in the 3rd century AD (PDM XIV 150–231; Betz 1986), 4th century AD (PGM III.1–164) and 4th–5th century AD (PGM I.42–195; Betz 1986).
20 3rd–4th century AD divination spells (PGM VII.359–69; see also PGM VII.540–78; Betz 1986).
and love spells. These Greek 'magical' papyri concern known deities, such as Harpokrates, Bes, Hermes, Anubis and Osiris, but also Khons, Amon and a wider variety of Egyptian deities when written in Demotic. By the Roman period, it was common for the lamps used in certain 'magical spells' to be white in colour, untreated and often 'new'. A 4th- or 5th-century AD lamp spell for conjuring a daimon includes the use of the Egyptian word for 'frog' within the adjuration spoken to Helios as part of this spell. Frogs were commonly depicted on 4th-century AD white lamps from Naukratis (Fig. 4).

1.2. Lamp use in Greece

Lamps were used in classical antiquity within a wide variety of structures and contexts, but it is especially within sanctuaries that we have evidence for their large-scale employment. In the Greek world and in Cyprus a significant growth in the sophistication, scale and proliferation of forms and materials of lamps can be observed from the 7th century BC onwards. Finely made decorated and occasionally inscribed lamps were frequently dedicated in sanctuaries, from which they were regularly cleared to be deposited in bothroi along with other dedications. Large quantities of lamps were uncovered in some sanctuaries in East Greece, for example at Miletos, Knidos and Halicarnassos, more modest yet still substantial numbers were found at Naukratis.

The integral role of lamps in the cults of the gods meant that new forms were developed for specific use within Greek sanctuaries, such as multiple nozzle 'sanctuary lamps' (Fig. 5). Lamps were integral to a variety of different ritual practices: as a votive gift to the gods for use during specific rituals such as sacrifices, during oath taking, ritual meals and nocturnal feasts. The important role of lamps in funerary rituals meant that they became a significant part of the furniture of burials, something also seen at Naukratis.

2. Production

The lamps from Naukratis are made from different materials using a variety of technologies and techniques, and are of obviously contrasting types and origins. As Herodotus highlights, Egyptian lamps were usually simple, shallow shells, with stone dishes also being used. However, the majority of lamps from Naukratis is imported and of 'Greek' type.

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26. 4th century AD business spell (PGM IV.2359–72; Betz 1986).
27. Love spells, for example to appear in someone’s dreams (PGM VII.407–10, 594; PGM LXII.1–24, see also PDM XIV.1063–69; Betz 1986).
28. Griffith and Thompson 1904, 44–5; Petrie 1904, 13; Ritner 1993, 224, 79; PGM I.277; PGM I.293; PGM II.57; PGM IV.2372; PGM IV.3191; PGM VII.542; PGM VII.594; PGM VIII.87; PGM XII.27; PGM XII.131; PGM LXII.1; Betz 1986. However, one spell specifies a lamp for ‘daily use’ (PGM VII.407–10; Betz 1986).
32. Petrie 1886a, 45, pl. 44; Gardner 1888, 48; Hogarth 1898–9, 30, 55.

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In the Late Period, finds include wheel-made lamps and versions of Greek lamps made of a Nile silt fabric consistent with local production. Even though we have no absolutely secure evidence as to their place of manufacture for this early period, the find of a Greek-style lamp made of Nile silt clay with a pre-firing dedication to the Dioskouroi makes it almost certain that lamps were produced locally at Naukratis at least from the 6th century BC onwards (Fig. 19).\(^{31}\) For later periods a small number of lamp moulds have been found: three are of Ptolemaic date, ranging from the late 3rd to the 1st century BC (Figs 6–8)\(^ {32} \) and one is of a later Roman ‘frog lamp’ type dated to the 2nd to 4th century AD (Fig. 9).\(^ {33} \) Unfortunately we do not know precisely where they were found. However, all lamp moulds are from the first season of excavation, during which an area of workshops (Site 95) and numerous pottery kilns in an industrial area in north-eastern Naukratis were excavated. This industrial area is the most likely origin for these pieces.\(^ {34} \)

The vast majority of extant lamps of Naukratis are made of clay (337): just a few Roman examples are made of bronze (6) with one possible stone example.\(^ {35} \) The pottery lamps can be broadly divided into two groups based upon the technique used, wheel and mould-made, which is also chronologically significant. These groups can be further broken down into broad categories, each with numerous variants. The forms represent different origins, periods, technologies and uses. Generally, the earlier wheel-made assemblage consists almost entirely of imports until the beginning of the Ptolemaic Period when Ptolemaic and Roman mould-made examples were largely locally produced, if not in Naukratis itself then in Lower Egypt.\(^ {36} \)

### 3. Wheel-made lamps

The earliest lamps from Naukratis were fashioned on a potter’s wheel, probably by potters who also produced vessels from the same or similar materials, using the same paints or slips and firing their products in the same kilns.\(^ {37} \) The wheel-made lamps vary greatly in form and complexity; they can be divided into groups depending upon their origin and date, and subdivided further by their distinctive regional and chronological styles. Wheel-made lamps are outlined and discussed below as follows:

#### 3.1 Archaic (local and imported) saucer lamps (also known as ‘floating wick’ lamps)

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\(^{31}\) British Museum, 1900,0214.18. Recent scientific analysis (by M. Spataro, British Museum, publication in preparation) of Naukratite terracottas and pottery revealed differences between the techniques used to produce coarse and fine ware pottery and figures in Naukratis at different times. Thin section analysis also suggests subtle differences between Naukratis and Memphite production.

\(^{32}\) Museum of Fine Arts, Boston, 88.907; RES.87.234; Castle Museum, Nottingham, NCM 1888-56.  

\(^{33}\) British Museum, 1886,0401.1366.  

\(^{34}\) Where terracotta figure moulds were also found (see chapter on Ptolemaic and Roman figures, models and coffin-fittings).  

\(^{35}\) A single lamp of lapis lazuli from Naukratis (University of Pennsylvania Museum of Archaeology & Anthropology E19) is attested but cannot presently be located.  

\(^{36}\) At Buto ‘lampes coupelles’ (wheel-made red-slipped lamps) are known to continue into the mid Ptolemaic period (Ballet pers. comm). For Alexandrian parallels see also Georges 2001; 2003a; 2003b; Chrzanowski et al. 2011.  

\(^{37}\) Bailey 1975, 3; Schlotzhauer 2012, 60–1.
3.2 Multiple wick sanctuary lamps
3.3 Archaic Greek wheel-made lamps
3.4 Classical Greek (mostly) ‘black glazed’ wheel-made lamps
3.5 Greek-style wheel-made lamps made in Egypt

Most of the wheel-made lamps were brought to Naukratis between the late 7th and the mid-4th centuries BC from Cyprus, East Greece and Athens. Locally made lamps comprise simple saucer lamps as well as wheel-made lamps.

3.1. Wheel-made saucer lamps

The earliest wheel-made lamps from Naukratis are simple saucer lamps imported from Cyprus or the Levant, sometimes called ‘cocked-hat’ lamps, with a single (Fig. 10) or (rarely) double pinched nozzle (Fig. 11), producing a rest for the wick. In Cyprus, as in the Levant, these were used until the early Hellenistic period. The Naukratis examples have parallels dated c. 620–450 BC and they were found in Saite levels within the sanctuary of Apollo.

There is limited evidence for the local production of such lamps during the Late Period in Naukratis. The Egyptian tradition of using simple and sometimes re-used and modified dishes or bowls as floating wick lamps meant that lamps were often not recognized or collected by the early excavators of Naukratis and as a result are poorly represented within the assemblage. Nevertheless, the extant assemblage includes a reasonable number of saucer lamps (21) that were made quite possibly at Naukratis of the local coarse and organic Nile silt fabric that Petrie called ‘late style pottery ware’ (Fig. 12). The simple form seems to replicate the Cypro-Phoenician imports. The coarse and crude nature of these lamps suggest they were rapidly produced and presumably cheap to purchase. Parallels are known from Alexandria and Tell Atrib in the Ptolemaic period, c.

38 The fabric of these imported lamps is a pale yellow calcaric marl clay, with very fine dark inclusions. This is probably Cypriot, but this is not certain without thin section or NAA analysis. As many of these pieces are complete, no fresh break could be assessed.
39 Hellmann 1987, nos 1–3.
40 Bailey 1975, 207. Indeed elsewhere they continue into later periods, but this is unlikely to be the case in Naukratis.
41 Parallels from Cyprus (Bailey 1975, Q486–Q493) and Tell en-Nasbeh (Wampler 1947, pl. 71; Brody 2010, Badé Museum, Berkeley, B2009110).
42 Late Saite context A17 (Petrie 1886a, 45, pl. 44), c. 550–525 BC. Petrie elsewhere states that these are not early as they are not found in ‘early strata’ and of ‘the later style potter’ (Petrie 1886a, 45), by which he probably means the local Nile silt versions which are later and should not be conflated with the Cypro-Phoenician imports. Petrie found 32 ‘pinched’ or ‘cocked hat’ saucer lamps of this type. His description of the red-brown fabric suggests these were all of the later local production, which he also noticed within his stratigraphy (Petrie 1886a, 45).
43 Herodotus 6.22; Griffith 1996, see above. Simple coarseware bowls used as lamps are unlikely to have been collected by the early excavators of Naukratis. Their existence at the site is however confirmed by recent excavations at Naukratis (Thomas and Villing forthcoming).
44 The typical light, organic, low-fired and fragile coarseware Nile silt fabric used for cooking and storage vessels in the late period and early Ptolemaic period in the Nile Delta. Despite their prevalence in earlier periods, such coarse wares were frequently assumed to be late (i.e. Ptolemaic, see the chapter on Egyptian Late Period pottery). However, in this instance Petrie is likely to be correct as these forms were not found in early levels of the town and not in sanctuary contexts (Petrie 1886a, 45).
45 Bailey 1975, Q515 and Q516. Parallels from late 4th to early 3rd century BC graves in the Hadra cemetery, Alexandria (Brecchia 1912, pl.57, 129; Adriani 1934, pl. 13, 2; 1940, pl.31, 2; 1952, pl.4, 2; Bailey 1975, 244) and from late 4th or 3rd century BC Alexandria (Blondé 1998, 324–5, no. 21) and late 4th to 3rd century BC parallel from Tell Atrib (Mynarczyk 2012, type TA 1.1).
350/332–225 BC. At Naukratis, Egyptian saucer lamps have been found in domestic contexts, including contexts dating to the early Ptolemaic period. However, pieces excavated by Hogarth, but without find-spot information recorded, may also have come from the cemetery. They predate the mass production of mould-made lamps in Egypt from the 3rd century BC onwards, although they did not entirely replace wheel-made lamps in the Nile Delta.

### 3.2. Wheel-made ‘sanctuary’ lamps

‘Sanctuary’ lamps (also known as wreath, corona, ring sanctuary lamps or polycandela) are wheel-made, ring-shaped lamps with multiple nozzles. They are commonly called sanctuary lamps because they are often found in sanctuaries and presumably (if not exclusively) had a ritual function. At Naukratis, a variety of examples of this type have been found, attributed to possible Samian manufacture. Similar sanctuary lamps have also been found at Athens, in the sanctuary of Hemithea at Kastabos, and the sanctuary of Demeter at Knossos. Most of the Naukratis examples come from the sanctuary of Aphrodite from deposits that cannot be dated any more specifically than 620–525 BC. Their forms suggest a date of c. 600–575 BC on the basis of parallels. Bailey originally classified two different fabric types represented within the corpus of sanctuary lamps, which he attributed to Rhodes and Ephesos (or South Ionia) on the basis of comparisons with known parallels found on Rhodes. However, the presumed Rhodian examples have since been identified as of South Ionian manufacture. Three examples have no find-spot information and two of them are local Egyptian versions of sanctuary lamps.

### 3.3. Wheel-made Greek lamps

Archaic Greek wheel-made bridged nozzle lamps were an early 6th century BC Greek innovation, often featuring a central tube or nipple, described by Petrie as ‘tube’ (Fig. 16) or ‘pivot lamps’ (Fig. 17).

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46 Bailey 1975, 244–6; Petrie 1886a, 45; Coulson 1996, 139, pl. XVI–2; Leonard 2001, 173. Unprovenanced pieces from both Petrie’s and Hogarth’s seasons may also have come from houses, though this is not certain as they were found in the seabakh (Egyptian Museum, Cairo, JE33573.1), were acquired or simply have no find-spot listed (British Museum, 1886.0401.1353; Ashmolean Museum, Oxford, AN1896-1908-G.1051).
47 McLean Museum & Art Gallery, Greenock, 1987.381; The World of Glass, St Helens, 1899.11.10; Castle Museum, Nottingham, NCM 1888–60.
48 Hamilton 2004, Type 3; Howland 1958 Type 41; Halim 1993.
50 Howland 1958, Type 143.
51 Howland 1968, Type 143.
52 Cook and Plommer 1966, 55–6, pl. 9.
54 Gardner 1888, 48. See the chapter on Cypriot figures.
56 Fine orange-red fabric with very fine mica and white inclusions attributed by Bailey to Ephesos (Bailey 1975, Q152) and a fine orange-brown fabric with very fine mica, grey and white inclusions attributed by Bailey to Rhodes (Bailey 1975, Q366), but subsequently identified as from Asia Minor or Samos by Hughes (1988, 483).
57 Hüblinger 1993, 27, no. 26, pl. 3, 26; Hermanns 2004, 70–2, pl. 11; Hughes in Bailey 1988, 474–6; 482; Bailey 1975, 166–8, pls 74–5; Q 368; 76, Q 365–367; 369–70; Howland 1958, 128, Type 41; Robinson 1893, 238 no. Schlotzhauer 2011, 60–1, 118–19, no. 83, pl. 18c.
58 As two of these were found during Hogarth’s excavations, they probably came from the Hellenion.
59 Fitzwilliam Museum, Cambridge, GR.63.1887; Bristol City Art Gallery & Museum, H5018. Egyptian Museum, Cairo, JE3356 is of uncertain provenance.
60 Petrie found 6 ‘pivot lamps’ (Howland 1958, Types 12, 18, 20, 21) and 12 ‘tube lamps’ (Howland 1958, Types 9,11,12,17,19) in 1884–5 (Petrie 1886a, 45).
Numerous fine examples with painted bands were imported from Ionia have been found in Naukratis, particularly in the sanctuaries of Aphrodite and Apollo, and one was also found in the cemetery. There are no certain examples of these imported lamps being used within houses; whilst Petrie reported finding two in the town, they were found near a Greek sanctuary. A range of sources have been suggested for the variety of fabrics represented in this lamp type group, including Ephesos, Rhodes, Smyrna and unspecified Ionian or other East Greek production sites. A small number of Archaic Greek style lamps were also made locally in Naukratis and dedicated in the local sanctuaries.

3.4. Wheel-made ‘black-glazed’ lamps

A small number (13) of imported wheel-made, black ‘glazed’ Greek lamps dating to 525–250 BC have been found at Naukratis, mostly made in Athens. A range of forms made from a fine orange Attic fabric reached Naukratis during the 5th and early 4th centuries BC. Particularly frequent is the Attic Howland Type 25 lamp, which was also popular in Greece and in Cyprus.

3.5. Locally made Greek wheel-made lamps

There is limited evidence of locally produced versions of Archaic and Classical Greek lamps. Several extant examples (8) nevertheless indicate the existence of local workshops from the 6th century BC onwards that catered to local demand for Greek style lamps. As with the imports, local lamps also appear to have been dedicated at Greek sanctuaries, specifically the sanctuary of Aphrodite and the Hellenion, with one example of the 6th century BC possessing a pre-firing Greek dedicatory inscription (Fig. 19). They were probably produced in the same workshops that also manufactured Greek style pottery from the early 6th century BC onwards.

From the beginning of the Macedonian period (332 BC) and through the Ptolemaic period the demand for Greek style objects was strong, and this...
is particularly obvious with lamps. A major change in Naukratis lamp production included the local manufacture of lamps in popular late Classical (Attic) Greek lamp forms (specifically the Howland Type 25). These ring-shaped wheel-made lamps with a flattened globular body and concentric grooves around the filling hole possess no ornamentation other than a slab and feature a simple long, straight-sided nozzle with a flat top. The local Nile silt fabric closely resembles that used for contemporary, locally produced Naukratite tableware, suggesting the clay selection, processing and firing techniques and technology were the same. As with the tablewares, these lamps were coated with a good quality red (Fig.20) or black slip (Fig. 21), attempting to replicate the Attic black ‘glaze’. It is likely that the lamps were produced by the same potters producing the echinus bowls and fishplates that started to become fashionable at Naukratis at this time; their production probably overlapped with that of the locally made saucer lamps (discussed above). However, the greater quality and time taken to produce ‘Howland Type 25’ lamps, suggest that they would have been less cheap and more desirable than the saucer lamps. These were used in the town and placed in graves within the Hellenistic cemetery.⁷²

4. Mould-made lamps

The introduction of mould-made lamp production to Naukratis was a significant innovation of the mid-3rd century BC in Naukratis, although it was not copied everywhere in Egypt. Mould-made lamps rapidly eclipsed and replaced wheel-made types in the 3rd century BC. As these were mostly locally produced in Egypt, the typological subdivisions made below are based not upon provenance, but on subject matter, decoration, material or form that are distinctive of chronological styles. The main groups are outlined and discussed below as follows:

4.1 Ptolemaic mould-made lamps
4.2 Figurative lamps
4.3 Roman style discus lamps (mostly Egyptian made)
4.4 ‘Frog lamp’ types
4.5 Byzantine lamps
4.6 Bronze lamps⁷³

Mould-made pottery lamps were usually made of organic locally available Nile silt fabric, thin walled and low-fired in either an oxidizing (for red slip) or reducing (for black slip) atmosphere. This new technique involved the use of two (or more) piece plaster (or occasionally ceramic) moulds. This enabled the rapid and easy production of more ornately decorated lamps as it did with the products of related ceramics and coroplastics industries. The switch to mould-made lamp production followed a similar switch in related industries, notably the mass production of mould-made terracotta lamps.

⁷² One fragment was found near Kom Hadid (Coulson 1996, 139, pl. XVI.3). The rest do not have recorded find-spot information, but some complete examples found during Gardner’s excavations probably came from the early Hellenistic graves he excavated in 1885–6, which commonly contained red and black slipped lamps (Gardner 1888, 26, 29).
⁷³ The few surviving bronze lamps are treated here alongside contemporary pottery lamps for comparative reasons.
figures and the introduction of entirely new artefact types for Egypt, such as portable stoves, coffin-fittings and relief-ware pottery in the early Ptolemaic period. All these industries may have been based within the same workshops.

No Ptolemaic or Roman lamps are known to have been found within the Greek and Egyptian sanctuaries of Naukratis; they were, however, found in greater numbers within the town and the cemetery than in previous or later periods at Naukratis.

4.1. Mould-made Ptolemaic lamps

The first mould-made lamps produced at Naukratis in c. 250–150 BC copied wheel-made forms of Howland Type 25 (Fig. 22). However, by the end of the 3rd century BC the flexibility of this method allowed for lamp forms to become more elaborate, to be produced in forms previously only possible with cast bronze and to take on highly decorated forms depicting geometric and vegetal motifs. These included decorated variants of ‘shouldered’ (Fig. 23), ‘dolphin’ (Fig. 24) and ‘round body’ (Fig. 25) lamps that rapidly replaced wheel-made lamps at Naukratis (with the exception of the occasional import). Finds of moulds (in terracotta and plaster) used for Ptolemaic lamp production in Naukratis attest local manufacture from c. 250 BC onwards, although local production was probably already operating before. With the mass production came variation of quality in fabric, finishing and decoration. The fabric became coarser and more similar to the mass-produced terracotta figures, models and fittings of that time. By the late Ptolemaic period, poor quality mass-produced undecorated lamps were produced alongside finer examples.

Hellenistic moulded lamps continued to be manufactured with variations in ‘loop’ and ‘radiate’ decoration into the Roman period (called ‘neo-Hellenistic’ types). Over time they became simpler and cruder, with a weak matt red wash.

4.2. Mould-made Ptolemaic figure, head and hanging lamps

A significant innovation of the 2nd century BC was the production of figurative lamps with plastic Egyptian subjects (usually Egyptian deities), but in a Greek style, following closely the production of terracotta figures of the mid to late Ptolemaic period and into the Augustan period of the 2nd and 1st centuries BC. In many examples the lamp is in the form of the

74 See the chapters on Ptolemaic and Roman figures, models and coffin-fittings, Portable stoves and braziers and the forthcoming chapter on Ptolemaic and Roman pottery.
76 Gardner 1888, 26, 29.
77 Castle Museum, Nottingham, NCM 1888–54; Birmingham City Museum & Art Gallery 963A17; McLean Museum & Art Gallery, Greencrook, 1897.291.
78 Petrie 1904, Class S, 8, pl. 59.
79 A single shoulder (Petrie 1904, Class V, 8–9, pl. 60).
80 In which category Petrie includes a range of Ptolemaic and Roman forms (Petrie 1904, Class O, 8, pl.59). Late Ptolemaic lamps have a ‘shouldered’ form (Fig. 25).
81 ‘Shouldered lamp’ mould, c. 250–50 BC (Museum of Fine Arts, Boston, 88.907). Almost all lamps were made of the local organic red-brown Nile silt fabric.
82 Simple ‘round body’ lamp moulds dated to the 3rd to 1st century BC (Museum of Fine Arts, Boston, RES.87.234) and 1st century BC (Castle Museum, Nottingham, NCM 1888–56).
83 A variety of forms were grouped together by Petrie under the decorative motifs of loops by the nozzle and radiate patterns or wreaths around the filling hole (Petrie 1904, 7–9, Classes W, L and U, pls 57–8, 61). A related group Petrie labelled ‘echinus’ lamps (lamps that resemble sea urchins, Petrie 1904, Class K,8, pl. 58).
head of a deity, a mythological character or a theatre mask; such lamps are often called ‘head lamps’ (Fig. 26).84 Their growing confidence and the flexibility afforded by the new techniques led coroplasts to produce increasingly intricate and elaborate figured designs (Fig. 27), or to copy metal forms,85 such as hanging moulded lamps in the form of people, deities or animals.

Complicated lamp forms were almost certainly made locally at Naukratis,86 as most lamps dating to the Ptolemaic period appear to have been produced in the local organic Nile silt fabric. This fabric is more similar to the fabric used for terracotta figures, models and coffin-fittings than to that of contemporary wheel-made pottery production. The productions are so similar in technique, style and fabric that it is often difficult to distinguish between lamp and figure fragments unless the mould series is known.87

Head and figure lamps were clearly popular and this popularity may relate to three features that these lamps combined for the first time. Firstly, they are novel in incorporating the function of a lamp with popular cultural and religious imagery borrowed from other less ‘functional’ media (figurines), possibly increasing the suitability of such lamps to be used in a variety of contexts (funerary, dedication, ritual or ‘magic’). Secondly, they copy lamp forms previously only produced in more valuable metal (bronze and iron). Finally, the technique of moulding made it possible to produce them relatively cheaply and quickly to meet demand. There is some evidence that a broader audience used such lamps for specific roles in religious or ritual contexts. A number of figure lamps were found in the cemetery,88 whilst others were probably votives or used in domestic religion.

4.3. Roman style mould-made discus lamps

With Roman influence came new fashions, namely the single and multiple nozzle red-slipped ‘discus lamps’ (Fig. 29). Also known as ‘Roman relief lamps’, which Petrie divided into ‘delta’ (Fig. 31)89, ‘Classical’90 and ‘multiple lamps’ (Fig. 30),91 these feature a moulded decorated discus, following Roman designs. They are carefully crafted, with fine detail, and from more finely prepared Nile silt fabrics and slips92. The fine early examples of the 1st century AD had a major production centre at Alexandria (and probably others in Lower Egypt), where there was

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84 Petrie 1904, 7, Class H, pl. 55. Petrie conflates both Ptolemaic forms and much later Roman pieces (that in form resemble later ‘frog’ or ‘potato’ lamps) together in this broad class. For a discussion of a late variant of these ‘head lamps’ see the catalogue entry for Museum of Fine Arts, Boston, 11.45915.
85 Three pottery hanging lamps are known from Naukratis (Museum of Fine Arts, Boston, 86.474; McLean Museum & Art Gallery, Greenock, 1987.380; British Museum, 1886.0401.1377).
86 Whilst moulds are rarely preserved, a number of examples can be found from the same mould series at Naukratis (British Museum, 1886.0401.1377; McLean Museum & Art Gallery, Greenock, 1987.380). Plaster and ceramic moulds found at Naukratis were of other types.
87 One distinction is that the figurative lamps rarely had painted decoration, usually just a glossy red slip, whilst the figure were almost exclusively coated with a white gypsum based wash before added painted decoration. The moulded pottery used white paint or slip instead of gypsum wash.
88 Gardner 1889 26, 29.
89 Petrie 1904, Class D, 7, pls 54–5.
91 Petrie 1904, Class M, 7, pl. 57.
92 Knowles 2006, 311, Fabric D (Alexandrian or Nile Delta fabric), was rare in Mons Claudianus and commonly used for discus lamps, where the north of Egypt was more influenced by Roman fashions.
presumably a greater demand for Roman style lamps than in Upper Egypt.\textsuperscript{93} Discus lamps were probably made also at Naukratis, despite the absence of moulds of this type attested there so far. The scenes represented on the discus cover a similar figurative repertoire to that of late Ptolemaic period figure lamps and terracotta figures, including representations of Serapis, Isis, Harpokrates and Sothis (amongst others)\textsuperscript{94} but also subjects found on Italian lamps such as lions or the mythological character Scylla\textsuperscript{95} (Fig. 29). Delta lamps have a triangular handle (in plan), which is frequently decorated with palmette design or occasionally the depiction of an Egyptian deity (Fig. 31). Imported Roman lamps are rare in Egypt, though a Knidian example is known.\textsuperscript{96}

4.4. Roman mould-made ‘frog lamps’

The Roman period figurative lamps and neo-Hellenistic types were replaced across Egypt over the course of the late 1st, 2nd and 3rd centuries AD by formless ‘potato lamps’\textsuperscript{97}, and crude ‘frog lamps’ (Fig. 32),\textsuperscript{98} with their abstract iconography representing frogs and/or wheat (Fig. 33), possibly a reference to the fertility of the Nile inundation. The ‘frog type’ in fact encompasses a range of forms with different production centres. Knowles has argued that it represents an indigenous and traditional predominantly Upper Egyptian type that is distinct from the Lower Egyptian copies of Roman style discus lamps.\textsuperscript{99} This dichotomy can be shown to be false by the finding of a mould which confirms that frog lamps were certainly made in (Lower Egyptian) Naukratis. Also, whilst the iconography of these ‘indigenous’ lamp types refers to Egyptian religious imagery, the lamps are in fact later variants of neo-Hellenistic and figure lamp forms and not part of an older tradition. Indeed, the majority of ‘frog lamps’ post-date the discus lamps found at Naukratis.

The refined typology\textsuperscript{100} and detailed characterization of the fabrics developed by Knowles on the basis of finds at Mons Claudianus has been applied to the relevant Naukratis catalogue entries, as many of the forms and fabrics published by Knowles are also present at Naukratis. Knowles’ fabric analysis revealed four main fabric groups:

A. Nile silt from Upper Egypt. Distinct from pottery production.
B. Marl from ‘Upper Egypt’. Distinct from pottery production and common at Naukratis.
C. Fine Nile silt, or possibly a marl clay mixed with Nile silt from ‘Upper Egypt’, used to make frog lamps and common at Naukratis.
D. Alexandrian or Nile Delta fabric. Rare in Mons Claudianus, but common at Naukratis.

\textsuperscript{93} Hayes 1980, 2; Bailey 1988, 217–18; Knowles 2006, 311.
\textsuperscript{94} See Podvin (2011) for numerous illustrated examples and their wide dispersal across the Mediterranean.
\textsuperscript{95} British Museum, 1888.0601.143.
\textsuperscript{96} Ashmolean Museum, Oxford, AN1886.508.
\textsuperscript{97} ‘Boss lamps’ (Petrie 1904, Class B, 12, pl. 67).
\textsuperscript{99} Knowles 2006, 311.
\textsuperscript{100} This typology resolved a number of issues with the dating of Roman lamps using a refined stratigraphy dated with the help of papyri and ostraka.
All lamp fabrics identified during the excavations in Mons Claudianus were brought in from Upper or Lower Egypt. They were found to be distinct from the fabrics used to produce coarse, cooking or tableware pottery arriving from Alexandria, Lower and Upper Egypt, suggesting that lamps were instead produced in terracotta figure workshops. However, many of the lamp types (particularly the ‘frog lamps’) continued to be produced in the Christian era, long after terracotta figures had declined in popularity.

4.5. Byzantine mould-made ‘groove’ lamps

Developed out of earlier Roman forms, the Byzantine ‘groove lamps’ (Fig. 34) became the most popular form of the Byzantine period in Egypt. These mould-made lamps were decorated with Christian iconography, such as the crucifix and chi-rho or rosettes. These later Byzantine lamps are very poorly represented amongst the Naukratis material.

4.6. Bronze lamps and stands

A small number of bronze hanging lamps (Fig. 35) and lamp stands (Fig. 36) in copper alloy were found in Naukratis. The lamps are probably of Egyptian manufacture dated to the 1st or 2nd century AD, whilst the lamp stands have been dated to the 2nd to 3rd century AD. Scientific analysis of a lamp stand with a plate engraved with Bacchic features, including masks, thyrsi and a syrinx, revealed that despite modification two parts (the shaft and foot) had similar compositions of bronze.

101 Cooking, storage and amphorae productions.
102 Knowles based this argument upon comparison with the contemporary pottery found at Mons Claudianus (Tomber 2006; Knowles 2006, 316–20). Whilst the present author agrees with this interpretation, the absence of evidence (i.e. pottery produced in the same fabric as the lamps) is not evidence of absence (i.e. Mons Claudianus was externally provisioned and we are not aware of the full range of objects produced by any workshop that supplied this fort).
103 Petrie 1904, Classes G, X and Z, 9, 12, pls 61–2, 68. Already present in the 3rd century AD and continues into the 8th century AD.
104 Egyptian Museum, Cairo, JE33551, JE26805; Museum of Fine Arts, Boston, 88.776a–d. Examples from the Allard Pierson Museum, Amsterdam (8031, 8036; van Gulik 1940, 54), are of dubious provenance and attribution so have been excluded here.
105 British Museum, 1888.0601.5; Museum of Fine Arts, Boston, 88.776a–d; Bailey 1996a, Q3911. An example from the Allard Pierson Museum, Amsterdam (8032; van Gulik 1940, 54), is of dubious provenance and attribution so has not been included here.
106 Parallel from Tanis (Petrie 1885, 44; Coutts 1988, 93, no.72; Bailey 1996, 50, Q3719) and from the Fayum, dated 2nd or 1st century BC (Pagenstecher 1923, pl. XXXIV; Hayes 1984, no. 247). These metal lamp forms were also reproduced in pottery (British Museum, 1878,1109.33).
107 Bailey 1996, 100, Q3911. Parallels from Ballana and Qustul and in Cairo (Edgar 1904, 27797, 27796; Emery and Kirwan 1938, pl. 100).
5. The production and use of lamps in Naukratis

Lamps are known from all periods at Naukratis and are particularly well represented in the 6th century BC (notably as sanctuary lamp fragments). Lamps were common until the 2nd century AD, with a subsequent decline in lamp production and use in the 3rd century AD that became particularly noticeable after the 4th century AD.\(^{109}\) The Archaic and Classical Greek lamps come almost entirely from the sanctuaries, and the early Ptolemaic lamps from the cemetery. This distribution of lamps across different areas of Naukratis and over different periods is both informative and limited for three main reasons. Firstly, the assemblage is far from complete, with at least 73 pieces missing since excavation and registration by various museums. Secondly, few lamps have specific find-spot information recorded, even though find-spots can be inferred for groups of lamp types.\(^{110}\) Thirdly, the focus on sanctuaries and cemeteries represents a significant bias on the part of the excavators. Comparisons between periods are, moreover, difficult because the assemblages represent different deposition practices.

The diverse contexts within which lamps were found nevertheless clearly reveal ancient trends. They suggest changes in the way lamps were produced, used and deposited and show that in all periods lamps had numerous functions and meanings (religious, ritual, magical and utilitarian). The most obvious changes concern shifts in production origin (East Greek, mainland Greek and Cypriot to local), production technique (wheel-made to mould-made), deposition (within sanctuaries to graves and houses) and design (banded or slipped to motifs of Egyptian religious significance). The most obvious transformation is from the large proportion of imported 7th to 4th century BC lamps (in relation to the few locally produced lamps) to the large quantity and variety of almost exclusively Egyptian made lamps from the Ptolemaic period onwards. The same pattern can be recognized also in the terracotta and stone figures found at Naukratis and can be explained by the changing role of Naukratis from a major Mediterranean port welcoming Greek, Phoenician and Cypriot traders during the Late Period, to a regional and less internationally significant hub from the Ptolemaic period onwards.

Local demand may explain the increase in lamp consumption in the Ptolemaic period, though this is not simply related to population increase, but rather to changes in the way lamps were used. The increased number, variety and diversity of contexts within which lamps are now found represent changes in the Naukratis community’s perception of how to use lamps, the length of their use-lives and the specificity of use for particular forms or colours of lamp. Innovations in lamp production techniques may have influenced demand, particularly when this enabled or referenced other functions. For example, the production of mould-made lamps rapidly

\(^{109}\) Or retrieval by the archaeologists.
\(^{110}\) Some context is reconstructable from information recorded in the published works and the unpublished journals, letters and diaries of the excavators, in conjunction with information from museum registers concerning excavation and registration date.
developed from copies of wheel-made lamps to lamps with simple moulded decorative motifs and on to figure lamps that copied figurines used in domestic religion, as votive and burial offerings (see the chapter on Greek terracotta figures). This reference to ritual or religious practices meant that such lamps had additional meanings beyond that of simply supplying light, whilst the mass production enabled increased consumption, including making lamps more affordable to a wider population groups.

5.1. Lamp use in Late Period Naukratis

Wheel-made lamps of the late 7th to 3rd centuries BC from Naukratis include both foreign and locally produced lamps (Fig. 37). The majority are Cypro-Phoenician, East Greek and Athenian lamps that were presumably brought to Naukratis specifically for dedication or use as temple furniture within the Greek sanctuaries of Apollo, Aphrodite and the Hellenion. Whilst simple forms were dedicated and possibly used at sanctuaries from the 6th century BC until the 4th century BC, multi-nozzle lamps were imported from Ionia only during the early 6th century BC, perhaps for use in nighttime rituals. The small number (8) of extant lamps produced locally in Naukratis in an Archaic or Classical East Greek style (for dedication in the local sanctuaries) includes two fragments of such sanctuary lamps. The Archaic and Classical Greek style lamps were found concentrated within the Greek sanctuaries and there is no clear evidence that the Greek style lamps of this period were used in domestic areas of the site. Parallels from other Greek sites suggests this is not entirely due to a research bias of the early excavators, but a standard pattern recognized in Archaic Greek and Cypriot settlements where lamps are a more frequent occurrence in sanctuaries than in settlements.

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Figure 37 Date of lamp finds from Naukratis (centuries BC and AD). The distribution is separated by production origin: Greek (mainland and east), Cypriot and Egyptian. This is subdivided by construction technique categories: sanctuary, saucer, wheel-made (WM) and mould-made (MM) lamps.

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111 Such as the dedication of Kalli[ on a late 5th century BC Athenian lamp or the locally produced late 6th century BC lamp dedication to the Dioskouroi (British Museum, 1911.0606.21; 1900.0214.18 [=Fig. 19]).

112 Fitzwilliam Museum, Cambridge, GR.63.1887; Bristol City Art Gallery & Museum, H5018; Museum of Classical Archaeology, Cambridge, NA734.

113 See for example the finds at Archaic Miletos: Selesnow 1997, 137–8.
Simple Egyptian floating wick lamps are likely to be under-represented in the Naukratis assemblage as they were not collected by the excavators, and may not have even been identified as lamps as they can be simple (potentially re-used) bowls. However, some of the later pinched saucer lamps, which followed Cypro-Phoenician types, were collected; their fabric resembles that of local Naukratite coarseware pottery. These were found in domestic and sanctuary contexts.\(^\text{114}\)

### 5.2. Lamp use in Ptolemaic Naukratis

The Ptolemaic period presents a very different picture. Fragments of Ptolemaic lamps were found across the settlement within houses and domestic refuse,\(^\text{115}\) but many of the pieces now in museum collections are complete examples from the cemetery.\(^\text{116}\) As the majority of complete lamps come from the cemetery, and since the majority of graves excavated in the cemetery are Ptolemaic in date, the large quantities of 4th to 1st century BC lamps known from Naukratis (Fig. 37) is due to a degree to the focus of Gardner’s excavations in 1885–6. However, subsequent research in Naukratis has yielded large quantities of fragmentary Ptolemaic lamps and so there can be no doubt that production had increased, probably spurred on by local demand for Greek lamps, which may also have been the catalyst for the local production of Attic style (Howland Type 25) lamps in c. 330–250 BC. These lamps were made by potters who also manufactured fashionable Hellenistic style fine tablewares in Naukratis at this time.

Ptolemaic mould-made lamps were introduced in the 3rd century BC and are distinct in technique, design and fabric from wheel-made lamps and Ptolemaic pottery produced at Naukratis.\(^\text{117}\) They may instead have been manufactured in the same workshops as the contemporary terracotta figures, models, coffin-fittings, portable stoves and relief ware goblets.\(^\text{118}\) All these classes of artefact were constructed from the same coarse organic Nile silt with the help of plaster or ceramic moulds, and were slipped and painted using the same range of white, red and purple/black paint. Indeed, all these classes of object also feature similar representations of the same Egyptian deities, festivals, actors and theatre scenes. These popular decorative elements probably carried meaning in relation to the function of these objects, especially in relation to religious festivals surrounding the inundation festivals of Egypt (August–September). Lamps thus form part of a larger corpus of artefacts that feature decorative elements or representations relating to the seasonal

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\(^{114}\) Petrie 1886a, pl. 44.

\(^{115}\) Ptolemaic and Roman lamps were found across Naukratis during the excavations and surveys by Coulson and Leonard, the Supreme Council of Antiquities and the British Museum (Coulson 1996; Leonard 2001; Ali Hakim pers. comm.; Thomas and Villing 2013; forthcoming).

\(^{116}\) The large numbers of complete Ptolemaic lamps preserved from Gardner’s excavations, even when no find-spot was recorded in museum registers, are almost certainly from the cemetery (Gardner 1888, 26, 29). This is confirmed by Gardner’s box list for boxes 61 and 62 (Gardner Notebook 1885–6, 6.14).

\(^{117}\) These were probably made by potters specializing in fine table-ware pottery.

\(^{118}\) See the chapters on Ptolemaic and Roman figures, models and coffin-fittings, Portable stoves and braziers and the forthcoming chapter on Ptolemaic and Roman pottery.
calendar of this largely agrarian society. The rapid and easy production technique employed for mould-made lamps required less skilled workers and would have made such lamps cheaper to produce than the more complicated wheel-made forms (Howland Type 25 variants), while the ornate decoration at the same time (potentially) made them more desirable. Ptolemaic mould-made lamps were certainly produced and acquired in larger numbers and used in a wider variety of contexts (domestic, ritual, magic and funerary) than is apparent for lamps at earlier Naukratis.

Market demand for Greek style figures displaying the Graeco-Egyptian figure repertoire of religious iconography or symbolism and their diversified uses may explain the increased number of lamps found at Naukratis in this period, as is also the case at other contemporary Egyptian settlements. A genuine increase in the use of lamps in domestic contexts (even if used for religious or magical purposes) was possibly enabled by readily available and affordable lamp oil. The suitability of lamps for use in a variety of ritual and magic contexts was increased by the religious symbolism they now carried. The increased production and affordability of lamps may also explain their popularity as funerary furniture and other non-utilitarian purposes. As relatively cheap disposable objects, lamps were increasingly removed from circulation prematurely. This further explains the relative large number of lamps in the Ptolemaic and Roman periods, as production increased to respond to the increased demand. The majority of lamps found at Naukratis were not discarded because they were no longer functional, but because they were created and marketed to be disposed of as part of a specific ritual.

5.3. Roman and Byzantine lamp use

No find-spot information is recorded for the Roman or Byzantine period lamps from Naukratis. None were apparently found in the cemetery, yet many complete examples survive. Roman lamps are very well represented at Naukratis, particularly those of the 2nd century AD, and they attest the continued importance of Egyptian religious symbolism relating to fertility and the inundation long after the 3rd century AD decline of the temples that coincided with the economic and population downturn in Egypt. The popularity of these lamps was also contrary to the contemporary drop in the quantity and variety of figurine production and use that had already begun before the 2nd century AD. Frog lamps continued to be used and are well represented amongst the material of the 3rd and 4th centuries AD during the rise of Christianity, despite their association with pagan traditions and a general decline in the variety and quantity of other artefacts types found from this period at Naukratis. Their symbolism of wheat and frogs was perhaps suitably abstract for the early Christian community at Naukratis.
A significant reduction in the number of lamps produced and used can be observed at Byzantine Naukratis after the late 4th century AD. This cannot be explained simply as a decline in the population, as the distribution patterns for pottery is marked by an increase for the 5th–7th centuries following the decline of the 3rd–4th centuries AD. The lamp assemblage shows the opposite pattern, being well represented in the 3rd–4th century but followed by a decline in the 5th–7th centuries AD. This divergent pattern mostly likely reflects a change in the use of lamps. During the Ptolemaic and Roman periods lamps were used for a variety of ritual practices relating to Egyptian religious and magical practices. By the 5th century AD, the pagan rituals that required lamps which persisted elsewhere in the Byzantine Empire had ceased to be performed by the now largely Christian population of Naukratis, following the aggressive clamp down on all practices perceived (real, political or imagined) as pagan, deviant or magic, either in the household or in public. What followed was the reversion of the lamp to its primarily lighting function within the house, with the exception of *lychnapsia*, the lamp lighting ceremonies that continued to have ritual and symbolic meaning during vespers and were limited to churches. Instead of a Christian ‘decline’, the lamp assemblages from the Late Period, Ptolemaic and early Roman periods at Naukratis are disproportionally high as they represent not solely functional lighting instruments, but objects of devotion used for dedication, as burial furniture and ritual objects in religious or ‘magical’ rituals, loaded with complex meanings that we can today no longer fully comprehend.

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124 Thomas 2014a, 200–1, 218, fig. 13. See the forthcoming chapters on Ptolemaic and Roman pottery and Roman transport amphorae.

125 The placing of lamps in Christian burials continued in Cyprus (Munro and Tubbs 1890, 34 British Museum, 1967,1027.10 from Polis-tis-Chrysokhou tomb M3). The practice of dedicating lamps to nymphs at the ‘fountain of lamps’ in Corinth was also followed at the well of Abraham in Mamre, Judea. In Corinth and Mamre (with similar processes at the Bethesda pool in Jerusalem and Chonae/Colossae), nymphs were later reinterpreted as ‘angels’ by the Christian community who continued similar dedicatory practices involving lamps (Garnett 1975, 173–206; Jordan 1994, 223–9; Cline 2011, 115, 118–25, 133–6).

126 This practice was reported (AD c. 332–466) by St Shenouta (Leipoldt 1903, 176).

127 Being limited to churches, these would not leave such a large archaeological trace. The few complete Byzantine lamps may have been found by Petrie within the Christian ‘Coptic’ chapel on the casemate structure in the Great Temenos, though he did not discuss these remains in detail (Petrie 1886a, 34).