

Amphora Production in the Tripolitanian Gebel.

By P. Arthur¹

Abstract

The paper presents the results of an examination of two Roman kiln sites located by the late R. G. Goodchild, at Tazzoli and Ain Scersciara in the Gebel. They produced amphorae of forms Tripolitana I-III together with coarse wares and tiles. The material is described and illustrated, and the fabrics are examined petrologically as a guide to identification.

Olive oil was an important staple and prime export commodity throughout much of Roman North Africa (Camps-Fabrer 1953; Fentress 1979, 180–181, for a recent discussion in the Numidian context). It was especially so in Tripolitania, where there is abundant archaeological evidence in the form of olive presses (Cowper 1897, Myres and Evans 1899, Goodchild 1950, Oates 1953, *Tabula Imperii Romani*, Lepcis Magna Sheet, 1954). The scale of production is attested by sites such as Senam Semana, just to the west of Lepcis on the Wadi Turgut, where the remains of some seventeen olive presses are indicated (Cowper 1897, 279–282), and by textual evidence such as the instance of the massive annual *stipendium* of 3,000,000 pounds of oil imposed by Caesar on the city of Lepcis Magna for having supported Pompey (Haynes 1959, 34; Panella 1973, 569–570). However, it is only recently, with the

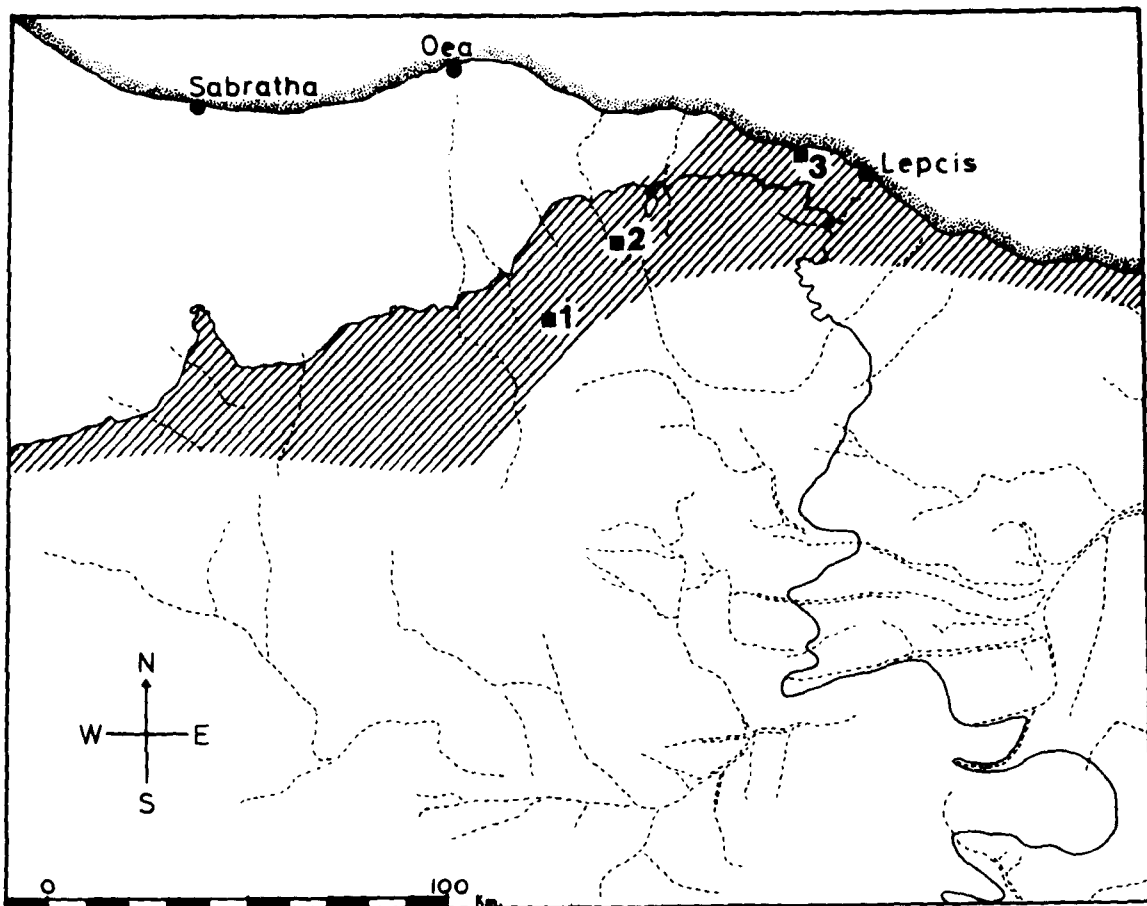


Figure 1. Location map showing the amphora kiln sites at Sidi-as-Sid (1), Ain Scersciara (2) and Homs (3) plotted on the main area of Roman olive cultivation according to Goodchild.

upsurge of interest in the use of amphorae as economic indicators, that the containers for this oil, the Tripolitanian amphorae, have been identified and their wide distribution throughout the Mediterranean recognised.

The evidence for their content and origin has been put forward by Panella in a number of papers (see especially Panella 1977). There is epigraphic evidence from two of these amphorae, found at Pompeii, which bear the *titulus pictus* 'shmn' which may be equated with the Punic word for oil. Indeed, it is also very similar to the modern Arabic 'samn' for ghee. Further evidence for their content is provided by an unpublished *titulus* on an amphora of the same general type seen by the writer in the museum storeroom at Lepcis Magna. The *titulus* on the shoulder of the vessel reads *SEX̄TL OLIVA* (if the stroke above the *X* is to be read as a ligatured *T*); this is probably to be interpreted as the contents – olive oil, preceded by the capacity – fifty (*L*) *sextarii*. Two possibilities present themselves: either the amphora was a half measure (although the capacity was not examined it appears to have been of 'normal' size, or the *L*, which tended towards the cursive, should be read as a *C*, thus making the measure 100 *sextarii*. Either way, there seems to be little doubt as to the original content.

The evidence for the Tripolitanian origin of the amphorae was based predominantly on their massive concentration in that province, although Panella (1977, 146) notes wasters found at Gargaesc near Tripoli and suggests that the amphorae may also have been produced at Ain Scersciara, Tazzoli and Homs (Fig. 1). Goodchild (1951, 96–99) was the first to examine the latter three sites, and although he did not publish the pottery, the two potter's stamps that he illustrated (see below) and his description of the finds as being 'almost exclusively thick-necked jugs' suggested that the main products of all three sites were amphorae. In November, 1978, the writer was able to visit the kiln site at Tazzoli (from here on called Sidi-as-Sid, following current terminology) and subsequently to examine the pottery from Ain Scersciara deposited in the Castle Museum, Tripoli.

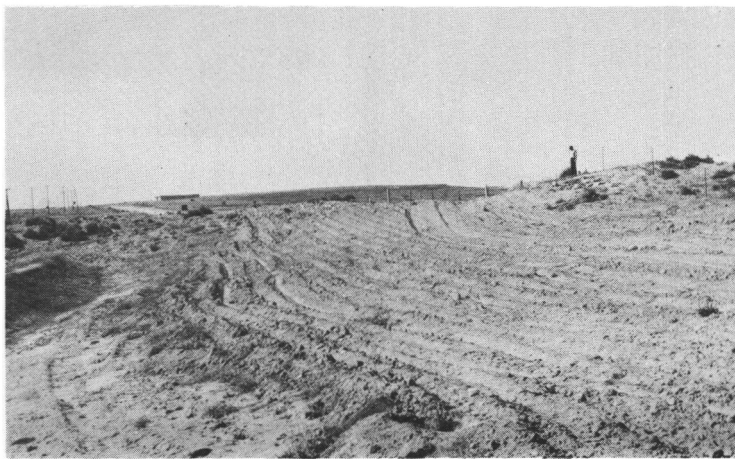


Figure 2. Sidi-as-Sid. General view of site looking to the north. The probable settling tank lies in the road cutting behind the figure.

Sidi-as-Sid (Tazzoli) kiln site.

The site lies some 5 kms. west of Tazzoli village on the Tazzoli-Ain Wif road and some 25 kms. to the south-west of Ain Scersciara (Grid ref. UR 5476 on sheet 1989 1, Sidi-as-Sid, series P761, produced by U.S. Army Map Service). It is on a high point just to the west of the Wadi el-Kadra and some 800 m. to the east of a Roman cistern at Magen Burnia. Four main mounds are visible, the northernmost of which is cut by the road, lying within an area roughly 70 by 90 m. (Fig. 2). Even though Goodchild saw no structures, a feature is now visible in the north section of the mound cut by the road (Figs. 3 and 4. The ground level indicated on the sketch section is an approximation of the level prior to the dumping of the spoil from road

AMPHORA PRODUCTION IN THE TRIPOLITANIAN GEBEL



Figure 3. Sidi-as-Sid. Probable elutriation or settling tank. The ranging pole is one metre high.

construction). It consists of a mortar floor and walls bounded on either side by large stones. Slight cutting-back of the section revealed that the walls curved inwards and suggests that the feature was originally circular or elliptical. Beneath the floor and separated by a layer of brown soil was what appeared to be an earlier mortar floor of similar construction. In both cases the white mortar contained many small rounded pebbles of c. 10 cm, in diameter, whilst x-ray fluorescence analysis revealed that its brownish surface contained clay mineral components (aluminium, silicon and a smaller amount of titanium).

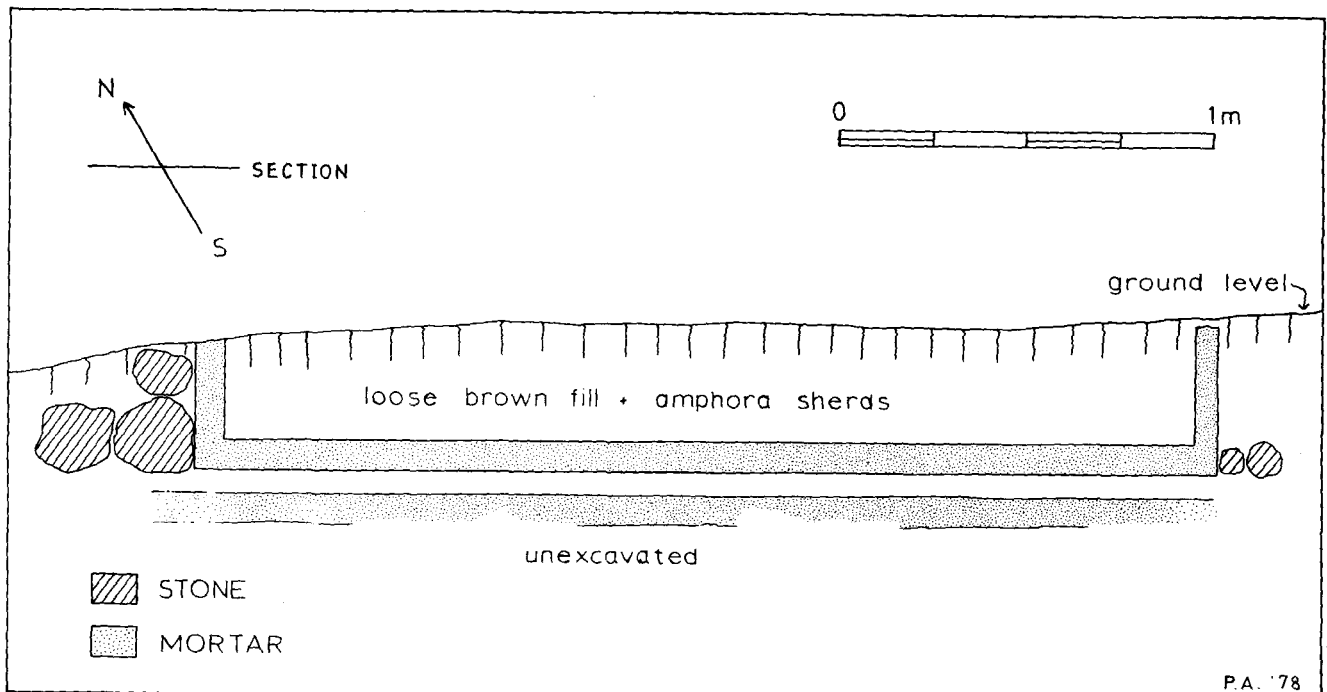


Figure 4. Sidi-as-Sid. Sketch section of probable elutriation or settling tank.

The rounded shape of the feature together with a possible diameter of 2.5 m. bears comparison to Goodchild's kilns and above all to the one discovered along the Tripoli-Homs road (Goodchild 1951, Fig. 38. It may now be destroyed by recent road works). However, the walls of both Goodchild's and Bartocchini's kilns were built of clay blocks, in contrast to the mortar and stone found at Sidi-as-Sid. A more likely interpretation could be that the Sidi-as-Sid structure was an elutriation or settling tank. The interior of the feature was filled with loose brown earth and numerous amphora sherds, which seems to represent an accumulation of kiln waste. Above the fill and the spoil from the modern road was found a sherd of African Red Slip form Hayes 62A (Hayes 1972, 107-110) which may be provisionally dated *c.* A.D. 350-425.

The three mounds neighbouring that cut by the road were large waster heaps (Fig. 2) containing numerous distorted and broken amphorae alongside fewer fragments of jars, bowls, lids and tiles. There was also half of a grey lava quernstone of a type common in Tripolitania, *c.* 350 cm. in diameter and 70 mm. thick. Its upper surface was flat, whilst its lower surface was rough and slightly convex. Wild (1973, 137) has already suggested that a similar rotary quern found on a Roman kiln site in the Nene Valley, England, may have been re-utilized as a potters' wheel.

Goodchild (1957) published a stamp from the site reading SPNS (retrograde) in an incuse rectangle. This appears so far to be unparalleled, even amongst the recent lists (cf. Mayet 1978, 386; Panella 1973, 15ff.; Manacorda 1977, 567ff.).

A small scatter of occupation debris was found to the east of the kiln site in the field immediately to the south of the road. Finds included a South Gaulish sigillata cup Drag. (= Dragendorff 1895) Form 27 (Fig. 8, No. 31) and a large limestone column base.

A representative selection of the kiln products are described and illustrated (Figs. 5-8):

1. Hard, medium red-brown fabric with a purplish core where the vessel thickens at the rim. Two finger impressions mark the upper attachment of the handle on the inside of the vessel.
2. Hard, pink fabric with a slightly lighter surface covered with a thick cream slip.
3. Hard and fairly fine light pink-brown fabric with a lighter surface. There are traces of a thin cream slip and the point of attachment for a handle.
4. Hard, medium orange-pink fabric with a medium mauve-orange core.
5. Hard, light orange-pink fabric with a slightly greyer core and a thick cream slip on the exterior surface.
6. Hard, medium purple-brown fabric with a thick, overall, greenish-cream slip.
7. Very hard, overfired and slightly distorted amphora in a dark purple-brown fabric with a black surface.
8. Hard, medium red-brown fabric.
9. Partly distorted, overfired waster in a hard, dark red-brown/grey fabric with a dark purple core.
10. Hard, medium orange-brown fabric with an exterior cream-brown slip.
11. Amphora stub in a hard, medium orange-brown fabric with finger slurry marks visible in the greenish-yellow exterior slip. Probably a waster.
12. Hard, fine, light pink-brown fabric with a cream exterior slip. Three finger impressions remain on the interior surface opposite the upper attachment of the handle.
13. Hard, fine, medium orange-pink fabric with a light cream-brown exterior slip.
14. Dolium rim with a diameter of *c.* 1 m., in a hard reddish-brown fabric.
15. Hard, fine, light pink-brown fabric.
16. Hard, fine, light pink-brown fabric with a beige surface and similarly coloured slip.
17. Hard, fine, light pink-brown fabric with a slightly orange core. The exterior surface appears to have been smoothed on the wheel.
18. Hard, fairly fine, medium brown fabric with a darkish grey core and a green-tinged off-white slip on the exterior surface.
19. Jar in a hard, overfired, dark grey fabric.
20. Lid-seated jar in a hard, medium orange-brown fabric with a darkened interior surface.
21. Medium hard, gritty, pink-brown fabric with possible traces of a cream slip.
22. Body sherd from a large jar decorated with an applied strip of clay bearing fingertip impressions. Vary hard, light brown fabric.
23. Base in a hard, fine, light pink-brown fabric with a light grey-brown core.
24. Section through a badly distorted lid of *c.* 22 cm. diameter. Hard, overfired, purple-black fabric.

AMPHORA PRODUCTION IN THE TRIPOLITANIAN GEBEL

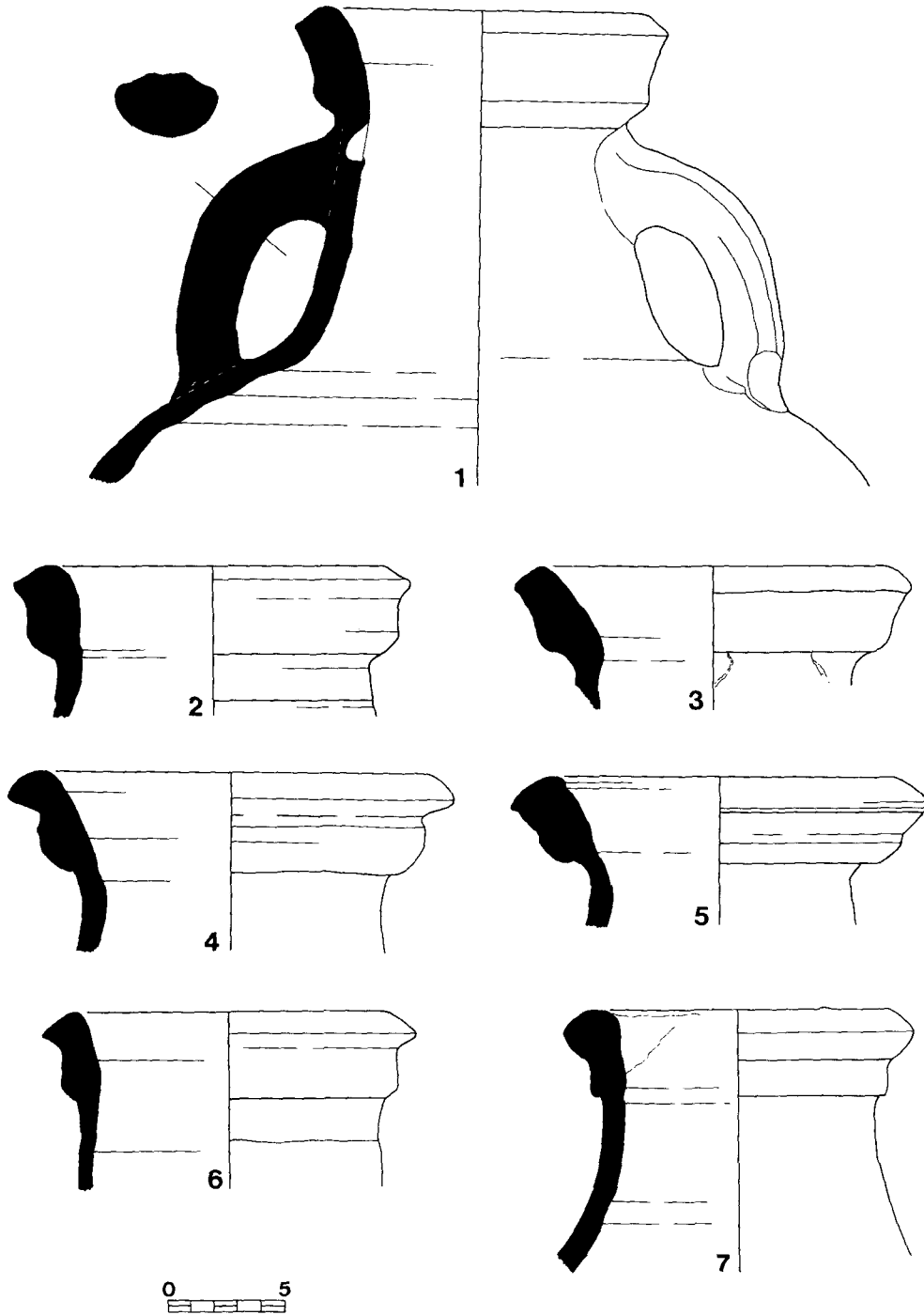


Figure 5. Sidi-as Sid. Local amphorae. Scale 1:3.

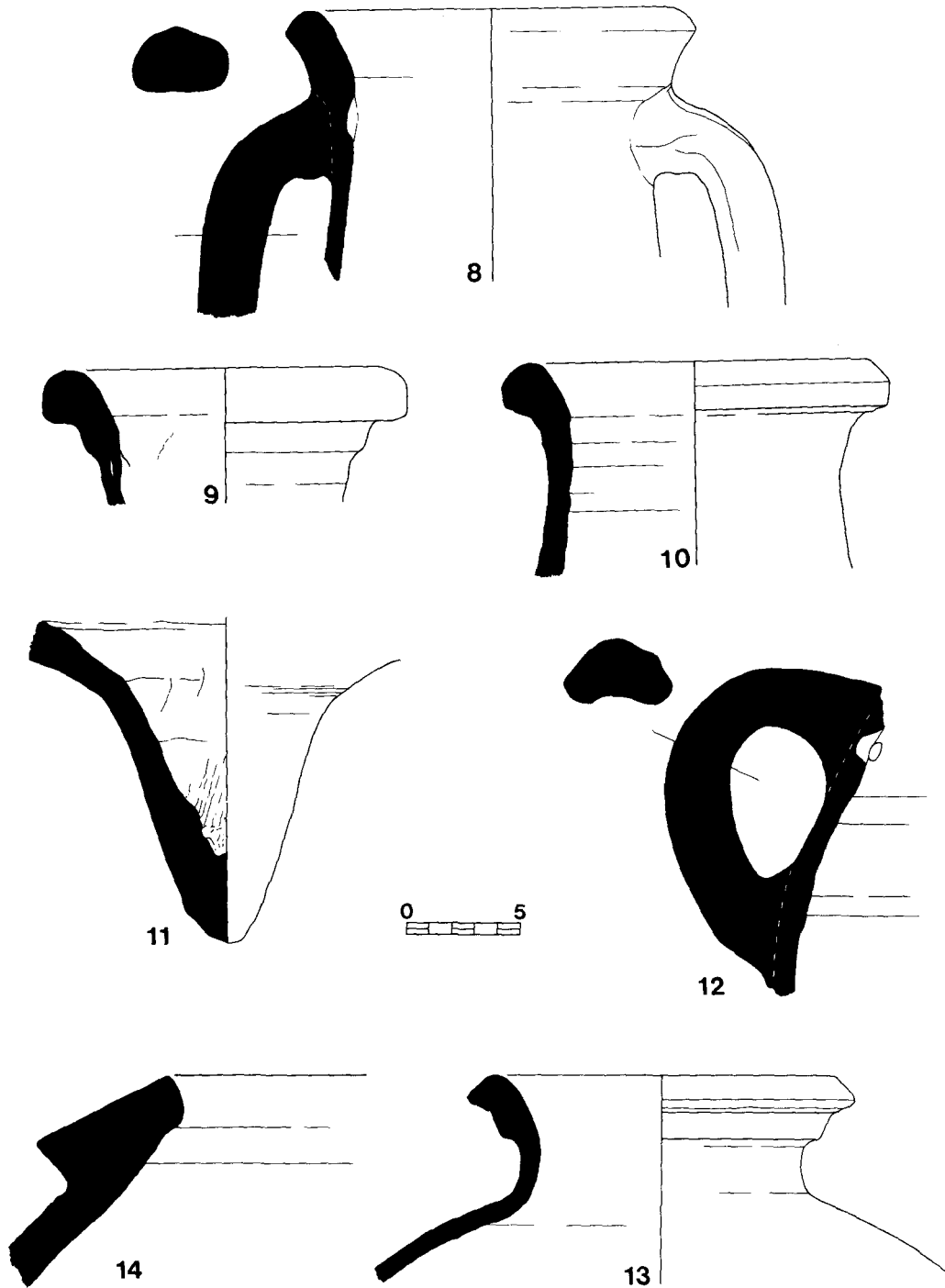


Figure 6. Sidi-as-Sid. Local amphorae and dolium rim (No. 14). Scale 1:3.

AMPHORA PRODUCTION IN THE TRIPOLITANIAN GEBEL

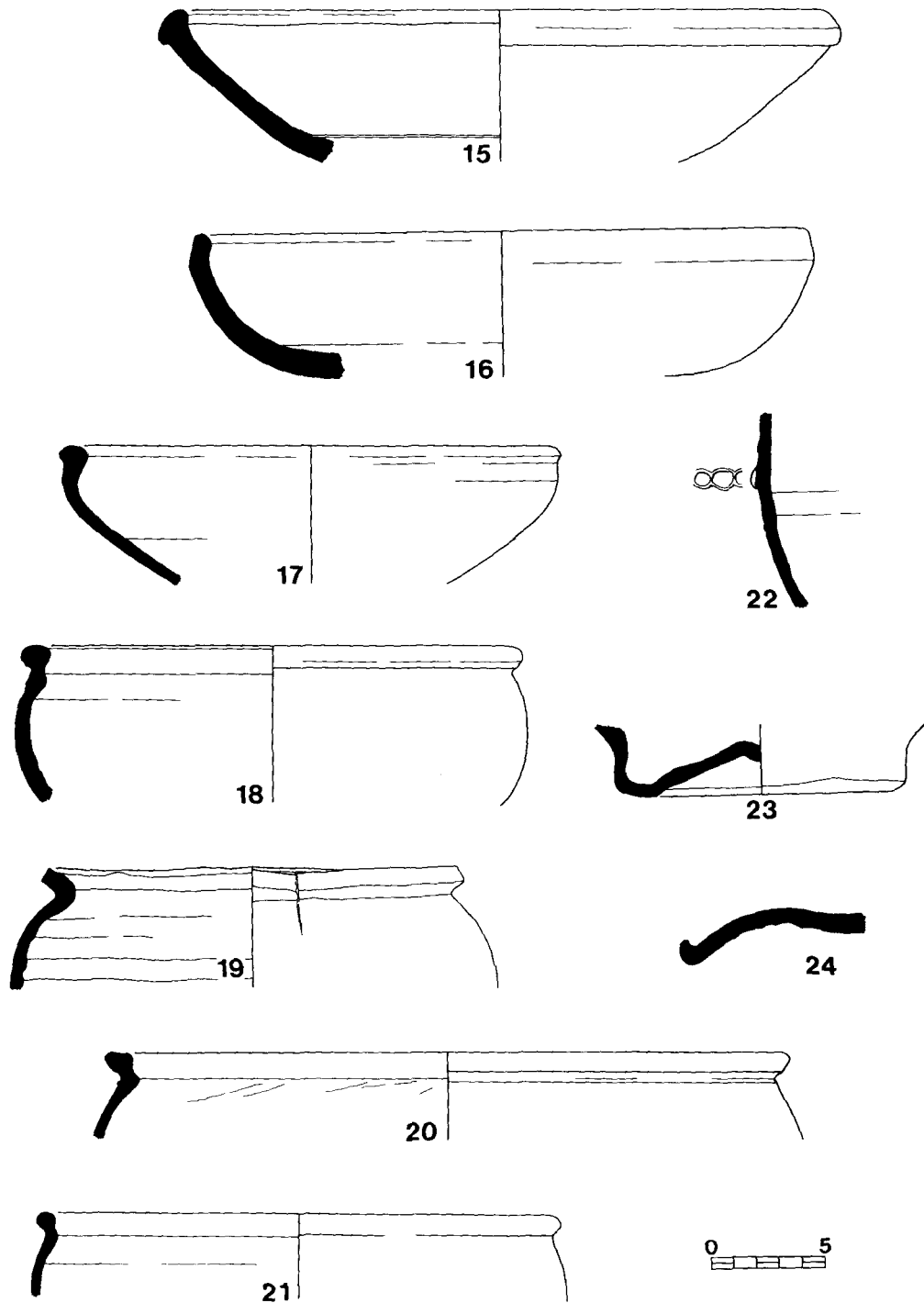


Figure 7. Sidi-as-Sid. Local coarse pottery types. Scale 1:3.

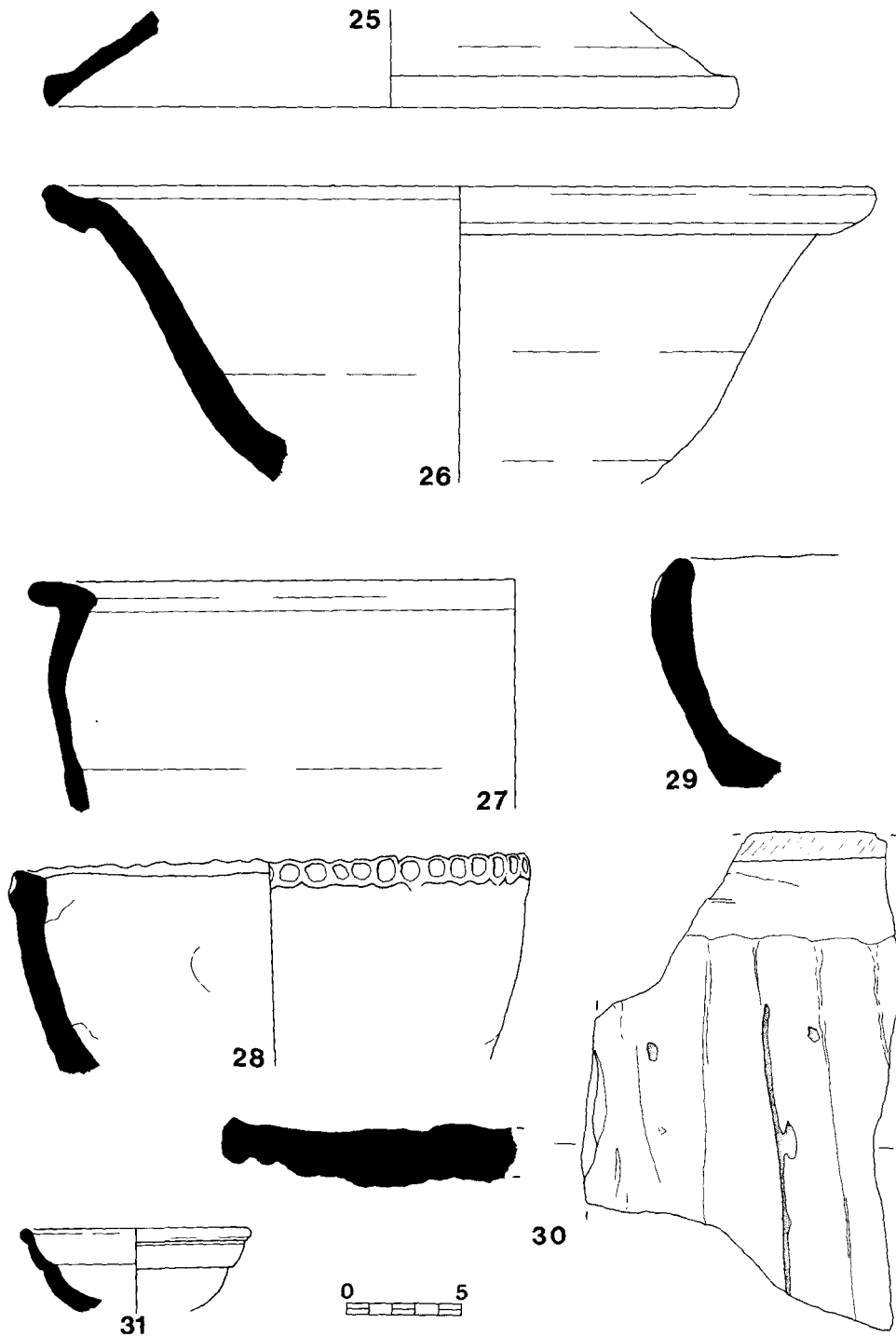


Figure 8. Sidi-as-Sid. Local coarse pottery, tile (No. 30) and South Gaulish bowl form Drag. 27 (No. 31). Scale 1:3.

AMPHORA PRODUCTION IN THE TRIPOLITANIAN GEBEL

25. Hard, gritty, greyish-pink fabric with light brown surfaces.
26. Large basin or krater-like vessel in a medium purple-brown fabric with a medium grey core.
27. Large, flat-topped jar in a hard, fine, light pink-brown fabric. The interior surface bears light finger smoothing marks.
28. Crude vessel in a hard, pink-red fabric with a medium red-brown surface. The rim is decorated with fingertip impressions.
29. Similar vessel in a hard and fine, light orange-brown fabric.
30. A crude tile, typical of the types often found in Tripolitania. Only a few examples were found and are common only on coastal sites, probably due to a general predominance of flat-topped buildings in the area. Hard, overfired, dark purple-grey fabric. Finger-smoothing marks are visible on the upper surface, whilst the underside remains rough with a few pebble inclusions.
31. South Gaulish Drag. 27 found c. 30 m. to the east of the waster dumps.

Ain Scersciara kiln site

The writer was unable to visit this site and cannot add to Goodchild's original description (1951, 85–88). Nevertheless, it is worth remembering that Goodchild found two kilns conveniently situated 100 m. north of a waterfall and connected with a road which ran northwards to Tagiura or Tripoli, on the coast, and eastwards to the settlement at Mdeina Doga (*Mesphe*) and the interior. A villa was discovered a short distance from the site, which may suggest that the latter formed part of the industrial works of a wealthy estate.

The pottery illustrated here came from Goodchild's excavations and bears the label '*cocci rinvenuti nel saggio del presunto forno sulla destra della cascata di Scersciara. 10 Aprile 1947*'. Along with the amphorae, now in Tripoli Museum, is a small brown envelope containing Tripolitanian Red Slip lamp sherds and a scrap of paper with '*forno B*' written on it. The pottery is illustrated by Figure 9.

1. Hard, medium grey fabric with medium orange/purple-grey surfaces. A thin cream slip is present on the exterior.
2. Hard, medium orange fabric with a good overall cream slip.
3. Hard, fine and splintery, medium grey/pink-brown fabric with a dark purple-brown exterior. This vessel was a waster.
4. Hard, fine, medium orange fabric with a cream overall slip.
5. Hard, light pink-orange fabric with a thin, light cream-brown exterior slip.
6. Hard fabric with a medium orange-brown core and a dark grey layer sandwiched between it and the purple-brown exterior surface which bears a light brown slip.
7. One of three similar amphora stubs in a hard, dark purple-grey fabric.
8. Neck and rim of a vessel with frilled decoration, in a hard, medium orange fabric with a cream slip.

Other ceramic artefacts include an imbrex with finger-smoothing marks and tiles of the type found as Sidi as Sid (cf. Fig. 8, No. 30).

The Petrology (by Lea Jones).

Six samples of kiln material from Ain Scersciara and nine from Sidi as Sid were examined in thin-section to determine their mineralogical characteristics. The observable mineral suites were the same in both cases which, in view of the geological homogeneity of the area and the proximity of the two kiln sites, is not surprising. The basic constituents in both kiln groups are in order of frequency quartz, collophane (sometimes partially or totally altered to calcite and occurring in amorphous shapes or in elongated or curved forms reminiscent of fossiliferous shell), haematite as either large nodules or flecks, epidote, biotite mica and red sandstone particles. Voids with reaction rims were also noted in the majority of samples, indicating leached calcareous material. The mineral constituents of both kiln groups indicate a sedimentary geological origin. The pastes all contain calcareous material and, often battered, angular to rounded quartz as the principle constituents and therefore tend to be petrologically somewhat non-descript. However, the presence of abundant silt-sized quartz particles in the matrices of the Ain Scersciara pottery does appear to distinguish it

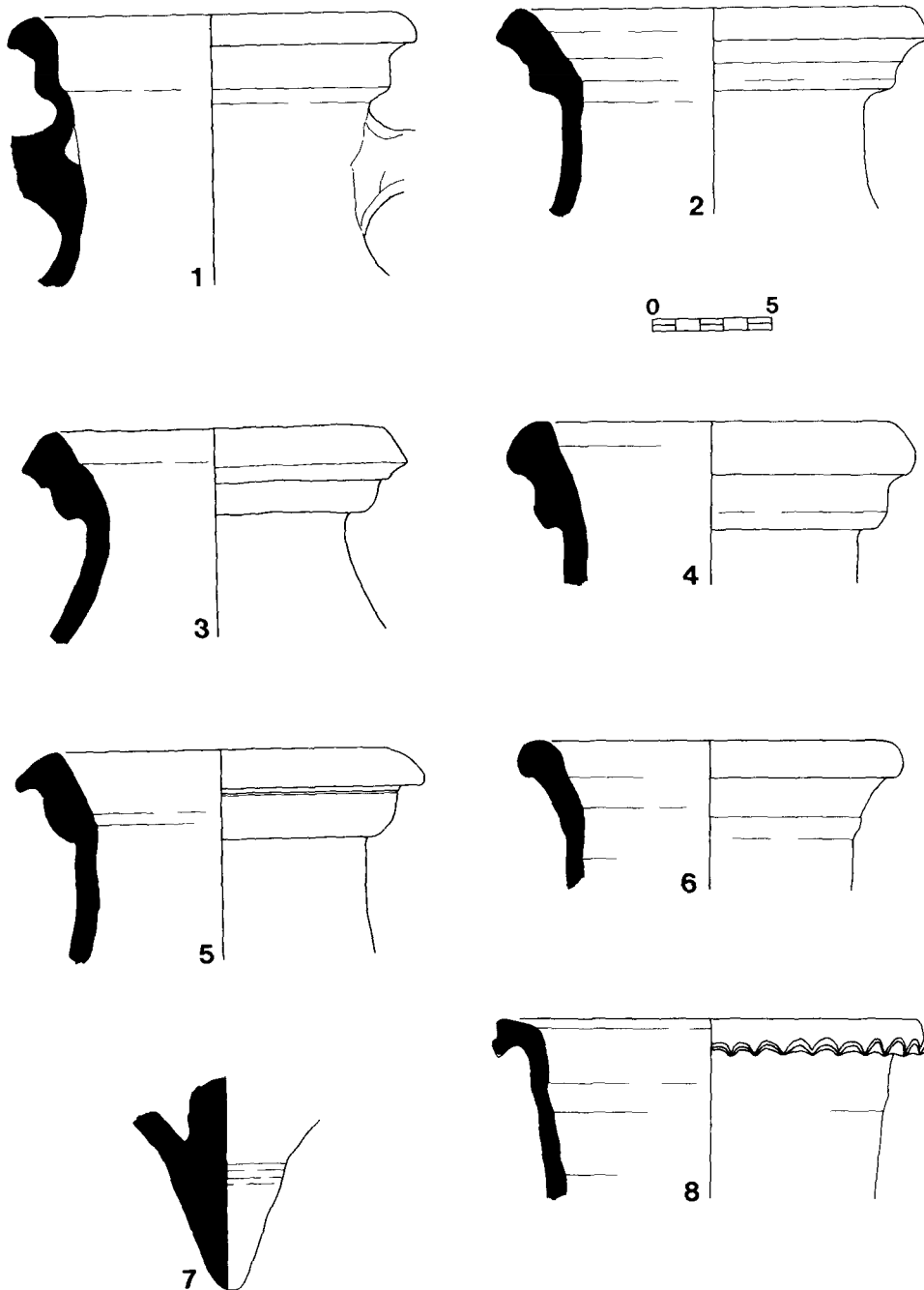


Figure 9. Ain Scersciara. Local amphorae and jar. Scale 1:3.

from the Sidi as Sid material. This is unlikely to have been a deliberate admixture to the potters clay, although there is no way of confirming this (Shepard 1958, 162).

In general, the amphorae appear to have been constructed from poorly elutriated clays which contain naturally occurring inclusions; only in a few cases does deliberate tempering with quartz (in the 0.1 to 0.2 mm. size range) appear to have occurred: Sidi as Sid Nos. 8, 18, 20 and 23, and Ain Scersciara No. 6.

Ain Scersciara No. 3 contained two small fragments of hornblende (c. 0.01 mm.). This is interesting, although the volume presented is negligible, as hornblende is rarely found as a

detrital mineral occurring as it does principally as a constituent of igneous rock. However, there are igneous rock formations some distance to the southeast and the inclusions may thus have been of aeolian origin.

Discussion

As none of the amphorae from Sidi as Sid and Ain Scersciara come from defined stratigraphic contexts their dating must depend upon their assignment to the Tripolitanian amphora type series proposed by Panella (1973, 559ff.) and their comparison to dated examples of similar type. Panella distinguished three main, chronologically significant, types which are termed Tripolitana I, II and III. Tripolitana I (Ostia form LXIV) is characterised by a heavy, slightly double-stepped, rim which is never very flared and which meets the body with a slightly expanding neck. Thickened strap handles, with slight grooving, spring from just below the rim and attach to the oblique and curved shoulders of a cylindrical body. The pointed basal stub is hollow. Tripolitana II (Ostia form XXIV) has a short cylindrical neck, a fairly sharply double-stepped rim with a slight flare, rounded shoulders and a cylindrical body which terminates in a short stub strengthened in the interior with a plug of clay. The thickened and slightly grooved strap handles are placed at the point where the shoulders straighten into the vertical sides of the body. This last feature recalls the Tunisian Punic type Dressel 18 and similar (Maña 1951), as well as Berenice Hellenistic type 13 (Riley, forthcoming). The latter appears frequently on Tripolitanian sites of Hellenistic date and is possibly the predecessor of Tripolitana II which sometimes bears similar, though far more accentuated, steps to the rim. The Maña CI appears in Republican contexts around the Mediterranean and in the pre-Imperial levels at Luni, Italy (Siena 1977, 212; Maña 1951, 203ff.), and might well have been the type of container used to ship oil from Lepcis Magna when Caesar imposed the *stipendium* of 3,000,000 pounds of oil to be paid each year by the city for having supported Pompey's cause (Haynes 1959, 34; Panella 1973, 569-570). Tripolitana III (Dressel 41 or Ostia II) has a higher and more flared double-stepped rim than Tripolitana I. The general characteristics of I and III are similar, although Tripolitana III invariably has a plug in the basal stub and sometimes has noticeably concave as opposed to vertical sides. Some of the examples seen by the writer at Lepcis are poorly made with a tendency to lean from the vertical axis.

Little can be contributed here to Panella's discussions of chronology and distribution of the Tripolitana series. Tripolitana I may be dated from the first half of the first century A.D. until, perhaps, the mid second century. Tripolitana II appears to date from the first until the end of the fourth century, whilst Tripolitana III seems to have appeared at the end of the second century A.D. and to have lasted, at least, until the end of the fourth.

The fragmentary state of the pottery from the kiln sites makes definite attribution difficult. The Sidi-as-Sid examples 12 and 13 are assignable to form Tripolitana II. Amphorae Nos. 1 to 3, 6 to 8 and the hollow basal stub No. 11 are probably of Tripolitana type I, and have many points in common with the series from Pompeii (Panella 1977). The bead-rim of No. 10 can also be paralleled at Pompeii (Panella 1977, Pl. LXVI, 32 and Pl. LXVII, 33; cf. Panella 1973, Figs. 195 and 386 from Ostia), whilst No. 9 must be related. Numbers 4 and 5 appear slightly more flared and angular and might belong to Tripolitana type III. Panella noted no Tripolitana I types from Sidi as Sid although they are present, apparently in significant numbers. Without excavation it is hard to suggest the period of production at the site. However, on balance, a production span from the first century A.D. up to and into the third century A.D. may be tentatively put forward.

Only a small amount of material from Ain Scersciara could be examined. All three stubs in Tripoli Museum, however, were of the plugged type. None of the examples are strikingly close to the Tripolitana I's from Pompeii and Tripolitana II's are absent amongst the material now in Tripoli Museum, although Panella (1973, 564) notes the latter from Ain Scersciara. With the apparent absence of Tripolitana I's from Scersciara, a production span

in the period from the late second century until the end of the fourth century seems likely. Goodchild's suggestion that the villa and kiln site were not contemporary must thus be treated with caution as they may both have been functionally diverse parts of a single estate.

As in other parts of the Roman Empire, amphorae were produced alongside a number of other ceramic products (cf. for example Peacock 1977, 262) which, aside from 'kitchen wares', often included tiles, pipes, dolia, basins and mortaria. All are items which formed part of the basic *instrumenta* of rural activities. They are often neglected by archaeologists faced with the study of large amphora deposits, but just as important for the understanding of localised economic and agricultural processes as amphorae are for empire-wide studies. Little can at present be said about the other products of the Gebel kilns, although it is to be hoped that their functions, chronologies and distribution will eventually be elucidated through systematic work on both coastal and hinterland sites.

Acknowledgements

I am indebted to the Controllers of Antiquities at Lepcis Magna (Essaid Omar Mahjoubi) and Tripoli (Essaid Abdul Wahab) for allowing me access to material for study and for permission to export samples for analysis. Miss Lea Jones kindly prepared the petrological report. I owe much to Dott. Clementina Panella for discussions about Tripolitanian ceramics prior to my visit to Libya. Dr. David Peacock and Dr. John Riley read a preliminary draft of this paper. Miss Tina Watson and Mr. Peter Couldrey were free with assistance during study of the site at Sidi as Sid. This paper is a revised summary of an article submitted in 1979 to *Libya Antiqua*.

This work was carried out during a two-month stay in Libya as a research assistant of the Society for Libyan Studies to work with Lady Olwen Brogan. My greatest debt belongs to her for unceasing encouragement and hospitality.

Bibliography

- Camps-Fabrer, H. 1953. *L'Olivier et l'Huile dans l'Afrique Romaine*. Algiers.
- Cowper, H. S. 1897. *The Hill of the Graces - The Trilithons and Megalithic Sites of Tripoli*. London.
- Dragendorff, H. 1895. Terra-Sigillata. Ein Beitrag zur Geschichte der griechischen und römischen Keramik. *Bonner Jahrbücher* 96: 18-155.
- Fentress, E. W. B. 1979. *Numidia and the Roman Army*. Oxford, BAR International Series 53.
- Goodchild, R. G. 1950. Roman Tripolitania: Reconnaissance in the Desert Frontier Zone. In Goodchild 1976, 2-16.
- Goodchild, R. G. 1957. Roman Sites on the Tarhuna Plateau of Tripolitania. In Goodchild 1976, 72-106.
- Goodchild, R. G. 1976. *Libyan Studies: Selected Papers of the late R. G. Goodchild* (Edited by J. M. Reynolds). London, Elek.
- Hayes, J. W. 1972. *Late Roman Pottery*. London, The British School at Rome.
- Haynes, D. E. L. 1959. *The Antiquities of Tripolitania*. London.
- Manacorda, D. 1977. Testimonianze sulla produzione e il consumo dell'olio tripolitano nel III secolo. *Dialoghi di Archeologia* IX-X, 1-2: 542-601.
- Maña de Angulo, J. M. 1951. Sobre Tipología de anforas punicas. In *Chronica del VI Congreso Arqueológico del Sudeste (Alcoy 1950)*.
- Mayet, F. 1978. Marques d'Amphores de Mauretanie Tingitane. *Mélanges de l'Ecole Française de Rome - Antiquité* 90, 1: 357-406.
- Myers, J. L. 1899. The Age and Purpose of the Megalithic Structures of Tripoli. *Proceedings of the Society of Antiquaries of London* Second series, 17: 280-293.
- Oates, D. 1953. The Tripolitanian Gebel: Settlement of the Roman Period around Gasr Ed-Daun. *Papers of the British School at Rome* 21: 81-117.
- Palma, B. and Panella, C. 1968. Anfore. In A. Carandini and C. Panella (eds.), *Ostia I Studi Miscellanei* 13. Rome. 97-116.
- Panella, C. 1973. Le Anfore. In A. Carandini and C. Panella (eds.) *Ostia III Studi Miscellanei* 21. Rome. 460-696.
- Panella, C. 1977. Anfore Tripolitane a Pompei. In A. Carandini (ed.) *L'Instrumentum Domesticum di Ercolano e Pompei nella prima età imperiale* Quaderni di Cultura Materiale I. Rome. 135-149.
- Peacock, D. P. S. 1977. Recent Discoveries of Roman Amphora Kilns in Italy. *The Antiquaries Journal* 57: 262-269.
- Riley, J. A., forthcoming. The Coarse pottery from Berenice. In J. A. Lloyd (ed.), *Sidi Khrebish Excavations, Benghazi (Berenice)*, Vol. II, Tripoli: 91-467.
- Shepard, A. O. 1958. *Ceramics for the Archaeologist*. New York.
- Siena, S. L. 1977. Appunti su alcuni tipi di anfore lunensi. In *Méthodes Classiques et Méthodes Formelles dans l'Etude des Amphores*. Rome, L'Ecole Française de Rome: 207-230.
- Wild, J. P. 1973. A Fourth-Century Potter's Workshop and Kiln at Stibbington, Peterborough. In A. Detsikas (ed.) *Current Research in Romano-British Coarse Pottery*. CBA Research Report 10. London. 135-137.