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A CHIOTE POTTERY WORKSHOP OF THE ROMAN PERIOD

in memoriam Vivien Swan

The intense rescue excavations carried out by the archaeologists of the Greek Archaeological Service from the early 1980's increased our knowledge of the various limits of the ancient town of Chios and of its commercial and industrial activity[1]. The focus of this paper concerns the southern manufacturing area that specialised in making amphorae during the early Roman period[2].

The kilns

The production area seems to have been enclosed by a wall of large stones, but only the remains of the eastern and western sides have been identified by excavation; the stones of the northern side were most likely robbed during late Roman or modern times, whilst only the kiln lining of bricks is preserved.

The two pottery kilns were double-chambered and rectangular (**fig. 1**). The larger kiln has the interior dimensions of 3.50 × 2.55 m. As the upper chamber was destroyed by the bulldozer, only seven courses of the brick wall were preserved on the western side. More information is available about the combustion chamber as it was better preserved. It was partially cut into the bedrock, which forms its western wall, subsequently brick-lined, while the eastern wall is formed by the enclosing wall of the workshop, likewise lined with bricks. The kiln is closed to the north by a brick wall, presumably also attached to a stone wall while, to the south, a stone wall was lined by bricks with an opening of only 0.75 m and a length of *c*. 1.5 m forming the *praefurnium*. Its base was 0.45 m higher than the floor of the combustion chamber, which was deeper in the centre and rose on its sides. The raised oven-floor was supported by six large brick arches that sprang from the side-walls. These arches left a large space in the combustion chamber and provided a solid support for the oven chamber[3] that may have been used not only for amphorae, but also for tiles[4]. The floor of the oven-chamber still preserves two rows of rectangular vent-holes next to the western and eastern walls of the kiln. According to the dimensions of the kiln, it may have had five rows of six vent-holes each, i.e. thirty vent-holes.

Facing this kiln, immediately to the south, was another much smaller kiln (**fig. 1**), which was a miniature copy of the former. The inner dimensions of the oven-chamber are of 0.70 × 0.90 m. Its west side was also cut into the bedrock and was lined with bricks, while the eastern, southern and northern sides were formed by bricks. The *praefurnium* is not on the same axis as that of the first kiln. The floor of the oven-chamber had seven rows of eleven small vent-holes each. As this kiln was partly covered by a street, it was not possible to uncover it completely.

This kiln type has parallels on military sites in Britain[5], in a *vicus* in the territory of Tomi at Neptun (Constanța)[6], and at Ganos[7].

The products

The manufacturing activity is shown not only by over-fired amphorae and wasters but also by fittings such as supports (**figs. 2–4**) and spacer-rings (**fig. 5**).

The workshop produced not only a variety of large and small containers for olive oil such as amphorae, but also *ampullae*, *unguentaria*, jugs, and funnels[8].

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1 A. Tsaravopoulos, Η αρχαία πόλη της Χίου. Στοιχεία για την τοπογραφία της από σωστικές ανασκαφές. Horos 4, 1986, 124–144.

2 According to numerous over-fired sherds discovered to the north of these kilns, the area was also used in the classical period to make amphorae but their kiln, most likely in close proximity, was not uncovered.

3 This type of kiln does not find a perfect parallel in Cuomo's typology as it is a combination between a round kiln with the oven floor supported by arches and the rectangular kiln with a central corridor, cf. N. Cuomo di Caprio, La ceramica in archeologia. Antiche tecniche di lavorazione e moderni metodi d'indagine (Rome 1985) 142 fig. 19,1c.2b.

4 Two trial trenches dug in the close proximity of this kiln, on the properties of the local school and Loutrari property, brought to light large quantities of tile fragments.

5 V. G. Swan, The pottery kilns of Roman Britain (London 1984) 89.

6 Iconomu 1968. This kiln has an oven-chamber of 2.68 × 2.15 m, and six rows of arches with twelve vent-holes each. It is worth noting that these vent-holes were rectangular, two sides being the sides of the arches and the other two sides made of two bricks. They were narrowed and rounded by clay fastened around the holes.

7 N. Günsenin, Les ateliers amphoriques de Ganos à l'époque Byzantine. In: Y. Garlan (ed.), Production et commerce des amphores anciennes en mer Noire. Colloque international Istanbul, 25–28 mai 1994 (Aix-en-Provence 1999) 125–128.

8 The drawings were made by A Opaiț and were inked by O. Malinovskaya.

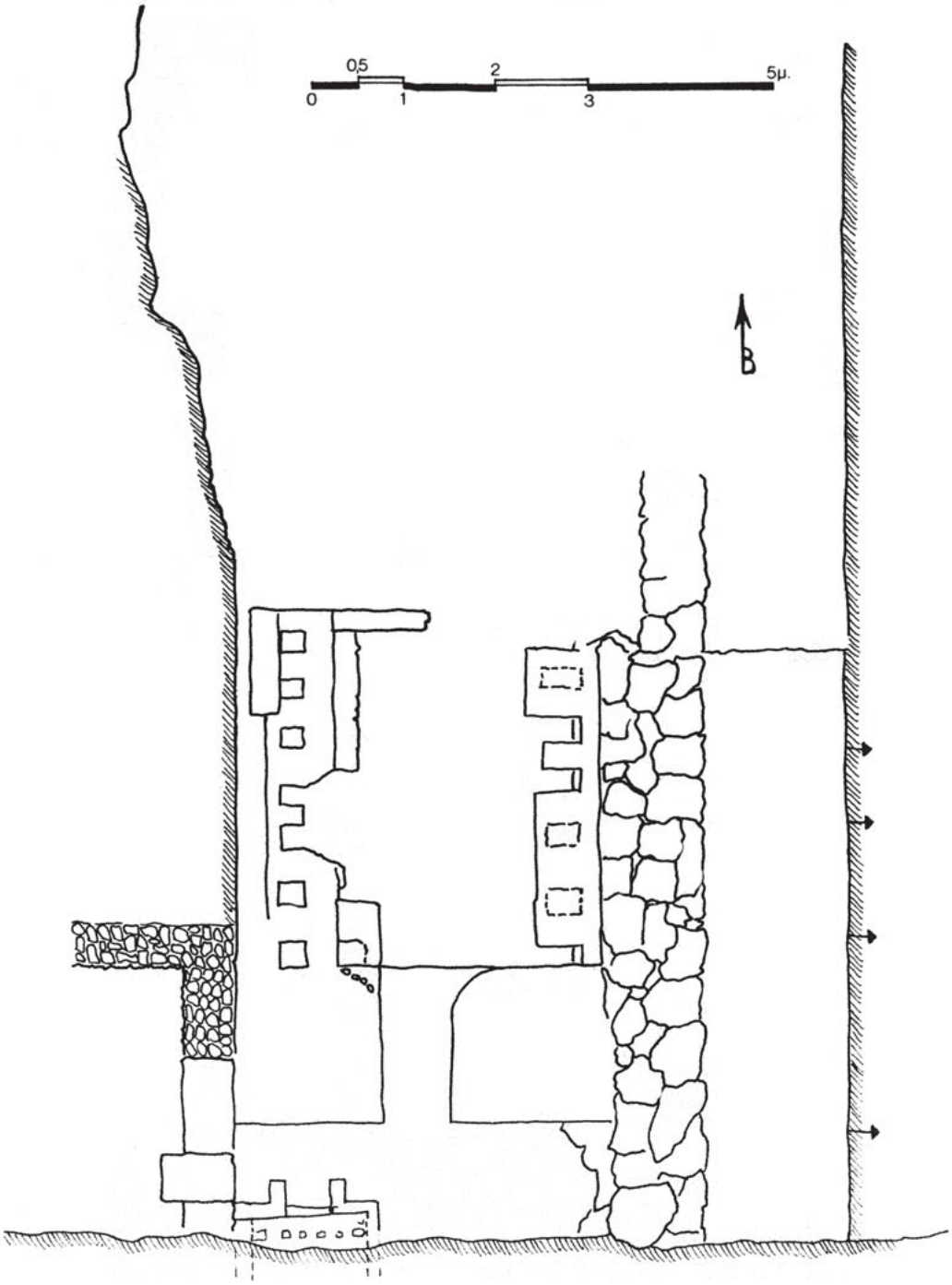

Fig. 1. Chios workshop plan, after Tsaravopoulos (Anm. 1) pl. 33.

The main output of the Chiote kiln was amphorae of variant of type Dr 24 *similis*[9]. They have a tall cup-shaped mouth[10] with an internally-thickened rim with an internal concavity, and thick, almost rectangular, cross-section handles attached to the mouth-neck and neck-shoulder junctions (**fig. 6).** The handles are wider at the top (4.9/2.3 cm) narrowing to the lower attachment (3.9/2.6 cm). The body was probably ovoid, ending in a conical stub, and covered by shallow grooves, as is suggested by many body fragments and similar amphorae discovered at *Noviodunum*[11] (**fig. 7a–b**), *Histria*[12] *(Moesia Inferior)*, and *Intercisa*[13] *(Pannonia)*. Despite these striking resemblances, the Noviodunum find has a completely dissimilar fabric that suggests a different production area.

[9] A. Opaiț, From DR 24 to LR 2? In: M. Bonifay/J.-C. Tréglia (eds.), LRCW 2. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry. BAR Internat. Ser. 1662/2 (2007) 627–642.

[10] The height of the mouth varies between 9 and 12 cm.

[11] Simion 1984, 84 pl. 12,1.

[12] Coja 1959, 287 fig. 9,1.

[13] M. H. Kelemen, Roman amphorae in Pannonia IV. Acta Arch. 45, 1993, 45–47 type 23 fig. 1,9.

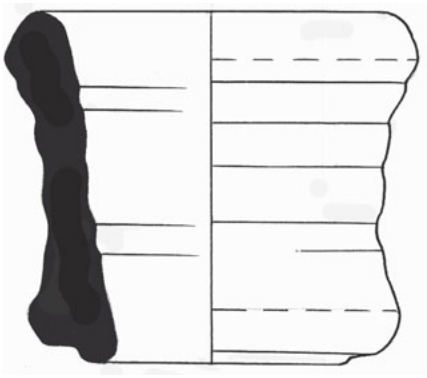

Fig. 2. Chios workshop, pottery support (1:2).

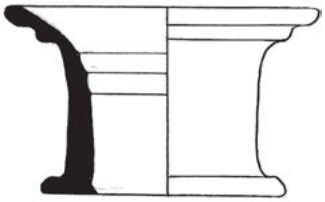

Fig. 3. Chios workshop, pottery support (1:2).

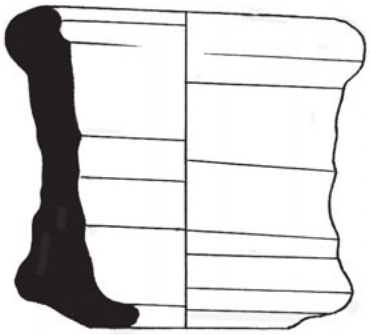

Fig. 4. Chios workshop, pottery support (1:2).

Fig. 5. Chios workshop, distancing ring (1:2).

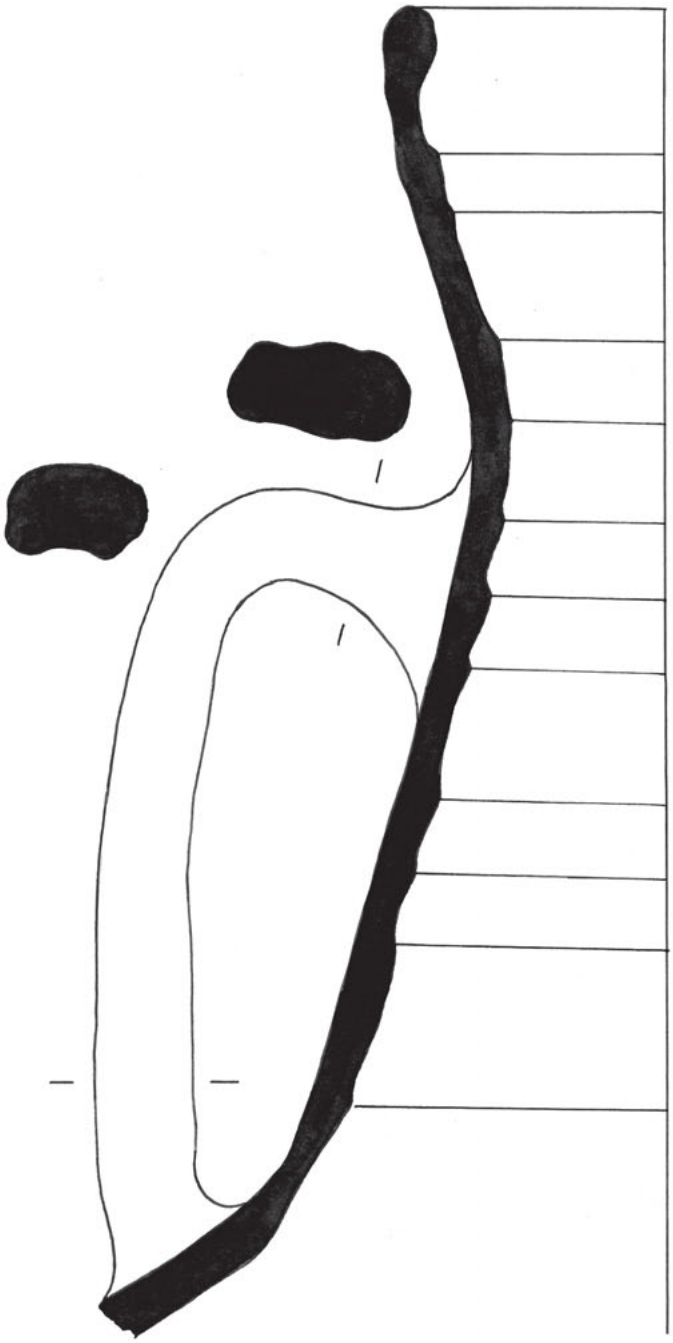

Fig. 6. Chios workshop, amphora upper part (1:2).

Closely related to this amphora type are some miniature amphorae discovered next to the small kiln. The cup-shaped rim is set on a long neck with small handles attached to the middle of the neck and shoulders; the body is ovoid with deep grooves and ends in a ring base with a central nipple (**fig. 8,1**). Two close parallels have been found at *Histria*[14] and Radyuvene, Vratsa district (north western Bulgaria)[15]. The correct name of this small jar is in our opinion *ampulla*, which is the diminutive name of an amphora.

Together with *ampullae* were many *unguentaria*, one of which was discovered in one of the vent-holes of the small kiln. Although the vast majority are clearly Roman in date (**fig. 8,2**), some were manufactured during Hellenistic times (**fig. 8,3**) suggesting a long continuity of this pottery workshop.

Some jug necks were collected from the heap of discarded pottery. Their rim is everted, almost horizontal, with

[14] Alexandrescu 1966, 212 tumulus XVII no.11 pl.80; the maximum diameter is 11 cm.

[15] Kr. Miyatev, Bulgarian Tumulus graves of 14th century by the village of Radyuvene, District of Vratsa. Izv. Bulgarskiya Arch. Inst. 5, 1928/1929, 341–344 here 343 fig. 201. This vessel has a preserved height of 15 cm and it was discovered in a cremation grave together with a coin minted by Antoninus Pius. The 2nd century necropolis was overlapped by a medieval cemetery.

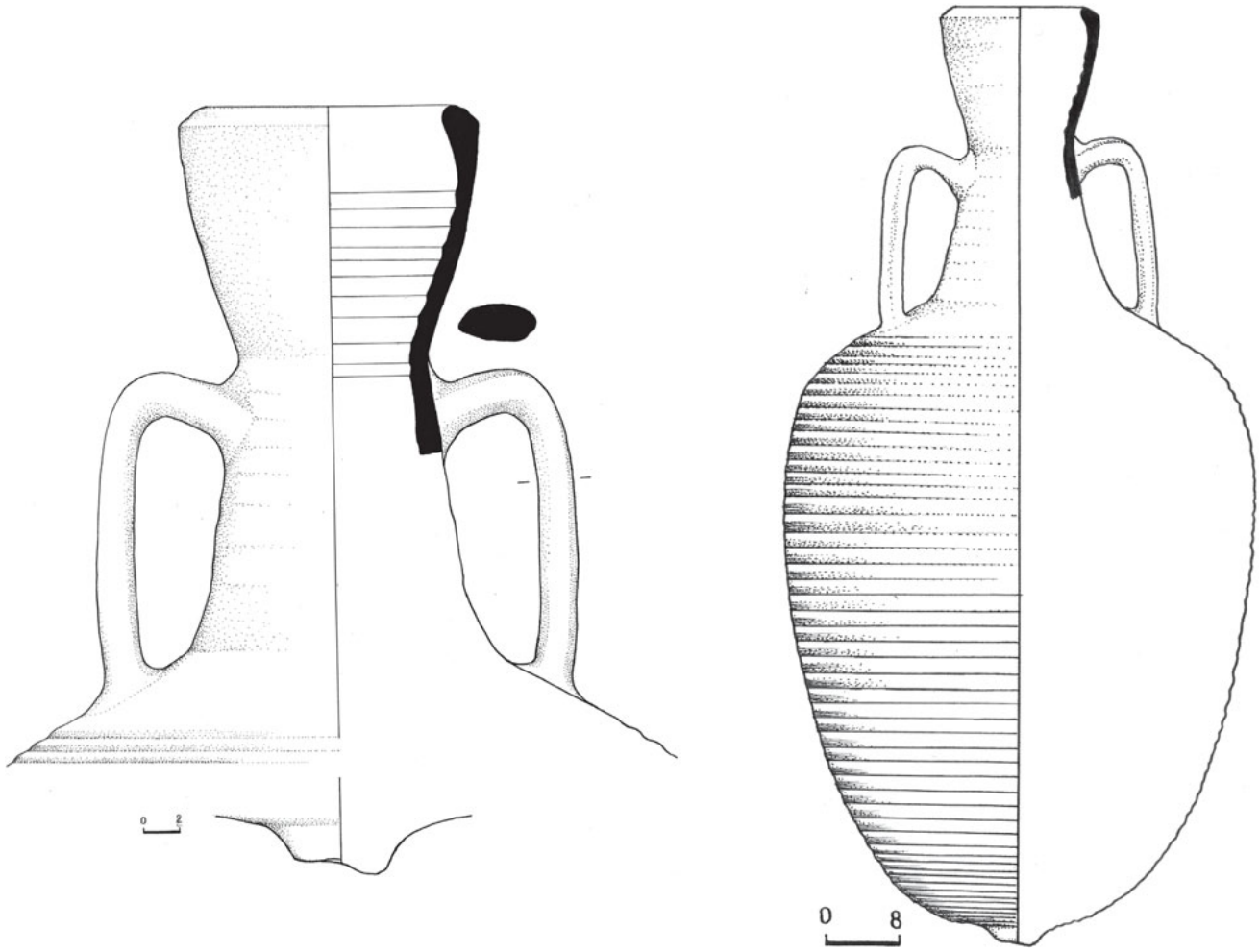

Fig. 7. *Noviodunum* (a: 1:4; b: 1:8).

a shallow concavity on the upper surface while the neck is cylindrical, and ridged on the exterior (**fig. 8,4**).

Another utility vessel manufactured at this site is the funnel. This shape is characterised by an everted, short rim with a shallow internal concavity to prevent splashing and a convex body. Parallels exist at Athens[16], and Olbia[17], while at Tel Anafa they have a different rim[18]. Our examples are made in the same fabric as the amphorae (**fig. 8,5).**

Fabric

Recently, Roman amphorae sherds from this workshop have been analysed petrographically by D. Williams and chemically by P. Dupont[19]. The petrographic results show "*a fairly fine-textured anisotropic clay matrix which is lime-rich, and contains small pieces of cryptocrystalline limestone and calcite, together with frequent flecks of mica, mostly muscovite. Scattered throughout are moderately frequent unimodal-sized subangular grains of monocrystalline quartz and rare feldspar, both generally below 0.20mm in size. Also present is a little siltstone and some iron oxide.*

"This fabric is similar to that described by Whitbread for his Fabric Class 2 Chian amphorae and modern potters' clay from Armolia, situated in the south-west of Chios [1995]."

The colour of the fabric is light brown to reddish yellow (7.5 YR 6/4 to 6/6 and 6/8).

The producers

An important group of stamps has been collected from other trial trenches in this area. The stamps bear the names of three manufacturers: Σώζων, Σύνετο?, and Ζώσιμος. Stamps of

Σώζων (**fig.9**) are well-known in Dacia at Romula[20], *Sucidava*[21] and *Apulum*[22], in *Moesia Superior* at *Vimina-*

[16] For Hellenistic examples see Rotroff 2006, 90–91 form 1 fig. 22,141–145 pl. 21,141–144; for examples of Roman period see Robinson 1959, 85 M 9 pl. 18; 95 M119 pl. 18; 108 M 253 pl. 71.
[17] Krapivina 1993, 104 fig. 66,5–6.
[18] A. Berlin, The plain pottery. In: S. C. Herbert (ed.), Tel Anafa 2,1. The Hellenistic and Roman pottery (Ann Arbor 1997) 139–140 pl.47 PW 420–423.
[19] The results of these chemical analyses are still not available to us.
[20] Ruscu 2003, 60–61 no. 99 pl. 18,99; A. Ardeț, Amforele din Dacia Romană (Cluj-Napoca 2007) 209–210 nos. 21; 24–25 figs. 105; 108–109.
[21] Ruscu 2003, 75 no. 127.
[22] Ibid. 32 no. 31 pl. 8,31.

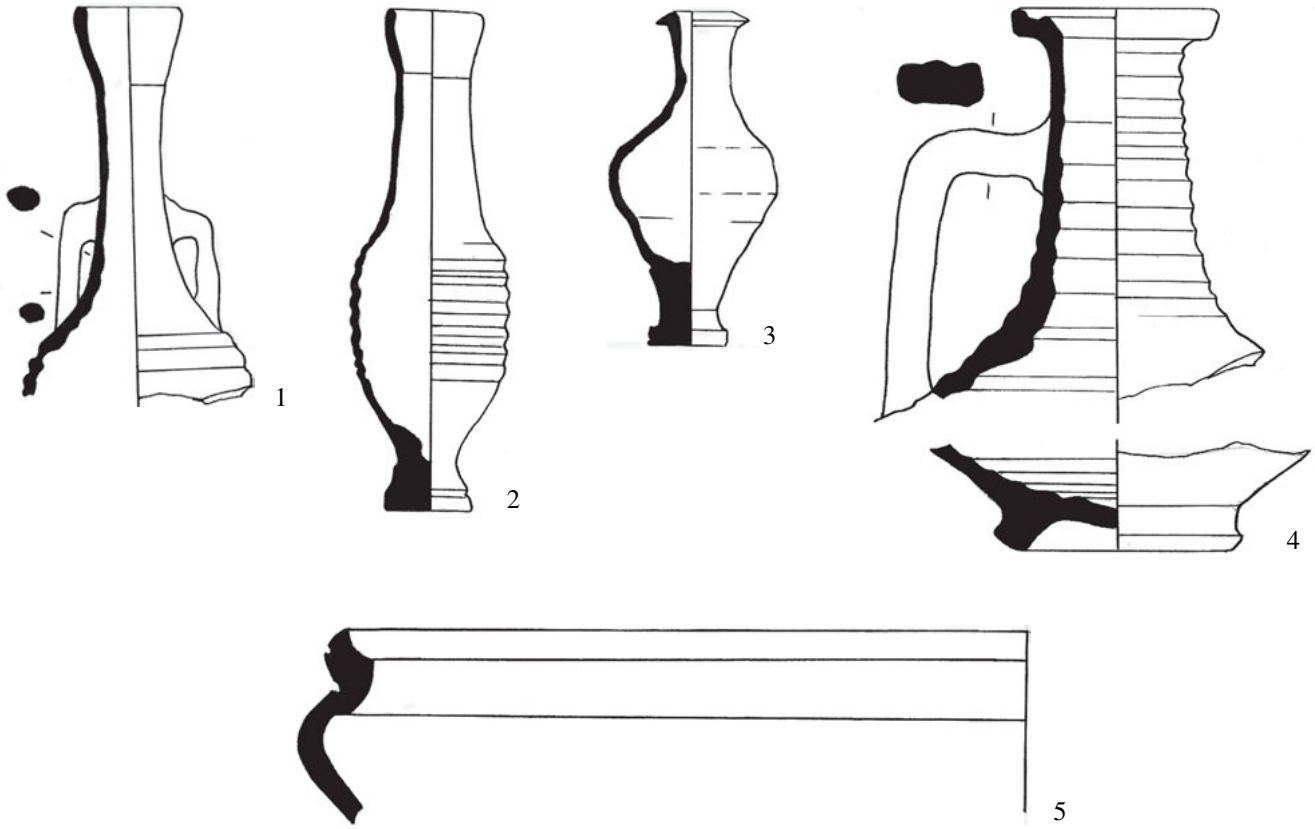

Fig. 8. Chios workshop. **1** *Ampulla* upper part (1:2); **2** Roman *unguentarium* (1:2); **3** Hellenistic *unguentariaum*; **4** jug (1:2); **5** funnel (1:2).

Fig. 9. Chios, amphora stamp of Sozon (not to scale).

Fig. 10. Chios, amphora stamp of Synetou (not to scale).

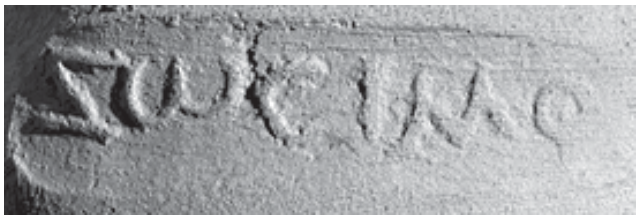

Fig. 11. Chios, amphora stamp of Zosimou (not to scale).

Fig. 12. Chios workshop, lamp (not to scale).

Fig. 13. Chios workshop, bowl in Çandarli ware (1:2).

cium[23], and in Thracia at Plovdiv[24]. Σύνετο (**fig. 10**) is present also in Dacia with two examples at Acidava[25] and Gornea[26]. The last officinator, Ζώσιμος (**fig. 11**), is so far unknown on consumer sites[27].

The site can be dated by a fragmentary lamp (**fig. 12**), dated by Bailey to the second half of the 2nd century AD[28], some fragments of flanged Çandarli bowls belonging to Form H3[29] dated between the mid 2nd century AD and the early 3rd century AD (**fig. 13**), and the shape of the amphora type itself, which is well dated in Dobrudja, in the necropolis at *Noviodunum*[30], and *Histria*[31].

The content of these amphorae is not only indicated by morphology that suggests an olive oil content, but also by the presence of *tituli picti* mentioning *oleum* on amphorae of this type, one discovered at Romula[32], and two on Monte Testaccio[33].

Conclusions

The rescue excavation of the Chian workshop provided new information about the organisation of this amphora workshop and shed a new light on the flourishing olive oil industry of the island of Chios during the Hellenistic and early Roman period, as it manufactured not only large and medium-size amphorae but also *ampullae, unguentaria* and funnels.

23 L. Bjelajac, Amfore gornjo mezijskog Podunavia (Beograd 1996) 58 cat. nos. 91–92 fig. 18,91–92.

24 P. Dyczek, On the origins of amphora Zeest 90/Dyczek 25 – ultimate resolution? Acta RCRF 40, 2008, 515–521 here 518.

25 Ruscu 2003, 13 no. 1.

26 Ibid. 40 no. 54 pl. 12,54.

27 A possible explanation for this absence on the consumer sites may be the earlier activity of this officinator, at a time when the provinces of the northern border were at the beginning of their existence.

28 D. M. Bailey, A catalogue of the lamps in the British Museum III. Roman Provincial Lamps (London 1988) 363 Q 2989 pl. 96 figs. 110; 144; a similar decoration occurs on the shoulder of lamp Q 2986 pl. 96 fig. 74, but this lamp does not have a handle.

29 J. W. Hayes, Late Roman Pottery (London 1972) 321 form 3,2 fig. 64; id. 1983, 118 no. 26–27 fig. 3; P. M. Kenrick, Excavations at Sidi Khrebish, Bengazi (Berenice) 3,1: The fine pottery. Libya Antiqua Suppl. 5 (Tripoli 1985) 260 B 366.5; Atlante delle forme ceramiche. II. Ceramica fine romana nel bacino Mediterraneo (tardo ellenismo e primo impero). EAA (Rome 1985) 78 Form H 3.

30 Simion 1984, 84 pl. 12,1. The amphora is dated by a coin issued during the reign of Marcus Aurelius.

31 Coja 1959, 287 fig. 9,1. The jar was discovered in a c. 170–180 AD destruction level.

32 D. Tudor, Importul de vin și untdelemn în provincia Dacia. Apulum 7, 1968, 396 no.17; Gh. Popilian, Ceramica romana din Oltenia (Craiova 1976) 40 pl. 76,23.

33 J. Remesal Rodríguez/M. Garcia Sánchez, Los tituli picti sobre ánforas olearias orientales. In: J. M. Blázquez Martines/J. Remesal Rodríguez (eds.), Estudios sobre el Monte Testaccio (Roma). Coll. Instrumenta 24 (Barcelona 2007)178 no. 530; 180 no. 533 pl. 39,533.

Bibliography

Alexandrescu 1966 — P. Alexandrescu, Necropola tumulară. Săpături 1955–1961. In: E. Condurachi (ed.), Histria II (București 1966) 133–294; 501-559.

Coja 1959 — M. Coja, Sextorul X. In: E. Condurachi et al., Șantierul Histria. Materiale VI. Ed. Acad. Rep. Populare Romîne (București 1959) 280–89.

Iconomu 1968 — C. Iconomu, Cercetări arheologice la Mangalia și Neptun. Pontica 1, 1968, 261–263.

Krapivina 1993 — V. V. Krapivina , Ol'biya. Material'naya kul'tura I–IV vv. n.e. (Kiev, Naukova Dumka 1993).

Robinson 1959 — H. S. Robinson, The Athenian Agora V. Pottery of the Roman period (Princeto 1959).

Rotroff 2006 — S. I. Rotroff, The Athenian Agora XXXIII. Hellenistic pottery. The plain wares (Princeton 2006).

Ruscu 2003 — L. Ruscu, Corpus inscriptionum Graecarum Dacicarum. Hung. Polis Stud. 10 (Debrecen 2003).

Simion 1984 — G. Simion, Descoperiri noi în necropola de la Noviodunum. Peuce 9, 1984, 75–96.

Hayes 1983 — J. W. Hayes, The Villa Dionysos Excavations, Knossos: the Pottery. Annu. British School Athens 78, 1983, 97–170.