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## SUPPLYING WINE, OLIVE OIL AND FISH PRODUCTS TO THE LOWER DANUBE FRONTIER (2<sup>ND</sup>-7<sup>TH</sup> CENTURY AD): THE CASE OF *DINOGETIA*

*The authors present amphora discoveries made at Dinogetia during the last eighty years of excavations. The large quantities of ceramic material serve as a proxy for the wine, olive oil, and fish-based commodities imported to this remote fortress. It sheds new light on ancient supply modalities, which included both free trade and state-controlled provisions for the Roman troops stationed at Dinogetia. At the same time the results of this study can be extrapolated to many other small fortresses on the lower Danube and have good parallels at Iatrus, Capidava, and Murighiol. If for the large variety of vintage wine and fish-based products we can infer a private trade, for olive oil, especially in the later Roman period, we may infer the activities of the *annona militaris*. The presence of these imports until the very end of this fortification shows that the imperial authorities paid good care to the *limitanei*, which were not simply paysan-soldiers but active and efficient defenders of the Roman frontier.*

*Annona militaris – Dinogetia – wine – olive oil – fish-based products – amphorae*

### 1. Introduction

It is well known that supplying the Roman army was a perpetual concern for the Roman government. The peace and prosperity of the Empire was guaranteed by the fidelity of Roman troops, and preserving this loyalty could be done only through an efficient supply of troops with all their requirements. Some of these have been already inferred from written source and also from archaeological findings. Among these discoveries, amphorae occupy a privileged place as they have a robust manufacture and do not disappear as organic materials do.

The great advance that took place during the last 50 years in understanding amphora typologies and chronologies allows us to have a better understanding of some of the supplies that reached the Lower Danube *limes*. The pottery studies of *Dinogetia* are an important addition to previous studies published on the pottery discovered at other sites in this area, particularly at Topraichioi (Opaïț 1991a), Murighiol (Opaïț 1991b; Topoleanu 2000), Troesmis (Opaïț 1980a; Opaïț 1980b), Ibida (Opaïț 1991d; Honcu 2017), Capidava (Opriș 2003; Opriș and Rațiu 2017), Tomis (Opaïț 1997/1998; Băjenaru 2013), and Ulmetum (Băjenaru, forthcoming). They also supplement studies on Roman pottery discovered in the lower Danube area (Rădulescu 1976; Scorpan 1977; Opaïț 2004a; 2004b; Paraschiv 2006).

However, in comparison with most of these sites, *Dinogetia*, at least during the late Roman era, had reduced dimensions of c. 1,2 ha. It was founded on a small island at a strategic point where the Danube turns east towards the Black Sea and at the confluence of the river Siret and the Danube (fig. 1). Archaeological excavations began in 1939 and have continued with short periods of interruption until the modern day. Limited space allows us to present only a brief selection of the main containers that were used to supply this small fortress with both staples and luxury products.

*Dinogetia* began most likely in pre-Roman times as a Getic settlement, as its name implies. Its occupation continued throughout early, middle and late Roman times until the beginning of the 7<sup>th</sup> century. It experienced its last habitation during the 10<sup>th</sup> and 11<sup>th</sup> centuries. The majority of archaeological material comes from the late Roman and Byzantine eras, the latter occupation already published (Ștefan et al. 1957; Ștefan et al. 1967).

### 2. Early Roman period

#### 2.1. Local wine

That the inhabitants of this settlement drank a wine made locally is demonstrated by the presence of table amphorae and table pitchers. Table amphorae usually have a globular body and a ring base with sturdy, rounded, twisted or strap-like handles (fig. 2, 1), while the table pitchers have a short, cylindrical neck, a strap-like handle, and a conical body ending in a trapezoidal, tubular base (fig. 2, 2) (Ștefan et al. 1953: 264, fig. 24.1). It is worth noting that almost identical variants of table amphorae have been discovered in the vicinity at Troesmis (Opaïț 1980a: 291-294, pl. I.1, 3-4), the headquarter of *Legio V Macedonica*, and the castrum of Barboși (Sanie 1981: 137, pl. 13.5), suggesting a common *officina* that manufactured these vessels. However, the fabrics of the table pitchers are varied, thus suggesting a multitude of supply sources.

#### 2.2. Imported wine

An important place in this category is occupied by regional Pontic wines produced on either the southern or northern



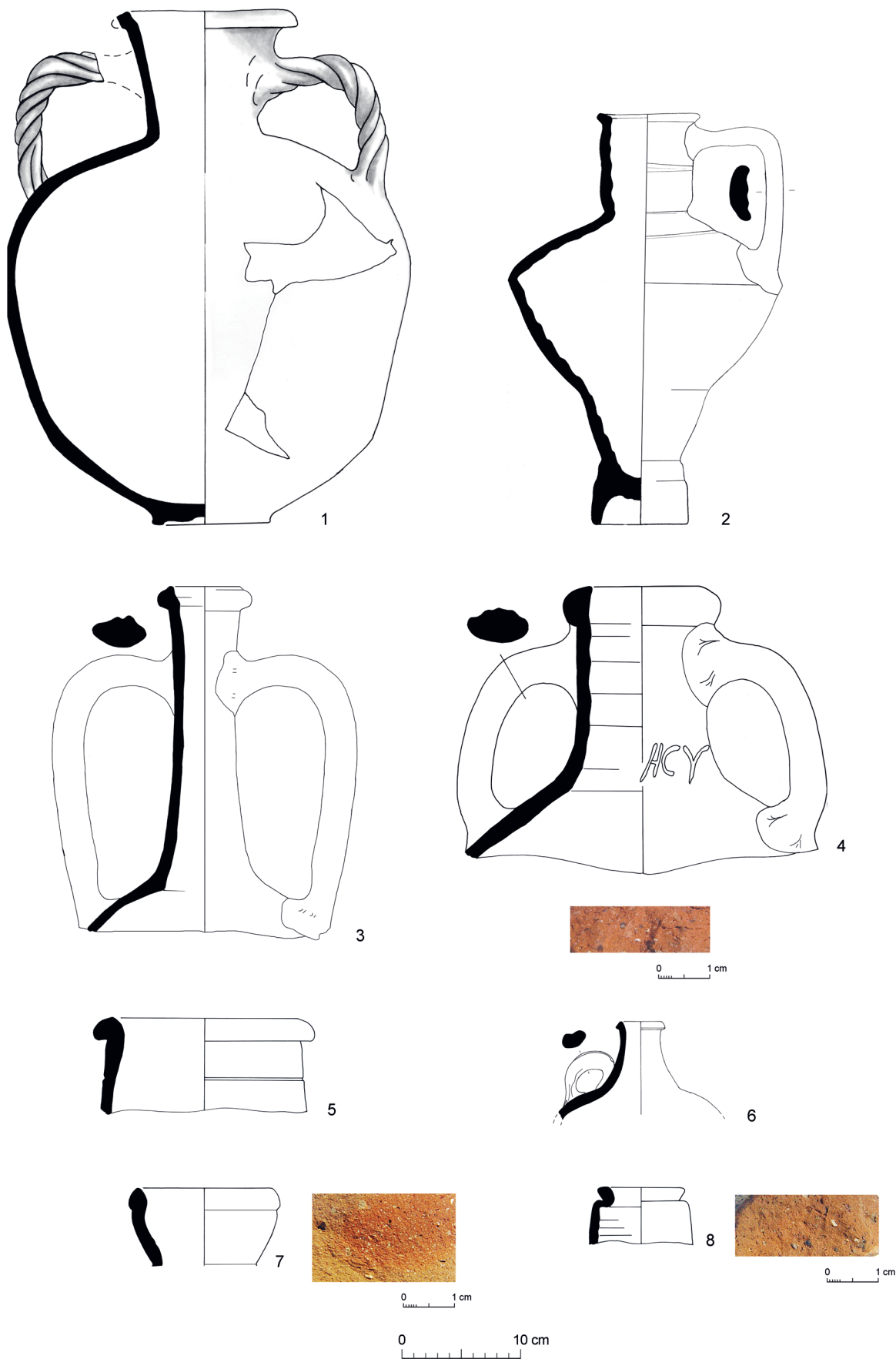
Fig. 1. Map of Scythia.

coasts. In the former group, Heraclea occupies a prominent place (fig. 2, 3), but the absence of Sinopean wine is perhaps due to the limited excavations of early Roman layers. Northern Pontic wine is represented by amphorae of Zeest 72 type (fig. 2, 4). Aegean wine containers, in spite of the small area of excavation, is well represented in *Dinogetia*'s market. The wine amphora known to us as Troesmis X is a large vessel with a capacity varying between 60 and 67 litres (fig. 2, 5). Many body fragments of this type discovered at Ibida were lined with pitch on the interior. The wine it contained was intensively consumed both north and south of the Danube, as well as on the north Pontic shore (see the bibliography of these findings in Opaïț 2017: 585) with some containers even reaching Athens (Opaïț 2015). An origin in the north Aegean or even the Pontic area is not excluded.

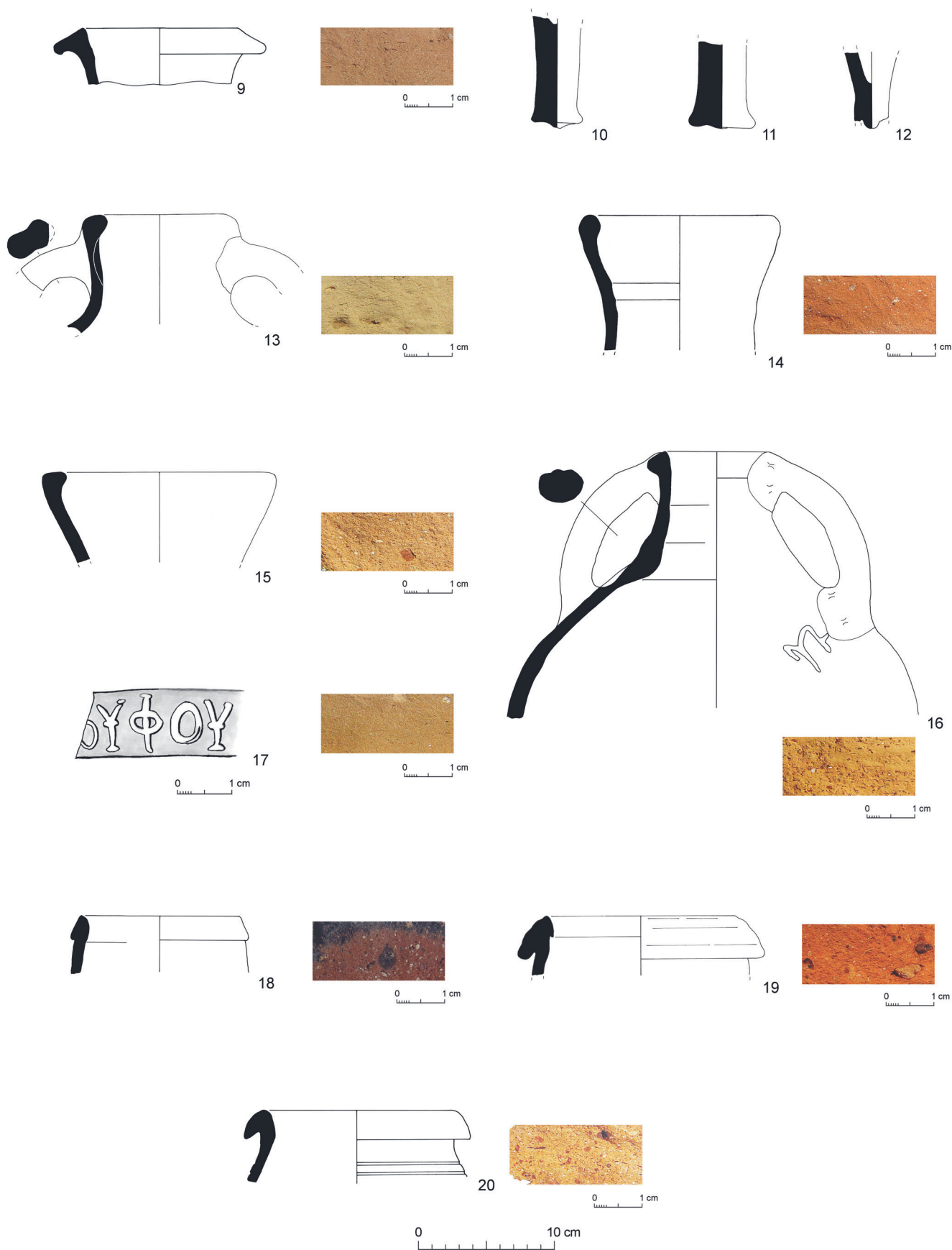
In addition to this type there are some amphorae from Ephesos, Mid Roman 3 (Riley 1979: 183-186) (fig. 2, 6), perhaps made in the Meander valley area (Hayes 1976: 117;

Peacock and Williams 1986: 188; Bezeczky 2013: 165). The Aegean islands are well represented by amphorae from Samos (fig. 2, 7)<sup>1</sup> and Chios (fig. 2, 8), (considered as predecessors of Kapitän 2; cf. Opaïț forthcoming a) and an isolated example is similar to Peacock and Williams class 50 (fig. 3, 9) (Peacock and Williams 1986: 200-201), which is well known in the lower Danube area (Opaïț 2017: 589-590). Numerous also are the spikes that belong to an imitation of a Cretan amphora (fig. 3, 10-11) (Opaïț 2017: 590), and Zeest 67 type (fig. 3, 12) (Zeest 1960: 110-111, pl. 29 (67); Opaïț 2017: 590). Two fragmentary examples belong to a cylindrical amphora that previously was considered to be made in the Aegean (Opaïț 2014: 50-52, fig. 24-26), but at least one variant was made in Cilicia (Opaïț, Davis and Brennan 2018) (fig. 3, 13a-b).

<sup>1</sup> The petrographic analyses have been made by M. A. Cau Ontiveros and L. Fantuzzi, University of Barcelona.



**Fig. 2.** 1. Table amphora; 2. Table pitcher; 3. Shelov B amphora type; 4. Zeest 72 amphora type; 5. Troesmis X amphora type; 6. Proto LRA 3 amphora type; 7. Samos amphora type; 8. Proto Kapitän 2 (Chian) amphora type.



**Fig. 3.** 9. Peacock & Williams type 50; 10-11. Unknown Aegean amphora types; 12. Zeest 67 type; 13. Cylindrical Aegean (?) amphora type; 14. Dressel 24 similis amphora type; 15. Dressel 24 amphora type; 16. San Lorenzo amphora type; 17. Dressel 24 similis amphora stamp; 18. Zeest 83 amphora type; 19-20. North Pontic amphora type.

### 2.3. Imported olive oil

The quantities of olive oil that arrived at this site are quite impressive if we take into consideration both the large volume of olive oil amphorae (c. 60-70 litres each) and the limited early Roman contexts so far excavated. The predominant type, of course, is Dr 24 *similis* (fig. 3, 14), represented by c. 12 examples, 2 examples of Dr 24 (fig. 3, 15), and by c. 3 examples of San Lorenzo 7 (figs. 3, 16). Just one example belongs to Zeest 80. Among Dr 24 *similis* fragments is a remarkable stamp on the amphora neck with the *officinator*'s name: [‘P]ούφου (Ştefan, Barnea and Mitrea 1957: 206, fig. 11) (figs. 3, 17).

### 2.4. Imported fish products

The presence of three rim fragments of north Pontic fish amphorae is significant. One of them belongs to Zeest 83 (Zeest 1960: 115-116, pl. 34.83) (fig. 3, 18), whose workshop has been found recently at Panticapaeum (Yermolin and Fedoseev 2013), while the other two fragments are yet to be classified. Only one of them has parallels at Chersonesos (Sovhoz 10) (Strjeletskii et al. 2005: 69, pl. VI.2; Opaït 2007: 113, fig. 21) (fig. 3, 19), while the other does not (fig. 3, 20). However, what is important is the presence of imported processed fish on a site near the Danube that could supply plenty of local fish to the local diet. The situation is similar to that observed at Callatis, a maritime city, which also imported quite a lot of north Pontic processed fish (Opaït and Ionescu 2016). A possible explanation, in both cases, would be that the local elite wanted to show their status, even during winter when access to fresh fish was difficult, and conserved fish was important for preserving their diet and social status.

## 3. Late Roman period

The late Roman layers of *Dinogetia* have benefited from much closer archaeological attention. Therefore, the numbers of artifacts are greater and the statistics more reliable.

### 3.1. Local wine

Only table amphorae have survived the competition with table pitchers, the former vessels being attested until the 6<sup>th</sup> century not only at *Dinogetia* but in the whole province (Opaït 2004a: 4-5) (fig. 4, 21). The provincial wine was distributed at *Dinogetia* in amphorae of type Kuzmanov 15 (fig. 4, 22), manufactured perhaps in the northern part of the province of Scythia. The iron rich fabric of these amphorae suggests a manufacturing in an area around Niculiţel.

### 3.2. Pontic wine

This regional wine is well represented by southern production centres. Heraclea is represented by amphorae of type Shelov F and by an imitation of the Sinope carrot amphora mainly during

the 4<sup>th</sup> century. The presence of Sinopean wine is also indicated by some carrot amphorae of Kassab Tezgör Type C Snp I (Kassab-Tezgör 2010: 128-129) (fig. 4, 23). However, the most represented is another south Pontic centre (Amastris?), which is a Pontic copy of LRA 1 (fig. 4, 24), and it will predominate especially during the 5<sup>th</sup> and 6<sup>th</sup> century (Opaït forthcoming b).

### 3.3. Aegean and Levantine wine

These two main amphora groups arrived at *Dinogetia* in large quantities. To the first belongs the bag-shaped amphorae consisting of a large variety of subtypes and variants, recently analysed (Opaït 2004a: 17-18; Opaït 2004b: 302-303; Şenol 2009: 251-256) (fig. 4, 25). The second group belongs to the well-known LRA 1 type (Opaït 2017: 595-597) (fig. 5, 26). Supplementary wine was provided by LRA 3 (fig. 5, 27) and LRA 4 (fig. 5, 28) but in much reduced quantities. Other occasional vintages were carried by a small Aegean carrot amphora, typical of the 4<sup>th</sup> century (Opaït 2004a: 16) (fig. 5, 29).

### 3.4. Cretan wine

Cretan wine containers are a rare but consistent occurrence at *Dinogetia* during the 4<sup>th</sup> century (Böttger 1992: 344, n.71; Portale and Romeo 2001: 276; Robinson 1959: 68, pl. 15, K 112; Yangaki 2005: 185, fig. 47) (fig. 5, 30) and the 6<sup>th</sup> century (Portale and Romeo 2001: 306-308, TRC 3 and TRC5, pls. XLV.f-g; LIII.a-c, f; Rendini 1997: 374, pl. CXLVIII.a-c) (fig. 6, 31). Its presence was increased especially in the 6<sup>th</sup> century in the province of Scythia (Opaït 2004a: 24, pl. 15; Opaït 2017: 598-599; Paraschiv 2006: 102, 118-119, pl. 28).

### 3.5. Sicilian wine

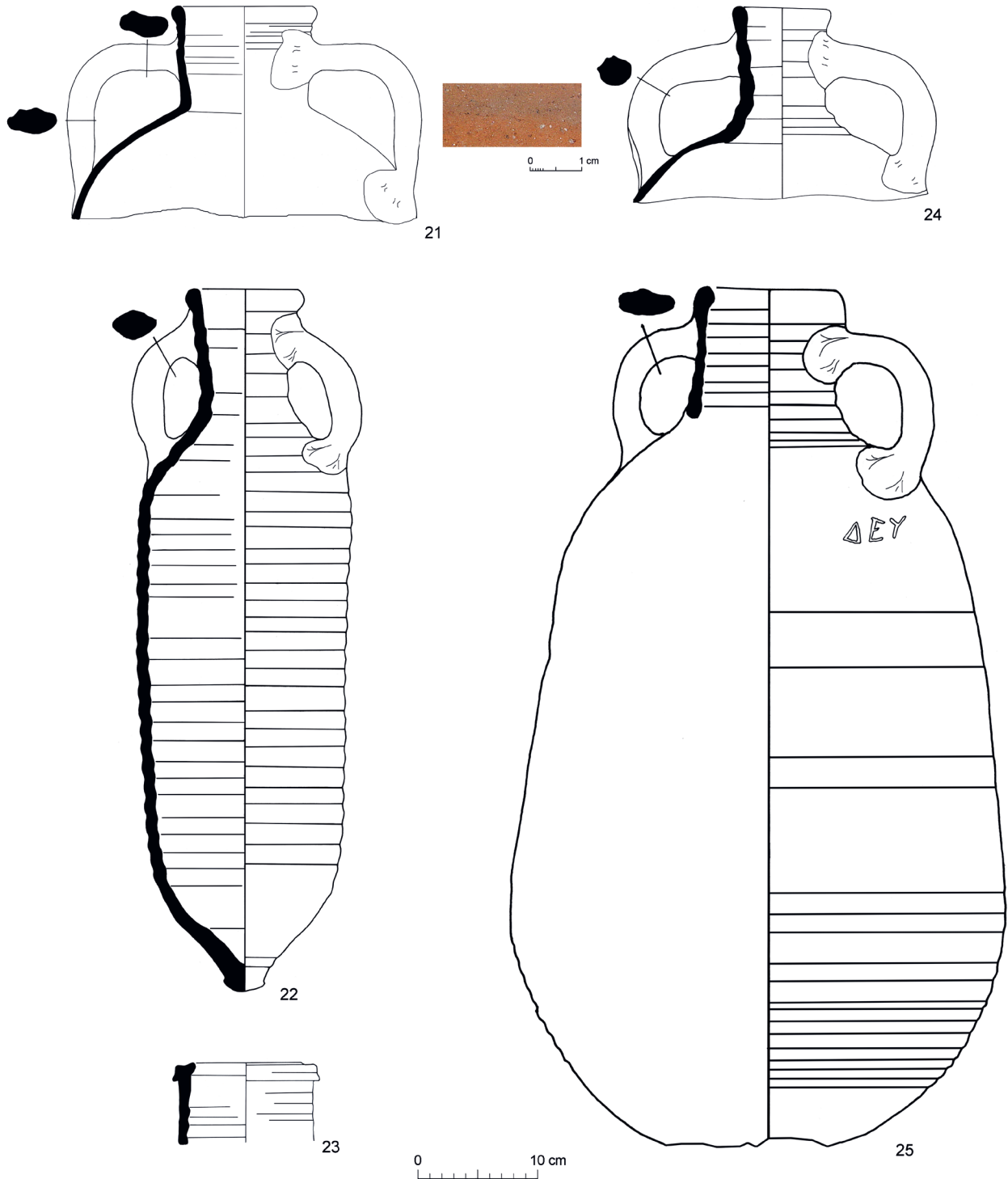
A handle of a Keay 52 amphora attests the presence of a rare vintage in this remote corner of the Roman empire (fig. 6, 32). This discovery is in addition to other finds of this type uncovered at Tomis and Murighiol (Paraschiv 2006: 61-62, pl. 13.8-9).

### 3.6. Imported olive oil

Aegean olive oil continued to be imported in large quantities to judge from the 42 diagnostic fragments and 46 lids of LRA 2 (fig. 6, 33-34). Additional olive oil arrived in amphorae of Zeest 80 type, probably of north Aegean origin; although this type was present at other site during early Roman times, at *Dinogetia* it occurs mainly during the 4<sup>th</sup> and the 5<sup>th</sup> century (Barnea 1966: 244, fig. 8.6) (fig. 6, 35). New olive oil arrived from regions farther away, such as North Africa and Spain. The former area is quite well represented by several types, including a late variant of Africana II B (Panella 1973: 585-586; Manacorda 1977: 162; Bonifay 2004: 114) (fig. 6, 36), Keay 57/Bonifay 42 (Keay 1984: 298-299; Bonifay 2004: 135-137) (fig. 6, 37), Keay 8B/Bonifay 38 (Keay 1984: 126-

129; Bonifay 2004: 132) (**fig. 7, 38**), Keay 62Q/Bonifay 45 (Keay 1984: 334; Bonifay 2004: 137 (**fig. 7, 39**), Spatheia-Keay 25 K-V/Bonifay 28 (Keay 1984: 187-189; Bonifay 2004: 119) (**fig. 7, 40**), late Spatheia-Bonifay 33 (Bonifay 2004: 127) (**fig. 7, 41**), and a late Tripolitanian subtype, Bonifay 20 (Bonifay 2004: 105-107) (**figs. 7, 42**). The presence of Spanish olive oil is suggested by three fragmentary examples of type Dressel 23b-c/Keay XIII b-c (Berni Millet 1998: 61;

Keay 1984: 140-141, figs. 55-56) or groups 1 & 2 (Berni Millet and Moros Díaz 2012: 207, fig. 18); all of them exhibit different rim profiles and upper handle attachments, which is a characteristic of late Roman Spanish production (Berni Millet 1998: 58) (**fig. 7, 43-44**). To these fragments should be added a stamp, which can be a retrograde inscription read by the amiability of P. Berni Millet as: [---]VATI? [---]NATI? (**fig. 7, 45**). All can be dated to the first half of the 5<sup>th</sup> century.



**Fig. 4.** 21. Table amphora; 22. Kuzmanov 15 amphora type; 23. Sinopean carrot amphora type; 24. South Pontic (Amastris?) amphora type; 25. Bag-shaped amphora type.

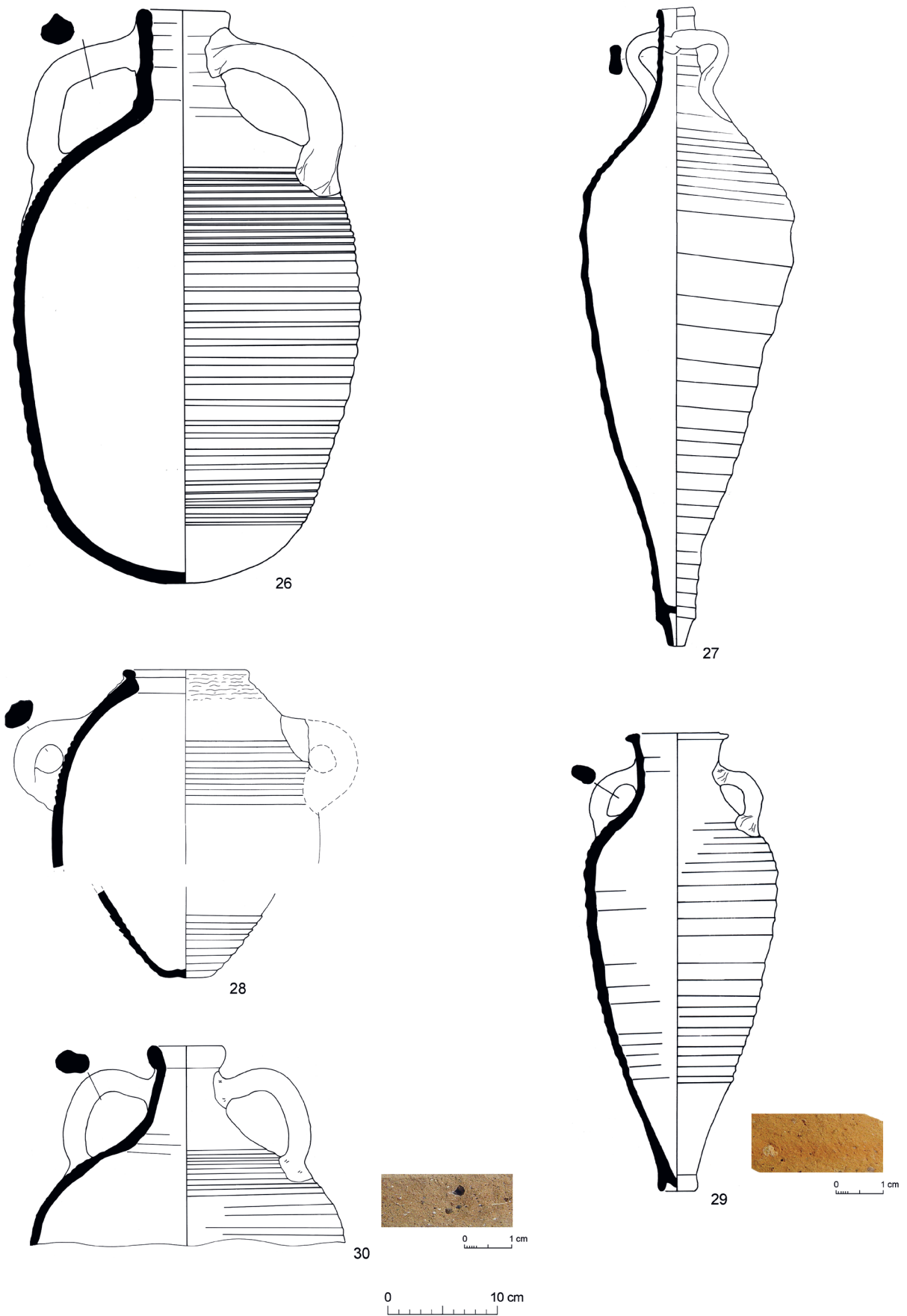
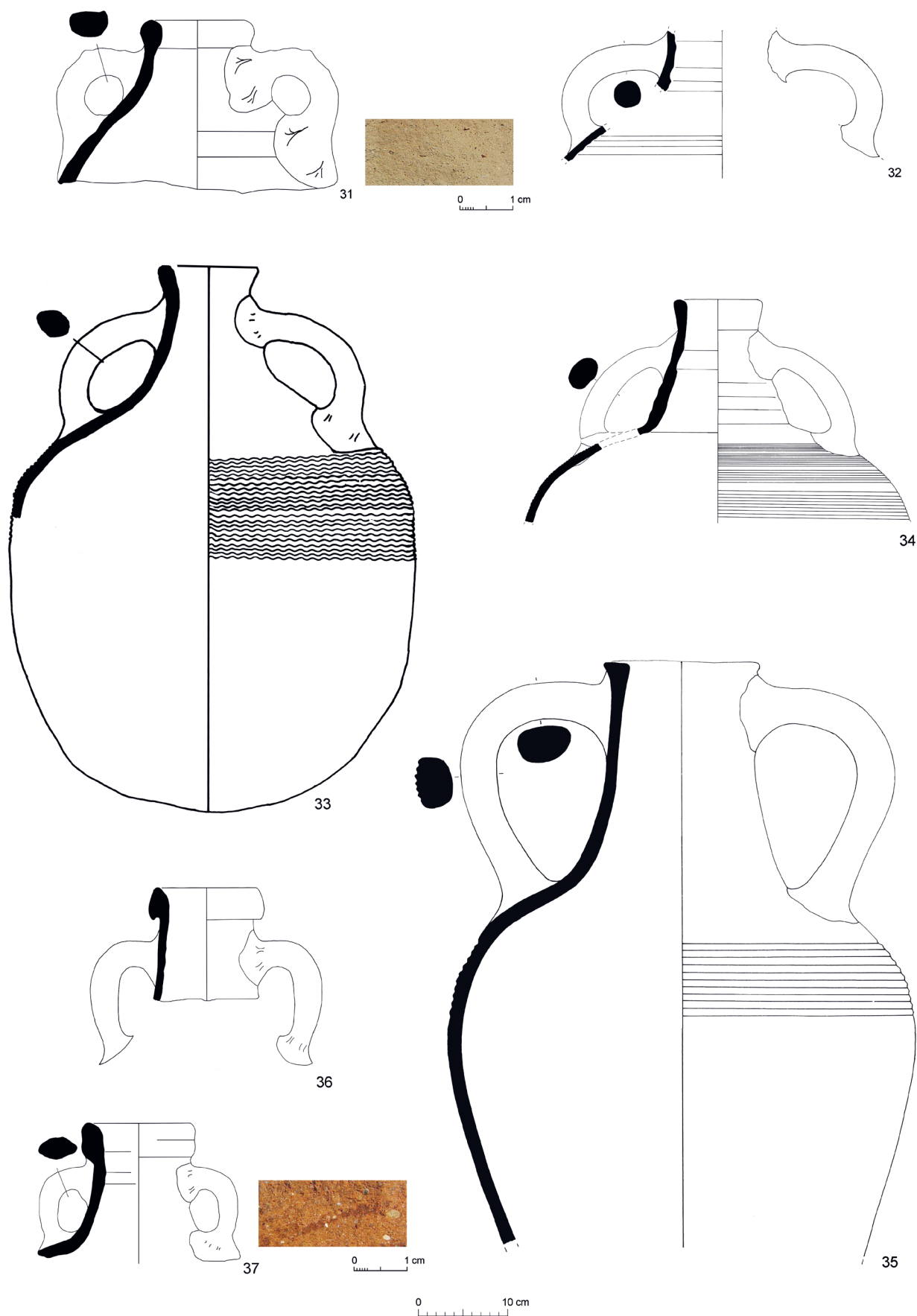


Fig. 5. 26. LRA 1; 27. LRA 3; 28. LRA 4; 29. Aegean carrot amphora type; 30. Cretan amphora type.



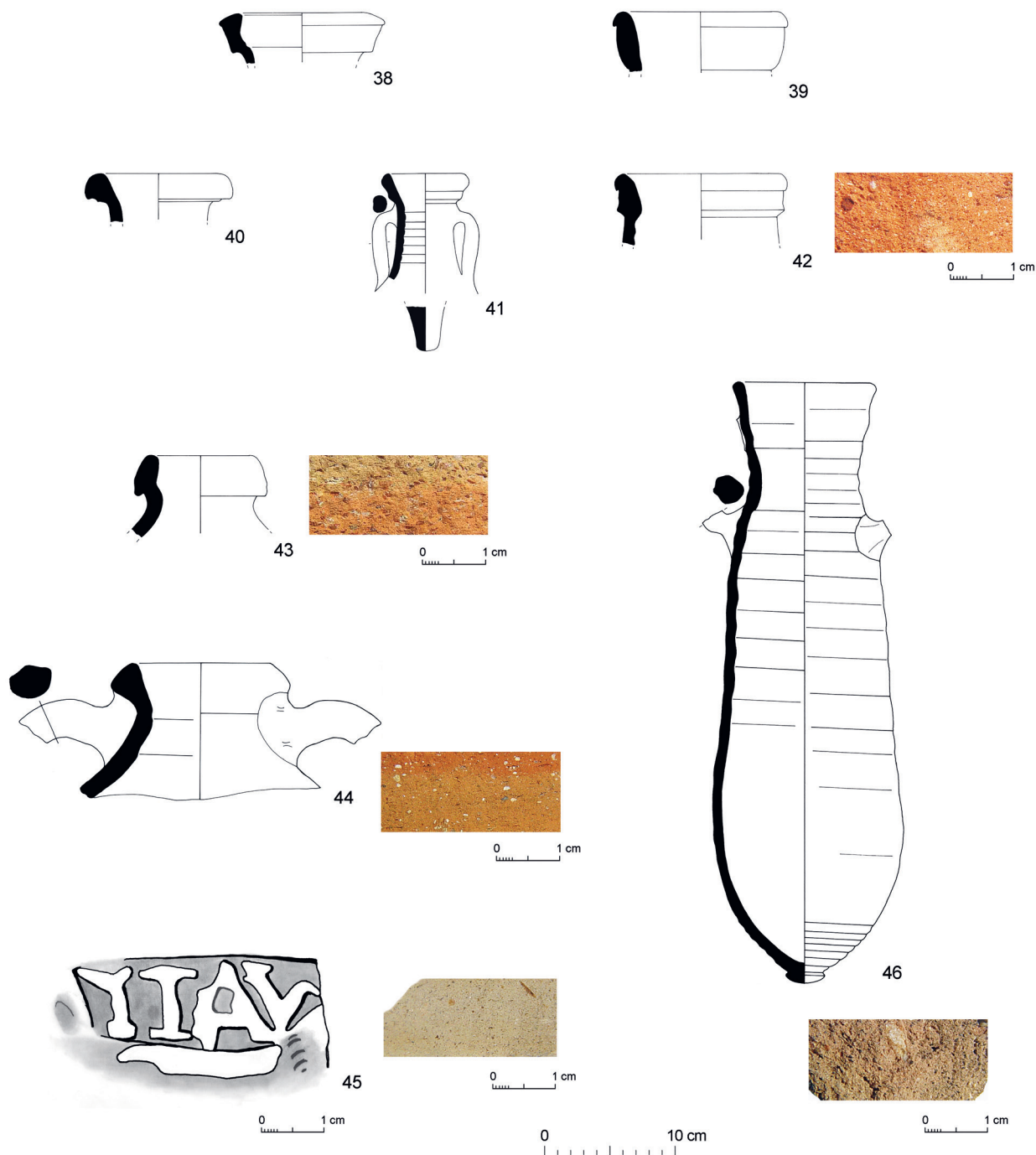
**Fig. 6.** 31. Cretan amphora type; 32. Keay 52 amphora type; 33-34. LRA 2; 35. Zeest 80 amphora type; 36. Africana IIB; 37. Keay 57/Bonifay 42 amphora type.



### 3.7. Imported fish product

The documentation of imported, fish-based commodities at *Dinogetia* during late Roman times is limited to only a single amphora (fig. 7, 46). This example has good parallels in Scythia at Beroe (Opaiț 2004a: 39-40), Iatrus (Böttger 1982: 124, no. 361, pl. 13b, 29/361), and Histria (unpublished

example). It belongs to a subtype that seems to be a variant of Beltran form 70 (Beltrán 1970: 573, fig. 236.3). Perhaps it is the latest evolution of the early Roman Beltran 72 type and of an amphora found on the Cabrera III shipwreck dating to the second half of the 3<sup>rd</sup> century (Bost et al. 1992: 132-134, figs. 29-31).



**Fig. 7.** 38. Keay 8B/Bonifay 38 amphora type; 39. Keay 62Q/Bonifay 45 amphora; 40. Spatheia-Keay 25 K-V/Bonifay 28 amphora type; 41. Late Spatheia-Bonifay 33 amphora type; 42. Late Tripolitanian subtype/Bonifay 20 amphora type; 43. Dressel 23b-c/Keay XIII b-c amphora type; 44. Dressel 23b-c/Keay XIII b-c amphora type; 45. Dressel 23 amphora stamp; 46. Beltrán Form 70-late variant amphora type.

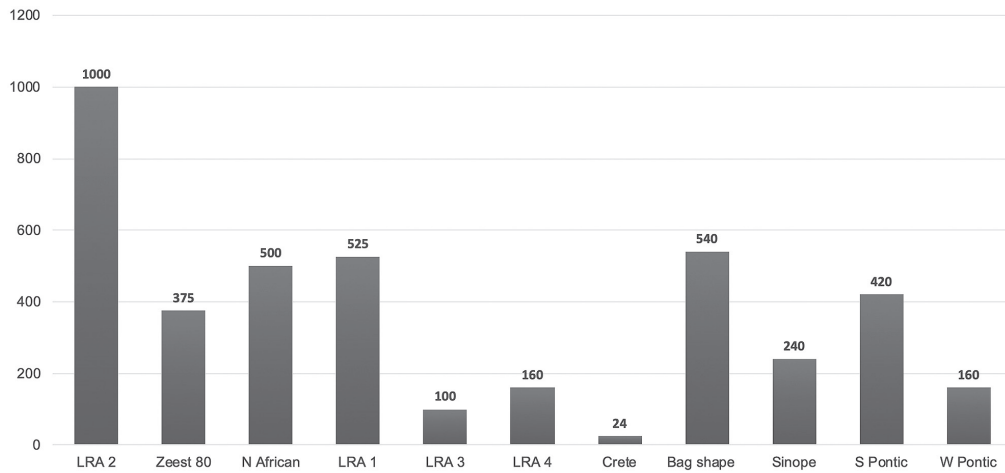


Fig. 8. *Dinogetia*. Late Roman period: amphora volume.

#### 4. Conclusions

After this brief overview of the main amphora types identified at *Dinogetia*, a few considerations should be made. It is clear that two different modalities of supply were involved in provisioning this small fortification. One, most likely private trade, was responsible for supplying fancy vintage wine and fish products, while another, the Roman government, supplied olive oil among many other things. With this combination of supply sources, the military forces that occupied the site had a variety of dietary choices (fig. 8).

In quantitative terms, vintage wine represents only a small percentage of the wine consumed at this settlement, mostly by elites. Ordinary people and soldiers, including the *limitanei* with their reduced financial resources (Treadgold 2014), drank huge quantities of *posca* and table wine, as the abundant presence of table pitchers and amphorae suggests (fig. 9, 1-2).

However, the presence of such varieties of vintage wine, both in early and late Roman times, demonstrates the existence of a very sophisticated network of logistics able to transport such a low-bulk and high-quality product. Also, the large variety of wines proves the existence of a chic clientele able to pay for satisfying their educated palate. The local market is dominated only by Pontic and Aegean vintages. On the other hand, the presence of huge quantities of wine carried in LRA 1 amphorae seems to indicate that wine had also become part of the *annona* system, probably in the context of a sharp decrease in local production as the countryside was depleted and depopulated. Due to the dissolution of the countryside, it is most likely that the Roman government took the decision to allow *limitanei milites*, the soldiers in the border districts, to work lands for their own use and profit (*NTh* XXIV, 1, 4 = *CJ* 1, 60, 3 (12 September, AD 443); Isaac 1988: 145). Abandoning the countryside and living behind a city or fortress wall, but working the neighboring lands, became the norm after 430-450 in the province of Scythia after the collapse of the *vicus* economy (Opaïț *et al.* 1992), a little bit later than the breakdown of the *villa*

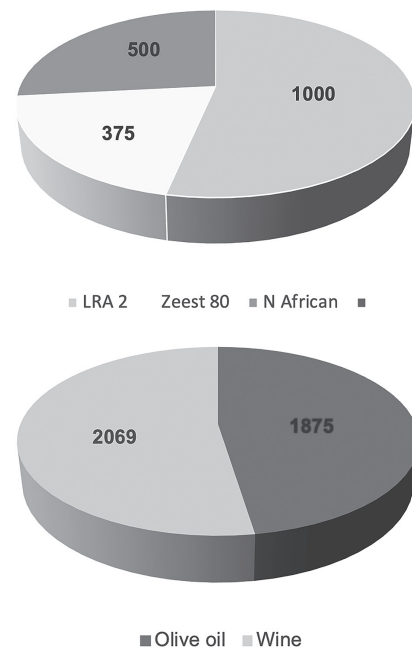


Fig. 9. 1. *Dinogetia* - Late Roman period: olive oil centres (volumes); 2. *Dinogetia* - Late Roman period: Olive oil and wine (volumes).

economy in Thrace, Moesia II, and Dacia Ripensis (Poulter 2013: 74). The high standardization of LRA 1 suggests that it was designed for moving and counting large quantities of wine (Horden and Purcell 2000: 217; Van Alfen 1996).

Imported fish-based commodities are also present but they seem to be in reduced quantities. Faunal analysis points to a high percentage of local fish in the diet of the local population (Nuțu and Stanc 2017: table 1). However, the presence of imported north Pontic processed fish suggests that the local elite, perhaps during the winter, maintained their desire for a fancy fish product.

Olive oil was the dominant imported foodstuff during early and late Roman times. As we have said, only a few amphora types were used for transporting this staple. During the early Roman period the predominant types, not only at *Dinogetia* but also in the whole Lower Danube and Pontic area, were Dr 24 and Dr 24 similis. These were accompanied by San Lorenzo 7 type, which very possibly arrived via private trade as an addition requested by a large variety of customers. There is a spirited debate regarding the time of occurrence of the *annona militaris* but this is not the place for a discussion. Suffice it to say that a legal text mentions the activity of *publicani* who acted based on a contract during the time of Hadrian (Digest, 39.4.4.1). Whether they secured contracts from the *Annona Urbis* or *Annona militaris* is difficult to say.

During Late Roman-early Byzantine period, *Dinogetia*, defended by *Milites Scythici* at least in the 4<sup>th</sup> century (Barnea 2010, 533), maintained a good supply of liquid provisions. There was an abundance of Pontic wines and expensive Aegean vintages (Bag-shaped and LRA 3), to which comes the important contribution of Levantine (LRA 1 and LRA 4), and few North African wines (Spatheion types) (fig. 9, 2).

Olive oil continue to be imported predominantly from the Aegean and Peloponnesian areas (fig. 9, 1). However, this is the time when North African olive oil, in a period when North Africa was occupied by the Vandals, makes a strong appearance, not only at *Dinogetia* but in the whole Pontic area. A similar situation existed at Iatrus (Böttger 1982; Conrad 1999; 2007), and Murighiol (Opaïț 1991a; Topoleanu 2000). As we can see, LRA 2 and N African amphorae were the basic containers for delivering olive oil at Iatrus, while at *Dinogetia* we have the addition of Zeest 80.

The constant occurrence of N African and even Spanish olive oil amphorae – not only on many Lower Danube sites but also those around the Pontic basin – leads us to reconsider the prevalence of official distribution versus private trade. What is important to stress is the period of this trade, which is after the settlement of Vandals in North Africa and the Visigoths in the Iberian Peninsula. After the Vandal conquest

much of the North African olive oil and grain were sold on the free market instead of going to Rome and the army as taxes (Fulford 1984: 259; Panella 1993: 641-653; Wickham 2005: 88-92; Von Rummel 2011: 37). The Eastern Empire seems to have taken advantage of this situation and engaged in an intensive trade with North Africa, and in some cases even with Spain, finding additional sources to supply its military forces. However, the main base of olive oil supply was the Peloponnesian and the western coasts of Asia Minor, which sent perhaps millions of LRA 2 amphorae to supply the capital and the fortresses of the Lower Danube.

If we have plenty of legal texts from the 4<sup>th</sup> century that attest to governmental attention for supplying foodstuffs at the frontiers (*CTh* XI, 1, 11 (AD 365); VII, 415 (AD 369); XII, 1, 21 (AD 385); *CJ* XI, 60, 1 (AD 385); XI, 62, 8 (AD 386), cited by Isaac 1988: 143), the intensification of LRA 1 and LRA 2 on the Danubian border from the 5<sup>th</sup> century until AD 610-615 suggests that the government continued to have a constant concern for the diet and life standards of its defenders. A diet based on olive oil supports the idea that that this army was not barbarized (Nicasie 1998; Stickler 2007; Guégan 2017), although by the end of the 4<sup>th</sup> and the first half of the 5<sup>th</sup> century some groups characterized by their heterogeneous population penetrated the empire. Their vessels, however, characterized by dark gray fabrics and burnished surfaces, are present in very reduced quantities in the fortresses of Scythia (Opaïț 1991e). Recently, (Poulter 2013: 69) remarked that a “change in fashion need not have any implications for the ethnicity of the population”. We agree that the Gothic element was only part of this mixture of populations, and that they were under the strong influence of the local, north Danubian population, but this type of pottery is found not only north of the Danube but also between the Prut and Dniester rivers, as well as in the Crimea (Levada and Samoiylenko 2006; Kazanski 2002; A. Opaïț, pers. observation in the Chersonesos museum store room). Therefore, it is difficult to see these soldiers only as a ‘poor peasant militia’, as long the government took care of them until the very abandoning of this province.

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