The Circulation of Ceramic Fine Wares and Transport Amphorae from the Black Sea Region in the Mediterranean, c. 400 BC–AD 200

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Introduction

Scholars have investigated many aspects of pottery manufacture and use in the Pontic region,[1] and some have gathered evidence for the occurrence in the Mediterranean of specific wares made in the Black Sea region,[2] but this contribution may be the first to focus on the overall pattern of such finds.

A complete review of the material can hardly be attempted at the present time due to the scattered and uncertain character of the available evidence, and the aim of this contribution is accordingly limited to drawing preliminary conclusions about the relations between the two areas from the 4th century BC until about AD 200, based on the finds of Pontic transport amphorae and ceramic fine wares in the Mediterranean, which are known to the author.

This study can only take transport amphorae and ceramic fine wares into account, because other ceramic products from the Pontic region have not apparently been identified in the Mediterranean. However, those two categories are well suited for such an enquiry; transport amphorae are generally regarded as a prime archaeological source for ancient trade and exchange mechanisms because they provide direct evidence of the movement of agricultural products such as wine, olive oil or fish products,[3] and the ceramic fine wares were also objects of trade even if they had far less intrinsic value.[4] This emerges, for instance, from finds made in shipwrecks, for instance the 761 sigillata bowls (from La Graufesenque) and 1,475 thin-walled pottery jars, which have been salvaged from a merchant ship that sank off the Catalan-French coast between AD 78 and 82.[5] Granted, its main cargo consisted of 79 Dressel 20 amphorae containing ca. 4,900 litres of olive oil from southern Spain,[6] but mixed cargoes are preponderant among shipwrecks throughout Classical antiquity.[7]

Methodological challenges

Some of the methodological issues that beset any study of pottery as evidence of economic exchanges are particularly relevant to an investigation centring on the pottery of the Black Sea region.

It is – for instance – widely recognized that distribution maps often reflect the intensity of scholarly research rather than the actual distribution of artefacts. But in the present case, there is the additional problem that few pottery specialists working in the Mediterranean have first-hand knowledge of products from the Black Sea area, and they are therefore liable to overlook occurrences of pottery from that region. Indeed, Black Sea archaeologists are often capable of spotting Pontic products in the Mediterranean that might otherwise have gone unnoticed. Dominique Kassab Tezgör and May Touma were thus able to identify Sinopean light-coloured clay amphorae from an amphora production site at Dermirci, 15 kilometres east of Sinope, at three sites in northern Syria and Kilikia[8] – an identification, that was later confirmed by scientific clay analyses. Kassab Tezgör went on to identify similar amphorae "all along the Syrian coast",[9] of which most – if not all – postdate the time frame under consideration here.[10]

Another methodological concern is that the geographical sources of much of the pottery produced in the Black Sea region remain undetermined. It is even debated whether certain types of transport amphorae were made there or not. A case in point is an amphora type often referred to as Zeest 80, which emerged by the end of the first century AD and was produced until about AD 240 or even later.[11] John A. Riley suggested a probable North Aegean or Black Sea origin,[12] whereas Kathleen Slane was inclined to associate it with the source of the Kapitän II amphorae (presumably the area of Ephesos and possibly also Samos).[13] Peter Dyczek likewise seeks an origin for the type in Asia Minor, but he opts for "Pamphylia in particular", and other scholars maintain that the source should be sought in the Bosporos.[14] Similar doubts have been raised about the source of the form Zeest 73, which some scholars consider a product of the northern Black Sea region, whereas Hayes regard it as "probably from the Aegean region".[15] Clearly, scholars need to agree about the geographical origin of these and other similarly disputed amphora types, before they can throw light on the questions, which concern us here. Accordingly, this contribution only takes those amphora classes into account, which are commonly agreed to originate in the Black Sea region.

The late Classical and Hellenistic period

Françoise Alabe (1986) and Norbert Kramer (2002) have previously presented some of the evidence for occurrences of stamped amphorae from the Black Sea in the Mediterranean, and Yvon Garlan discusses the full range of these

finds in his contribution to this volume. I shall therefore limit myself to summarizing the evidence.

Garlan documents that stamped amphorae from three Black Sea centres have been identified in the Mediterranean: Sinope accounts for the largest number of occurrences (177 stamps), followed by Chersonesos (22 examples), and Herakleia Pontike (three specimens). He notes that 56 % of the stamps have been brought to light in Athens and that Rhodos is the second largest find spot with 14 %, and that nearly two thirds of the stamps date from period VI, i.e. between 253 and 185 BC.[16] A few find spots may now be added to those listed by Garlan (for Sinope: Demetrias,[17] Ilion,[18] Assos,[19] Paphos[20]; for Chersonesos: Demetrias;[21] and for Herakleia: Magnesia[22]), but the overall distribution pattern remains unaltered.

Yet, what do these figures actually mean? Niculae Conovici published 652 Sinopean amphora stamps found at Istros,[23] which implies that this site alone has yielded three to four times more such stamps than the entire Mediterranean region. Also, N.F. Fedoseev has established a database of stamps from Sinope, which comprised more than 15.000 specimens in 1993.[24] Those found in the Mediterranean constitute little more than one percent of these, and it must be concluded that the vast majority of stamped Sinopean amphorae were marketed in the Black Sea region – not in the Mediterranean.

The same conclusion is reached, when one looks at the evidence from the consumer's point of view, so to speak. In 1999, Gerhard Jöhrens published a comprehensive catalogue of amphora stamps from Athens, which had been copied by the scholar Habbo Gerhardus Lolling at the end of the 19th century. It emerged that only six out of 2,969 stamps came from amphorae produced in the Black Sea Region (five from Sinope and one possibly from Chersonesos), i.e. about a fifth of one percent.[25] Caution needs of course to be applied, since the rate of stamping varied from one amphora-producing centre to the next, but new evidence from three kiln sites at Sinope suggests that between 80, 88 and 91 % of the amphorae produced there were stamped,[26] and it is difficult to escape the conclusion that stamped amphorae from the Black Sea played an almost negligible role even in Athens, which according to Garlan was the major receiver of stamped transport amphorae from the Black Sea region in the entire Mediterranean.

In 1982, Jean-Yves Empereur stressed the importance of taking the evidence of un-stamped amphorae into account, and Mark L. Lawall has recently reasserted the need for doing this,[27] even if such an approach is made difficult by the extreme scarcity of publications of quantified ceramic material from datable eastern Mediterranean contexts. Lawall referred to Black Sea amphorae in deposits in the Athenian Agora of Hellenistic I date (325-240 BC) "as part of a frequently appearing class (but the identification of many of these types is problematic)", but he noted that Pontic amphorae are few in Agora deposits of the Hellenistic II (230-170 BC) and Hellenistic III (170-86 BC) periods.[28] They were likewise scarce at Ilion in Asia Minor, where Lawall compared a

base found in sector D9 to Black Sea amphorae of the third quarter of the 4th century BC.[29] In Context H2a, which is dated between about 225 and 175 BC, he signals the presence of one Chersonesian amphora toe and three "possible Black Sea" types of a coarser fabric, which are loosely paralleled with Kolchidian amphorae, among 155 amphora fragments.[30] Amphorae from the Black Sea thus constituted no more than between 0.65 and 2.58 percent of finds in this context.

Tamas Beszeczky has kindly informed me of the finding of a stamped handle, probably from a Sinopean amphora, in a context at Ephesos of the early 2nd century BC (or earlier), and of the occurrence of a rim fragment, which may be a Black Sea version of the Dressel 2-4 type, in a context from the second part of the 1st century BC. Black Sea amphorae are absent from Groups 1 and 2 at the Tetragonos Agora in Ephesos, dated at about 200 BC, but one such find occurs in Group 3 (to ca. 10 BC) and 4 (to ca. 50 BC), respectively, corresponding to 0.85 % and 1.52 %, respectively, of the identified amphorae in the two groups.[31]

Francine Blondé identified fragments of at least five Sinopean amphorae in a well group at Thasos that had been deposited after about 330 BC. They constitute nearly 2 % of the imported amphorae in this context and 0.35 % of the total number of amphorae. A further fragment was tentatively referred to Herakleia Pontike.[32]

Krzysztof Domżalski's contribution in this volume shows the difficulties involved in defining regional fine wares of the Black Sea region before the time of the Romans. Things may of course change in the future, but no occurrences of Pontic ceramic fine wares in the Mediterranean in the late Classical and Hellenistic periods seem to be known at the present time. The natural place to look for such imports is Athens, where most of the stamped Black Sea amphorae have been found, but Susan Rotroff did not identify such vessels among the Hellenistic fine wares of the Athenian Agora.[33] Also, a comprehensive bibliography of publications of Hellenistic pottery in Greece and the Aegean between 1980 and 1995 has no references to finds from the Black Sea.[34]

The Roman Period

Several scholars have dealt with the production and circulation of Pontic transport amphorae in the Roman period, but – as previously mentioned – the geographical source of many of them is disputed.[35] An amphora kiln site has, however, been identified at Demirci in the area of Sinope, and scientific clay analyses by Kassab Tezgör and others have provided a basis for distinguishing between products of Sinope, Herakleia and Kolchis.[36]

Judging by what is presently known, few of the amphora classes which were produced in the Black Sea region between the 1st and 3rd centuries AD found their way to the Mediterranean, and then only in small numbers. The type known as Scorpan VII.1,[37] which was apparently manufactured at sev-

eral places in the western Black Sea region,[38] seems to have had the widest distribution (Greece: Argos,[39] Athens[40], Knossos;[41] Turkey: Miletos;[42] Cyprus: Nea Paphos;[43] Libya: Berenike;[44] Malta[45] and Italy: Ostia).[46] It is followed by the so-called "light clay amphorae", Zeest 94, made in Sinope and Herakleia.[47] Such amphorae have been found in Greece (Athens,[48] Corinth (?),[49] and Knossos)[50] they are also documented at Ostia in Italy.[51] Other classes occur more sporadically. The Zeest 75 type,[52] which was apparently made in several production centres in the 2nd and 3rd centuries AD, has been found in Athens[53] and Rome.[54] The contemporary type Zeest 85 similis, which Andrei Opaiț regards as a North Pontic type intended for the transportation of fish products,[55] has been found in Knossos,[56] and in Ostia.[57] Finally, reference should also be made to types 26 and 36 in Hayes' classification of the ceramic finds from the Villa of Dionysos at Knossos.[58] Type 36 is also documented at Corinth, c. AD 200-225/250.[59]

The number of types and find spots is by no means impressive, but it is notable that these Black Sea amphorae of the Roman period had a fairly wide geographical distribution in the Mediterranean. The evidence from the sites where they *do* occur underscores their rarity. At Corinth, Slane only notes one amphora that can "reasonably be attributed to Sinope" between AD 200 and 200-225,[60] and little more than a handful have – as we have seen – been published from Athens, Knossos and Berenike.[61]

Pontic fine wares did reach the Mediterranean in the Roman period, in the form of the so-called Pontic Sigillata. In 1985, Hayes, building on the work of earlier scholars, published what has become the standard classification of this ware, which comprises 13 forms. He dated the group between the 1st and 3rd century AD – possibly extending into the 4th century, but he was unable to identify its geographical source.[62]

Several scholars – notably Domżalski and Denis Žuravlev – have subsequently studied Pontic Sigillata. The latter distinguishes between more than fifty forms in three sub-groups: (a) Pontic Sigillata A, which was mainly produced between the second half of the 1st and the first half of the 2nd century AD (but continued to the middle of the 3rd century AD), (b) Pontic Sigillata B, which mainly dates from the second century AD, and (c) Pontic Sigillata C, which belongs to the 2nd and 3rd centuries. Žuravlev observes that Pontic Sigillata "comes from different centres. Most of them are not determined yet, but we can firmly establish that some forms have parallels with pottery from Butovo and Hotnica", i.e. in the territory of Nicopolis ad Istrum in Bulgaria.[63]

Žuravlev's forthcoming monograph on Pontic Sigillata will presumably answer many of the questions connected with the ware. At present, however, little more can be done than noting that it had a wide – but at the same time sparse and scattered – distribution in the Mediterranean, including the western Mediterranean. The largest concentration ("some 133 sherds") has been brought to light at Berenike in Libya,[64] followed by Knossos in Crete ("total

count 34")[65] and Abdera (23 examples).[66] Fewer examples have been published from other sites (Greece: Athens,[67] Corinth,[68] Keos,[69] and Thasos;[70] Turkey: Antiochia (?),[71] Smyrna,[72] and perhaps Gordion;[73] Italy: Ostia,[74] Pompeii,[75] Portorecanati,[76] Ravenna[77] and Sardinia[78]). At Knossos, Berenike and Ostia, the ware mostly occurs in contexts of the second half of the 1st and the first half of the 2nd centuries AD.[79] It never occurs in large numbers, but the surprising thing is that it is present at all – in view of the stiff competition from other sigillata wares in the Mediterranean.[80]

Conclusions

Despite the difficulties associated with the interpretation of the material, certain preliminary conclusions may be drawn with some confidence.

1) Only up to about 1 to 2 % of the stamped and unstamped transport amphorae produced in the Black Sea region reached the Mediterranean in the late Classical and early Hellenistic periods. The figure may have been even smaller in Roman times.

2) In the late Classical and Hellenistic periods, the circulation of stamped and unstamped amphorae – mainly Sinopean and to a far lesser degree those from Herakleia and Chersonesos – was largely confined to the Aegean. Kramer has rightly underlined the remarkable scarcity of such finds in the Levant and northern Egypt, i.e. the areas under Ptolemaic and Seleukid control. Moreover, no such amphorae have been identified at Euesperides in Libya, which was abandoned about 250 BC.[81] The two Sinopean stamps from Alexandria pale into insignificance in comparison with, for instance, the more than 100,000 Rhodian stamps found there.[82] In view of the fact that Rhodos was the second largest recipient of Sinopean amphorae in the Mediterranean,[83] it is interesting to note that 59 Rhodian stamps have been brought to light at Sinope, where they make up about half of the non-Sinopean stamps. 11 of these may be dated to period II (ca. 270-199 BC), 13 to period III (ca. 198-161 BC), and 14 to period IV (ca. 160-146 BC),[84] which accords fairly well with the fact that the highest number of stamped Sinopean amphorae seems to have reached the Mediterranean between 253 and 185 BC.[85] The occurrence of Rhodian amphorae at Sinope and *vice versa* is remarkable in view of the strong possibility that wine was the principal primary contents of both amphora classes.[86] But their presence is in accordance with the friendly relations between the two cities, which written sources hint at. Thus, in 220 BC, when Mithridates II of Pontos went to war with the Sinopeans, the Rhodians helped them with a loan of 140,000 drachmas, and according to Polybios (4.56), "the [Rhodian] commissioners got ready ten thousand jars of wine, three hundred talents of prepared hair, a hundred talents of prepared bow-string, a thousand complete suits of armour, three thousand gold pieces, and four catapults with their artillerymen,

on receiving which the Sinopean envoys returned home".[87] In this volume, Zofia Archibald and Krzysztof Domżalski are presenting archaeological evidence (glass and ceramic fine wares) of other possible links between Rhodos and the Black Sea region, and it seems possible that many occurrences of Sinopean amphorae in the Mediterranean might be connected with Rhodian trade activities in that region.[88] Thus, the stamped Sinopean amphorae found in Athens[89] might reflect a Rhodian involvement in the supply of Pontic grain to that city.[90] We should probably envisage a "two-pronged" Rhodian trade network – with one main system of routes connecting the Aegean with the Black Sea, and another linking the Aegean with Cyprus, parts of the Levant and most importantly Egypt. The extreme rarity of Sinopean stamps in Alexandria does not speak against this notion, but suggests that the two networks were not directly linked. There is, indeed, no reason why they would be, assuming that the Rhodians in both cases traded wine for grain, which could be marketed in the Aegean.[91]

3) Few transport amphorae from the Black Sea region seem to have reached the Mediterranean in the late Hellenistic period, and the number of Rhodian amphorae imported to the Black Sea region likewise declined through the 2nd century BC, and especially in the first part of the 1st century BC.[92] Perhaps this reflects a general decline in trading activity, which according to Žuravlev occurred in all of the northern Pontic cities around the end of the 2nd or the first half of the 1st centuries BC?[93]

4) In the Roman period, the pottery shipped from the Black Sea to the Mediterranean comprised both transport amphorae and at least one class of ceramic fine ware. The circulation of transport amphorae and sigillata from the Pontic region in the eastern and the western Mediterranean was by now fairly wide and no longer concentrated geographically in the Aegean, as had largely been the case previously. The fact that both categories have been found at Athens, Corinth, Knossos and Berenike may indicate that the transport amphorae and the Pontic Sigillata had been brought there on the same ships, so to speak. Moreover, it seems that a larger number of Black Sea centres were involved than in the late Classical and Hellenistic periods.

5) It is possible that some travellers coming to the Mediterranean from the Black Sea – especially those who intended to settle abroad – might have brought along their own pottery. But it seems likely that most of the Pontic transport amphorae and fine wares that reached the Mediterranean were carried there as objects of trade. Their scarcity suggests, however, that the trade in the commodities transported in the amphorae must have been very low,[94] and the same probably holds true for Pontic Sigillata. Even at Berenike, which is the major documented find spot of the ware in the Mediterranean, it constituted no more than ca. 3 % of the fine wares datable between about

25 BC and AD 100, and 1.7 % of the fine wares of the second century AD, respectively.

On the brink of the unknown

When one considers the other side of the coin – i.e. the very considerable import into the Black Sea of pottery manufactured in the Mediterranean – it becomes evident that the seaborne exchange of goods between the Black Sea and the Mediterranean must have been considerably larger than suggested by the material reviewed above. It is beyond the scope of this paper to discuss import of Aegean pottery in the Black Sea region in any detail, but the about 15,000 Rhodian amphora stamps found in the northern Black Sea area alone are indicative of the enormous quantities of (presumably) wine involved.[95] There is a striking contrast between this number and the 177 Sinopean amphora stamps known from the entire Mediterranean, which cannot be explained away by the supposition of different rates of stamping between the two classes.

It is reasonable to assume that more or less the same number of merchant ships sailed into the Black Sea as those heading in the opposite direction, and the simplest way to account for the huge discrepancy noted above is to assume that the bulk of cargoes carried from the Black Sea to the Mediterranean consisted of archaeologically invisible goods such as grain, timber, slaves etc. – as suggested by Greaves, Kramer and Garlan for the Archaic, Classical and early Hellenistic periods.[96] This is by and large in accordance with the commodities mentioned by ancient authors.[97] The role of ceramic fine wares and of commodities carried in the transport amphorae, such as wine, olive oil, or even fish products,[98] must have been marginal.

I am unaware of large-scale ceramic imports from the Mediterranean to the Black Sea region in the Roman Imperial period in contrast to the situation in the late Classical and Hellenistic periods,[99] which could suggest that commercial relations between the Black Sea and the Mediterranean were at a considerably lower level in Roman times than in the preceding periods – unless we are dealing with both imports and exports that were archaeologically (and perhaps also historically) invisible items: the joker in the pack.

At the end, we are thus reminded of the limits of our knowledge. Even if we are right in regarding transport amphorae as direct evidence of trade and other kinds of pottery as an index of trade, the present study serves as a healthy reminder that these categories do not reveal the whole picture. But then again: neither do other historical or archaeological sources.

Additional note: After this contribution went to press, I have become aware of the identification of more than twenty examples of Pontic Sigillata at Abdera and Thasos in northern Greece, cf. V. Malamidou 2005. *Roman Pottery in Context: Fine and Coarse wares from five sites in nort-eastern Greece* (BAR International Series, 1386). Oxford, 46-47 and 78; also, the possible presence of a vessel at Mons Claudianus may be signalled, R. Tomber 2006, The Pottery, in: Maxfield, V.A. & D.P.S. Peacock (eds.), *Survey and Excavation Mons Claudianus 1987-1993* (Institut français d'archéologie orientale, Foulles de L'IFAO 54). Le Caire, 3-235, notably p. 25 no. 45 fig. 1.5.

Notes

1 "Black Sea" and "Pontic" are used synonymously in this paper.
2 Notable examples of such studies being Françoise Alabe's (1986) article on Sinopean amphora stamps found outside the Pontic area, Norbert Kramer's (2002) wide-ranging survey of the evidence of the stamped amphorae, John W. Hayes' study of Pontic Sigillata (1985), and Yvon Garlan's authoritative paper in this volume.
3 See Finkielsztejn 2002; Eiring & Lund 2004; Lawall 2005a.
4 Peacock 1982, 154. For the ongoing debate about the source value of ceramic fine wares, cf. Greene 2005 and Lund 2006b.
5 Gibbins 2001, 277, 290 and *passim*. Ceramic fine wares occur in relatively big quantities in a number of shipwrecks, cf. for instance Jubier 2003; Cabrera & Rouillard 2003; Parker 1992, 109, no. 209, 380, no. 1020, for some examples.
6 Nieto *et al*. 2001.
7 Gibbins 2001, 277, 290 and *passim*.
8 Kassab Tezgör & Touma 2001.
9 Erten, Kassab Tezgör, Türkmen & Zararsız 2004.
10 Cf. further Reynolds 2005, 566.
11 Zeest 1960, 114-115, pl. 33; Hayes 1983, 155: Knossos Type 38; Panella 1986, 628, n. 39; Dyczek 2001, 151-159 (type 21).
12 Riley 1979, 188-189: Benghazi Mid Roman Amphora 5.
13 Slane 2000, 303; for the source of the Kapitän II amphorae, cf. Bezeczky 2005, 45.
14 Dyczek 2001, 157.
15 Zeest 1960, 112 (type 73), pl. 30; Hayes 1983, 153 (type 34); Abadie-Reynal 1999, 200 (Amphores à pâte rouge d), fig. 11.
16 Cf. Garlans contribution to this volume.
17 Furtwängler 1992, 366 and fig. 2.
18 Kramer 2002, 84, n. 23.
19 Kramer 2002, 84-85, fig. 1.
20 Barker 2004, 77, tab. 1; Nicolaou 2005, 258-259, nos. 764-766.
21 Furtwängler 1992, 366 and fig. 2.
22 Kramer 2002, 86, n. 30.
23 Conovici 1998.
24 Fedoseev 1992; Conovici 1998, 16, n. 22; 2004, 100.
25 Jöhrens 1999, 254-256, 260.
26 Garlan 2004, 21 and 27.
27 Empereur 1982; Lawall 2005a with references.
28 Lawall 2005a, 203-204, tab. 9.2.

29 Lawall 2002, 226, no. 100, fig. 13.
30 Lawall 1999, 195, 196, tab. 1 and 207, no. 64, fig. 8, no. 65, fig. 8, and 207-208, no. 67, fig. 8. According to Lawall 1999, 195: The "possible Black Sea" fragments "may be better labelled as "unattributed"". Cf. further Lawall 2005a, 208, tab. 9.7.
31 Lawall 2005a, 205, tab. 9.3.
32 Blondé, Muller & Mulliez 1991, 236, nos. 64-66, fig. 10 (Sinope) and no. 67, fig. 11 (Herakleia Pontike). The finds included three stamped specimens.
33 Rotroff 1997.
34 *Bibliographia Hellinistikis Keramikis 1980-1995*: A': *Hellas – Kypros* (*A Bibliography of Hellenistic Pottery 1980-1995* A': *Greece-Cyprus*), Thessaloniki.
35 Cf. for instance, Abadie-Reynal 1999; Dyczek 2001; Opaiț 2004.
36 Erten, Kassab Tezgör, Türkmen & Zararsız 2004.
37 Zeest 1960, 117 (type 90), pl. 37; Scorpan 1977, 274 (type VII.1), figs. 10-11; Riley 1979, 205-206 (Mid Roman Amphora 18); Abadie-Reynal 1999, 259 (Amphores à pâte rouge a), fig. 8.
38 Riley 1979, 205: "a North Aegean or Black Sea origin seems likely".
39 Abadie-Reynal 1999, 259.
40 Grace 1961, fig. 37; Riley 1979, 206.
41 Hayes 1983, 147-149 (types 15 and 18).
42 Pülz 1985, 89 (form 19), 97, no. 59, fig. 10; Abadie-Reynal 1999, 259, n. 27.
43 Riley 1979, 206; Hayes 1991, 92 (type V), no. 25, fig. 39; Abadie-Reynal 1999, 259, n. 28.
44 Riley 1979, 205-206: Mid Roman Amphora 18.
45 Riley 1979, 206.
46 Panella 1986, 624, fig. 22; Abadie-Reynal 1999, 259, n. 29.
47 Zeest 1960, 118 (type 94), pl. 38; Dyczek 2001, 202-220 (in part) (type 28.c), fig. 118.c. Panella 1986, 628 suggests that the form originates in "una località delle Russia meridionale".
48 Robinson 1959, 56, no. J 51, pl. 11.
49 Slane 1986, 298, no. 124, fig. 18.
50 Hayes 1983, 147 (type 14), fig. 21.
51 Panella 1986, 628, n. 40.
52 Zeest 1960, 113 (type 75), pl. 31; Dyczek 2001, 233-239 (type 32). Cf. Opaiț in this volume.
53 Knigge, Rügler, Schöne & von Freytag gen. Löringhoff 1991, 385-386, Abb. 23; Dyczek 2001, 236.
54 Dyczek 2001, 236.
55 Cf. Opaiț in this volume.
56 Hayes 1983, 155 (type 39).
57 Panella 1986, 628, n. 38, fig. 26.
58 Hayes 1983, 151 (type 26) and 155 (type 36).
59 Slane 2000, 303, n. 20, fig. 14g where the type is referred to Sinope on the basis of the fabric.
60 Slane 2000, 302, fig. 3.
61 Perhaps a perusal of the entire amphora literature would enable us to add more dots to the Mediterranean distribution map, but it seems unlikely that the overall picture would be changed.
62 Hayes 1985, 92-96; Hayes 1997, 54: "whether made in the Istanbul region, the Crimea or elsewhere"; Hayes 2001, 150.

63 Zhuravlev 2000b, 152-155; see further Domżalski 1996, 99-104; Domżalski & Zin'ko 1999, 75-79; Čistov & Domżalski 2001, 112-115.
64 Kenrick 1985, 271-282.
65 Sackett 1992, 159; Forster 2001, 143.
66 Malamidou 2005, 46-47; 83 and tab. 31.
67 Robinson 1959, 49, nos. H 31-32 and Kenrick 1985, 276 and 279; Robinson 1959, 28, no. G 61, pl. 5, 57, 66 and Hayes 1985, 93, pl. 33.3; Robinson 1959, 28, no. G 61, pl. 5, 57, 66 and Hayes 1985, 93, pl. 33.3; according to Kenrick 1985, 278 the bowl Robinson 1959, 29, no. G 65, pl. 5, 66 is "probably this ware"; Hayes 1985, 94, pl. 23.7.
68 Hayes 1985, 93, pl. 23.4. Bes & Poblome 2006, 145, tab. 1 lists six specimens.
69 Bes & Poblome 2006, 145, tab. 1 lists one specimen.
70 Malamidou 2005, 47.
71 Waagé 1948, 40, fig. 2.52 and Kenrick 1985, 273.
72 Holwerda 1936, no. 368, Hayes 1985, 94 and Kenrick 1985, 277; perhaps also Holwerda 1936, no. 371 and Kenrick 1985, 277.
73 Goldman 2005, 62, figs. 5-6, unless we are dealing with pottery of Galatian manufacture imitating Pontic wares as suggested by the author.
74 Berti, Carandini, Fabbricotti, Gasparri *et al*. 1970, 212 and pl. 13.155; Kenrick 1985, 277; Carandini & Panella (eds.) 1973, 168, pl. 33.226 and pl. 54.451.a, Kenrick 1985, 277.
75 Pucci 1977, 20-21, pl. 5.26-29, Kenrick 1985, 273 and 276.
76 Sorda & Mercando 1974, 317, fig. 237.162a and 334.h; Kenrick 1985, 276.
77 Maioli 1976, 160, n. 4, Kenrick 1985, 273.
78 Hayes 2001, 150, fig. 5, no. 11.
79 Martin & De Senna 2003, 44-45.
80 Cf. Bes & Poblome 2006, 143-149, graph 1 and tabs. 1-3.
81 Göransson 2007, 232.
82 Kramer 2002, 87-91.
83 Cf. Garlan in this volume.
84 Conovici & Garlan 2004. According to these scholars (p. 106), three stamps may be dated to Period I, six to Period V and two to Period VI. For the chronological limits of these periods, see Finkielsztejn 2001.
85 Garlan in this volume and above p. 185.
86 Cf. Kramer 2002; Lund 2004 and Lund & Gabrielsen 2005, 163-164 and *passim*, *pace* Garlan 2000, 89, who argues that the Sinopean amphorae might also have contained other products.
87 See Berthold 1984, 93-94; Gabrielsen 1997, 65.
88 Cf. also the evidence usefully collected in Badal'janc 1999.
89 Garlan in this publication.
90 Cf. Berthold 1984, 52-53 and *passim.*
91 Rightly stressed by Kramer 2002, 88. The scarcity of Sinopean amphora stamps in Seleukid Syria is less surprising, since Rhodian amphora stamps are also rare there, cf. Lund 2006a.
92 Cf. Conovici 2005.
93 Zhuravlev 2003, 219.
94 Cf. also Kramer 2002, 91 for the Hellenistic period.
95 Badal'janc 1999, 248.

96 Kramer 2002, 92 and Garlan in this volume. Also on grain, timber and slaves see, respectively, Braund, Hannestad and Avram in this volume.
97 Cf. Tsetskhladze 1998a; Kramer 2002, 92-93.
98 Thus also Lund & Gabrielsen 2005; Andrei Opaiț's contribution to the present volume points in the same direction, since the amphora types which he considers to have been used for Black Sea fish products are only found in very limited quantities in the Mediterranean.
99 Cf. the contribution by Žuravlev in this volume for imports of Italian-type sigilata and lamps.